

Clustering Polypeptide motifs using the Hammock hidden Markov model peptide clustering

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This script clusters Polypeptide motifs using the Hammock hidden Markov model peptide clustering.

```
suppressPackageStartupMessages(library(knitr))
```

Loading samples

```
all.samples <- readRDS("data/allSamplesDataTable.RDS")
all.samples[, `:=`(Peptide, as.character(Peptide)), ]

setkey(all.samples, Group)

select.samples <- all.samples[J(c("mRNA_30cpc_SN", "mRNA_3cpc_SN", "mRNA_30cpc_Th",
  "mRNA_3cpc_Th", "mRNA_30cpc_Ctx", "mRNA_3cpc_Ctx", "mRNA_30cpc_SN_4wks",
  "mRNA_3cpc_SN_4wks", "mRNA_30cpc_Th_4wks", "mRNA_3cpc_Th_4wks", "mRNA_30cpc_Ctx_4wks",
  "mRNA_3cpc_Ctx_4wks")))]

select.samples[, `:=`(BCcount, as.integer(mclapply(BC, function(x) length(table(strsplit(paste(t(x),
  collapse = ","), ","))), mc.cores = detectCores())))]
select.samples[, `:=`(Animalcount, as.integer(mclapply(Animals, function(x) length(table(strsplit(paste(t(x),
  collapse = ","), ","))), mc.cores = detectCores())))]
select.samples[, `:=`(Score, BCcount + Animalcount - 1), ]

select.samples.trsp <- unique(select.samples, by = c("Animals", "BC", "LUTnrs"))

fasta.names <- paste(1:nrow(select.samples.trsp), select.samples.trsp$Score,
  select.samples.trsp$Group, sep = "|")
write.fasta(as.list(select.samples.trsp$Peptide), fasta.names, "data/trspSamplesPeptides.fasta",
  open = "w", nbchar = 60, as.string = TRUE)

# Generate Scoring table for Weblogo Weighting
select.samples.pepMerge <- select.samples.trsp[, sum(Score), by = c("Peptide")]
setnames(select.samples.pepMerge, "V1", "Score")
```

Executing Hammock Clustering

```
Sys.setenv(PATH = paste("/root/HMMER/binaries", Sys.getenv("PATH"), sep = ":"),
  HHLIB = "/home/rstudio/Hammock_v1.2.0/hhsuite-2.0.16/lib/hh/")
unlink("/home/rstudio/data/Hammock", recursive = TRUE, force = FALSE)
sys.out <- system(paste("java -jar /home/rstudio/Hammock_v1.2.0/dist/Hammock.jar full -i /home/rstudio/data/
  detectCores(), sep = ""), intern = TRUE, ignore.stdout = TRUE)
# Alternative parameters --use_clinkage --alignment_threshold 23 --max_shift
# 13 --max_aln_length 37 --count_threshold 50 --max_inner_gaps 0
# --assign_thresholds 14.1,10.5,7.0
hammock.log <- data.table(readLines("data/Hammock/run.log"))
```

```
colnames(hammock.log) <- c("Hammock log file")
knitr::kable(hammock.log, longtable = T)
```

Hammock log file

2020-11-10 12:04:19.807:

Hammock version 1.2.0 Run with `-help` for a brief description of command line parameters.

2020-11-10 12:04:20.396: Program started in mode "full".

Command-line arguments:

full -i /home/rstudio/data/trspSamplesPeptides.fasta -d /home/rstudio/data/Hammock -max_shift 7 -c 65 -t 48

Complete list of input/output parameters:

-i, -input /home/rstudio/data/trspSamplesPeptides.fasta

-d, -output_directory /home/rstudio/data/Hammock

-t, -thread 48

-l, -labels null

Complete list of clinkage clustering parameters:

-f, -file_format fasta

-m, -matrix /home/rstudio/Hammock_v_1.2.0/matrices/blosum62.txt

-g, -alignment_threshold (-greedy_threshold)null

-x, -max_shift 7

-p, -gap_penalty 0

-C, -cache_size_limit 1

2020-11-10 12:04:20.396: Loading input sequences...

2020-11-10 12:04:20.467: 4143 unique sequences loaded.

2020-11-10 12:04:20.473: 9028 total sequences loaded.

2020-11-10 12:04:20.473: 4143 unique sequences after non-specified labels filtered out

2020-11-10 12:04:20.481: 9028 total sequences after non-specified labels filtered out

2020-11-10 12:04:20.482: Shortest sequence: 14 AA. Longest sequence: 22 AA.

2020-11-10 12:04:20.482: Up to 10 000 unique sequences. Using clinkage clustering. Use `-use_greedy` to force greedy clustering

2020-11-10 12:04:20.516: Generating input statistics...

2020-11-10 12:04:20.536: Clinkage clustering threshold not set. Setting automatically to: 26

2020-11-10 12:04:20.538: Clinkage clustering...

2020-11-10 12:04:56.920: Ready. Clustering time: 36382

2020-11-10 12:04:56.921: Resulting clusters: 1668

2020-11-10 12:04:56.921: Building MSAs...

2020-11-10 12:04:57.592: Ready. Total time: 37054

2020-11-10 12:04:57.592: Saving results to output files...

2020-11-10 12:04:57.984: Clinkage clustering results in: /home/rstudio/data/Hammock/initial_clusters.tsv

2020-11-10 12:04:57.984: and: /home/rstudio/data/Hammock/initial_clusters_sequences.tsv

2020-11-10 12:04:57.984: and: /home/rstudio/data/Hammock/initial_clusters_sequences_original_order.tsv

2020-11-10 12:04:57.985:

Loading clusters...

2020-11-10 12:04:58.020: Maximal alignment length not set. Setting automatically to: 30

2020-11-10 12:04:58.021: Minimal number of match states not set. Setting automatically to: 5

2020-11-10 12:04:58.135: Assign threshold not set. Setting automatically to:

2020-11-10 12:04:58.186: 14.43,11.39,8.36

2020-11-10 12:04:58.186: Overlap threshold not set. Setting automatically to:

2020-11-10 12:04:58.188: 10.63,6.08,0.0

2020-11-10 12:04:58.188: Merge threshold not set. Setting automatically on the basis of average sequence length to:

2020-11-10 12:04:58.190: 15.19,13.67,12.15

2020-11-10 12:04:58.190: Initial extension threshold not set. Setting automatically on the basis of merge threshold sequence to: 16.709

Complete list of HMM-based clustering parameters:

-a, -part_threshold null
-s, -size_threshold null
-c, -count_threshold 65
-n, -assign_thresholds 14.43,11.39,8.36,
-v, -overlap_thresholds 10.63,6.08,0.0,
-r, -merge_thresholds 15.19,13.67,12.15,
-e, -relative_thresholds false
-b, -absolute_thresholds true
-h, -min_conserved_positions 5
-y, -max_gap_proportion 0.2
-k, -min_ic 1.2
-j, -max_aln_length 30
-u, -max_inner_gaps 0
-q, -extension_increase_length false

2020-11-10 12:04:58.312: Initial cluster extension...

2020-11-10 12:05:24.097:

Clustering in 3 rounds...

2020-11-10 12:05:24.097:

2020-11-10 12:05:24.098: Round 1:

2020-11-10 12:05:24.098: 65 clusters remaining

2020-11-10 12:05:24.098: Building hmms and searching database...

2020-11-10 12:05:24.324: Extending clusters...

2020-11-10 12:05:24.328: 69 sequences to be inserted into clusters

2020-11-10 12:05:24.329: 32 clusters to be extended

2020-11-10 12:05:24.350: 44 sequences rejected

2020-11-10 12:05:24.351: 1 cluster pairs to check and merge.

2020-11-10 12:05:24.351: Merging clusters from 1 groups...

2020-11-10 12:05:24.374: Building hhs...

2020-11-10 12:05:24.374: HH clustering...

2020-11-10 12:05:24.620:

2020-11-10 12:05:24.620: Round 2:

2020-11-10 12:05:24.621: 65 clusters remaining

2020-11-10 12:05:24.621: Building hmms and searching database...

2020-11-10 12:05:24.782: Extending clusters...

2020-11-10 12:05:24.786: 74 sequences to be inserted into clusters

2020-11-10 12:05:24.786: 31 clusters to be extended

2020-11-10 12:05:24.811: 63 sequences rejected

2020-11-10 12:05:24.813: 63 cluster pairs to check and merge.

2020-11-10 12:05:24.813: Merging clusters from 9 groups...

2020-11-10 12:05:24.821: Building hhs...

2020-11-10 12:05:24.839: HH clustering...

2020-11-10 12:05:25.785:

2020-11-10 12:05:25.785: Round 3:

2020-11-10 12:05:25.785: 64 clusters remaining

2020-11-10 12:05:25.785: Building hmms and searching database...

2020-11-10 12:05:25.955: Extending clusters...

2020-11-10 12:05:25.958: 163 sequences to be inserted into clusters

2020-11-10 12:05:25.958: 45 clusters to be extended

Hammock log file

2020-11-10 12:05:26.013: 97 sequences rejected
2020-11-10 12:05:26.013: Overlap threshold is 0. Running full cluster merging.
2020-11-10 12:05:26.023: Buiding hhs...
2020-11-10 12:05:26.042: HH clustering...
2020-11-10 12:05:29.603:
Ready. Clustering time : 5506
2020-11-10 12:05:29.604: Resulting clusers: 57
2020-11-10 12:05:29.604: Containing 470 unique sequences and 1484 total sequences.
2020-11-10 12:05:29.606: Unique sequences not assigned: 2906, total sequences not assigned: 5342
2020-11-10 12:05:29.607: Saving results to outupt files...
2020-11-10 12:05:29.681: Results in: /home/rstudio/data/Hammock/final_clusters_sequences.tsv
2020-11-10 12:05:29.681: and: /home/rstudio/data/Hammock/final_clusters.tsv
2020-11-10 12:05:29.681: and: /home/rstudio/data/Hammock/final_clusters_sequences_original_order.tsv
2020-11-10 12:05:29.681:
Calculating KLD...
2020-11-10 12:05:29.826: Final system KLD over match state MSA positions: 17.1758735974364
2020-11-10 12:05:29.826: Final system KLD over all MSA positions: 20.09305270293785
2020-11-10 12:05:29.826: Program successfully ended.

Generation of Weblogo visualization

```
ham.clusters <- data.table(read.table("/home/rstudio/data/Hammock/final_clusters.tsv",
  header = TRUE, skip = 0, sep = "\t", stringsAsFactors = FALSE, fill = TRUE))
id.order <- as.list(ham.clusters$cluster_id)
ham.clusters.all <- data.table(read.table("/home/rstudio/data/Hammock/final_clusters_sequences.tsv",
  header = TRUE, skip = 0, sep = "\t", stringsAsFactors = FALSE, fill = TRUE))
ham.clusters.all[, `:=`(alignment, gsub("\\-", "\\_", alignment))]
setkey(select.samples, Peptide)
setkey(select.samples.trsp, Peptide)

unlink("/home/rstudio/data/WEBlogos", recursive = TRUE, force = FALSE)
dir.create(file.path("/home/rstudio/data/", "WEBlogos"), showWarnings = FALSE)
dir.create(file.path("/home/rstudio/data/Hammock/", "alignments_final_Scored"),
  showWarnings = FALSE)

setkey(ham.clusters.all, cluster_id)
setkey(ham.clusters, cluster_id)
setkey(select.samples.pepMerge, Peptide)

opts_chunk$set(out.width = "100%", fig.align = "center")
generateWeblogo <- function(in.name) {
  # in.name <- ham.clusters$cluster_id[2] in.name <- 6777
  this.fa <- read.fasta(file = paste("/home/rstudio/data/Hammock/alignments_final/",
    in.name, ".aln", sep = ""))
  allSeqs <- unlist(getSequence(this.fa, as.string = TRUE))
  allSeqs <- data.table(unlist(lapply(allSeqs, function(x) gsub("([ -])", "",
    toupper(x)))))
  allSeqs.out <- select.samples.pepMerge[J(allSeqs)]
  allSeqs.out$Annot <- data.table(getName(this.fa))
  allSeqs.out[, `:=`(Annot, paste(Annot, "_", Score, sep = ""))]
  allSeqs.out$Alignment <- data.table(toupper(unlist(getSequence(this.fa,
    as.string = TRUE))))
```

```

allSeqs.out <- allSeqs.out[rep(1:.N, Score)][, `:=`(Indx, 1:.N), by = Peptide]
allSeqs.out[, `:=`(Annot, paste(Annot, "_", Indx, sep = ""))]

write.fasta(as.list(allSeqs.out$Alignment), allSeqs.out$Annot, nbchar = 60,
  paste("/home/rstudio/data/Hammock/alignments_final_Scored/", in.name,
    ".aln", sep = ""), open = "w")

this.main <- ham.clusters[J(in.name)]
main.gene <- select.samples.trsp[J(this.main$main_sequence)]$GeneName[1]
this.title <- paste("## Peptide", this.main$main_sequence, "from", main.gene,
  "with cluster number", in.name, sep = " ")

tmp <- system(paste("weblgo --format PDF --sequence-type protein --size large --errorbars NO --resolution",
  this.title, "' < /home/rstudio/data/Hammock/alignments_final_Scored/",
  in.name, ".aln > /home/rstudio/data/WEBlogos/", in.name, ".pdf", sep = ""),
  intern = TRUE, ignore.stdout = FALSE)

cat("\n")
cat(this.title, "\n")
cat("\n")
cat("\n")
cat(paste0("![Peptide: ", this.main$main_sequence, " from ", main.gene,
  " with cluster number ", in.name, "](/home/rstudio/data/WEBlogos/",
  in.name, ".pdf)"))
cat("\n")
out.table <- knitr::kable(this.main[, c(1:8, 10)], format = "latex")
print(column_spec(out.table, 1:9, monospace = TRUE) %>% kable_styling(latex_options = c("striped",
  "scale_down", "repeat_header"))))
cat("\n")
this.cluster <- ham.clusters.all[J(in.name)]
out.table <- knitr::kable(this.cluster[, c(1:7)], format = "latex")
print(column_spec(out.table, 1:7, monospace = TRUE) %>% kable_styling(latex_options = c("striped",
  "scale_down", "repeat_header"))))

this.found <- select.samples[J(this.cluster$sequence)]
setnames(this.cluster, "sequence", "Peptide")
this.found <- merge(this.found, this.cluster[, 2:3], by = "Peptide", all = FALSE)
cat("\n")
cat("\n")
output.order <- c("alignment", "LUTnrs", "GeneName", "start", "structure",
  "Group", "Score")
if (nrow(this.found) >= 48) {
  this.found.p1 <- this.found[1:47, ]
  out.table <- knitr::kable(this.found.p1[, ..output.order], format = "latex")
  print(column_spec(out.table, 1, monospace = TRUE) %>% kable_styling(latex_options = c("striped",
    "scale_down", "repeat_header"))))
  cat("\n")
  cat("\n\n\\pagebreak\n")
  cat("\n\n\\clearpage\n")
  this.found <- this.found[48:nrow(this.found), ]
  if (nrow(this.found) >= 48) {
    this.found.p2 <- this.found[1:47, ]
    out.table <- knitr::kable(this.found.p2[, ..output.order], format = "latex")
    print(column_spec(out.table, 1, monospace = TRUE) %>% kable_styling(latex_options = c("striped",
      "scale_down", "repeat_header"))))
    cat("\n")
    cat("\n\n\\pagebreak\n")
  }
}

```

```

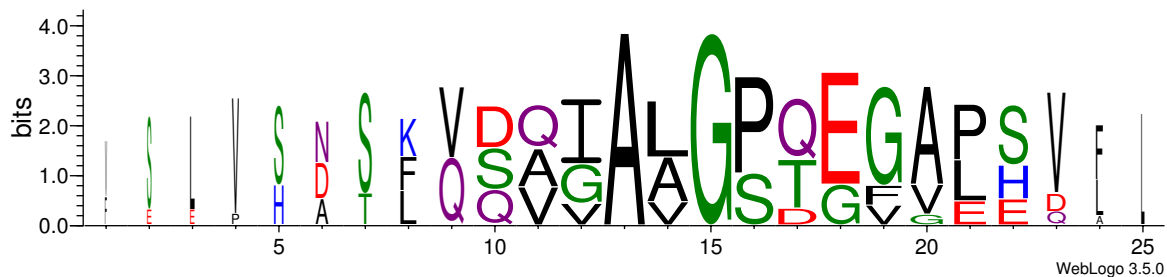
      cat("\n\n\\clearpage\n")
      this.found <- this.found[48:nrow(this.found), ]
    }
    if (nrow(this.found) >= 48) {
      this.found.p2 <- this.found[1:47, ]
      out.table <- knitr::kable(this.found.p2[, ..output.order], format = "latex")
      print(column_spec(out.table, 1, monospace = TRUE) %>% kable_styling(latex_options = c("striped",
        "scale_down", "repeat_header")))
      cat("\n")
      cat("\n\n\\pagebreak\n")
      cat("\n\n\\clearpage\n")
      this.found <- this.found[48:nrow(this.found), ]
    }
    out.table <- knitr::kable(this.found[, ..output.order], format = "latex")
    print(column_spec(out.table, 1, monospace = TRUE) %>% kable_styling(latex_options = c("striped",
      "scale_down", "repeat_header")))
    cat("\n")
    cat("\n\n\\clearpage\n")
    cat("\n\n")
  } else {
    out.table <- knitr::kable(this.found[, ..output.order], format = "latex")
    print(column_spec(out.table, 1, monospace = TRUE) %>% kable_styling(latex_options = c("striped",
      "scale_down", "repeat_header")))
    cat("\n")
    cat("\n\n\\pagebreak\n")
    cat("\n\n\\clearpage\n")
  }
}

invisible(lapply(id.order, generateWeblogo))

```

Peptide QQIAAGPTEGAPSV from HSV-1-pUL22 with cluster number 4612

Peptide QQIAAGPTEGAPSV from HSV-1-pUL22 with cluster number 4612



cluster_id	main_sequence	sum	mRNA_30cpc_Ctx	mRNA_30cpc_Th	mRNA_30cpc_SN	mRNA_3cpc_Th	mRNA_3cpc_Ctx	mRNA_3cpc_SN
4612	QQIAAGPTEGAPSV	64	17	17	10	12	4	2

cluster_id	sequence	alignment	sum	mRNA_30cpc_Ctx	mRNA_30cpc_Th	mRNA_30cpc_SN
4612	QQIAAGPTEGAPSV	_____QQIAAGPTEGAPSV__	16	3	3	2
4612	QSVIALGSQEGALH	_____QSVIALGSQEGALH__	9	1	2	0
4612	QIAAGPTEGAPSVF	_____QIAAGPTEGAPSVF_	6	3	1	2
4612	VSNSFVDAGALGPDGVVEEDLL	___VSNSFVDAGALGPDGVVEEDLL	4	1	2	1
4612	VDAGAVGPQGFVEE	_____VDAGAVGPQGFVEE__	4	1	1	1
4612	SLVSDSLVDAGAVG	_SLVSDSLVDAGAVG_____	4	1	3	0
4612	NSFVDAGALGPDGV	_____NSFVDAGALGPDGV_____	4	1	2	1
4612	KQSVVALGSQEGGL	_____KQSVVALGSQEGGL_____	4	1	1	1
4612	HATKQSVVALGSQE	___HATKQSVVALGSQE_____	4	1	2	0
4612	VSLVSDSLVDAGAVGPQGFVEE	VSLVSDSLVDAGAVGPQGFVEE__	2	1	0	1
4612	SVVALGSQEGALHQ	_____SVVALGSQEGALHQ__	2	1	0	1
4612	SLVDAGAVGPQGFV	_____SLVDAGAVGPQGFV_____	1	1	0	0
4612	QQQIAAGPTEGAPS	_____QQQIAAGPTEGAPS__	1	0	0	0
4612	IALGSQEGALHQAL	_____IALGSQEGALHQAL	1	0	0	0
4612	FEEPHATKQSVVALGSQEGALH	FEEPHATKQSVVALGSQEGALH__	1	1	0	0
4612	DSLVDAGAVGPQGF	_____DSLVDAGAVGPQGF_____	1	0	0	0

alignment	LUThrs	GeneName	start	structure	Group	Score
_____DSLVDAGAVGPQGF_____	X34335	HSV-2-pUS7	33	14aa	mRNA_30cpc_SN_4wks	1
FEPPHATKQSVVALGSQEGALH____	X75711	JEV-E-BN19	242	22aa	mRNA_30cpc_Ctx	1
FEPPHATKQSVVALGSQEGALH____	X75711	JEV-E-KE-093	242	22aa	mRNA_30cpc_Ctx	1
FEPPHATKQSVVALGSQEGALH____	X75711	JEV-E-SA14-5-3	242	22aa	mRNA_30cpc_Ctx	1
FEPPHATKQSVVALGSQEGALH____	X75711	JEV-E-ThCMAr4492	242	22aa	mRNA_30cpc_Ctx	1
FEPPHATKQSVVALGSQEGALH____	X75711	WNV-E-AZ10-918	242	22aa	mRNA_30cpc_Ctx	1
FEPPHATKQSVVALGSQEGALH____	X75711	WNV-E-ArD76104	238	22aa	mRNA_30cpc_Ctx	1
FEPPHATKQSVVALGSQEGALH____	X75711	WNV-E-H-442	242	22aa	mRNA_30cpc_Ctx	1
____HATKQSVVALGSQE_____	X17968	JEV-E-BN19	246	14aa	mRNA_30cpc_Th	2
____HATKQSVVALGSQE_____	X17968	JEV-E-KE-093	246	14aa	mRNA_30cpc_Th	2
____HATKQSVVALGSQE_____	X17968	JEV-E-SA14-5-3	246	14aa	mRNA_30cpc_Th	2
____HATKQSVVALGSQE_____	X17968	JEV-E-ThCMAr4492	246	14aa	mRNA_30cpc_Th	2
____HATKQSVVALGSQE_____	X17968	WNV-E-AZ10-918	246	14aa	mRNA_30cpc_Th	2
____HATKQSVVALGSQE_____	X17968	WNV-E-ArD76104	242	14aa	mRNA_30cpc_Th	2
____HATKQSVVALGSQE_____	X17968	WNV-E-H-442	246	14aa	mRNA_30cpc_Th	2
____HATKQSVVALGSQE_____	X17968	JEV-E-BN19	246	14aa	mRNA_3cpc_Th	1
____HATKQSVVALGSQE_____	X17968	JEV-E-KE-093	246	14aa	mRNA_3cpc_Th	1
____HATKQSVVALGSQE_____	X17968	JEV-E-SA14-5-3	246	14aa	mRNA_3cpc_Th	1
____HATKQSVVALGSQE_____	X17968	JEV-E-ThCMAr4492	246	14aa	mRNA_3cpc_Th	1
____HATKQSVVALGSQE_____	X17968	WNV-E-AZ10-918	246	14aa	mRNA_3cpc_Th	1
____HATKQSVVALGSQE_____	X17968	WNV-E-ArD76104	242	14aa	mRNA_3cpc_Th	1
____HATKQSVVALGSQE_____	X17968	WNV-E-H-442	246	14aa	mRNA_3cpc_Th	1
____HATKQSVVALGSQE_____	X17968	JEV-E-BN19	246	14aa	mRNA_30cpc_Ctx	1
____HATKQSVVALGSQE_____	X17968	JEV-E-KE-093	246	14aa	mRNA_30cpc_Ctx	1
____HATKQSVVALGSQE_____	X17968	JEV-E-SA14-5-3	246	14aa	mRNA_30cpc_Ctx	1
____HATKQSVVALGSQE_____	X17968	JEV-E-ThCMAr4492	246	14aa	mRNA_30cpc_Ctx	1
____HATKQSVVALGSQE_____	X17968	WNV-E-AZ10-918	246	14aa	mRNA_30cpc_Ctx	1
____HATKQSVVALGSQE_____	X17968	WNV-E-ArD76104	242	14aa	mRNA_30cpc_Ctx	1
____HATKQSVVALGSQE_____	X17968	WNV-E-H-442	246	14aa	mRNA_30cpc_Ctx	1
_______IALGSQEGALHQAL_____	X16286	JEV-E-BN19	253	14aa	mRNA_3cpc_Th	1
_______IALGSQEGALHQAL_____	X16286	JEV-E-KE-093	253	14aa	mRNA_3cpc_Th	1
_______IALGSQEGALHQAL_____	X16286	JEV-E-SA14-5-3	253	14aa	mRNA_3cpc_Th	1
_______IALGSQEGALHQAL_____	X16286	JEV-E-ThCMAr4492	253	14aa	mRNA_3cpc_Th	1
_______IALGSQEGALHQAL_____	X16286	WNV-E-AZ10-918	253	14aa	mRNA_3cpc_Th	1
_______IALGSQEGALHQAL_____	X16286	WNV-E-ArD76104	249	14aa	mRNA_3cpc_Th	1
_______IALGSQEGALHQAL_____	X16286	WNV-E-H-442	253	14aa	mRNA_3cpc_Th	1
_______KQSVVALGSQEGGL_____	X3844	JEV-E-BN19	249	14aa	mRNA_30cpc_SN	1
_______KQSVVALGSQEGGL_____	X3844	JEV-E-KE-093	249	14aa	mRNA_30cpc_SN	1
_______KQSVVALGSQEGGL_____	X3844	JEV-E-SA14-5-3	249	14aa	mRNA_30cpc_SN	1
_______KQSVVALGSQEGGL_____	X3844	JEV-E-ThCMAr4492	249	14aa	mRNA_30cpc_SN	1
_______KQSVVALGSQEGGL_____	X3844	WNV-E-AZ10-918	249	14aa	mRNA_30cpc_SN	1
_______KQSVVALGSQEGGL_____	X3844	WNV-E-ArD76104	245	14aa	mRNA_30cpc_SN	1
_______KQSVVALGSQEGGL_____	X3844	WNV-E-H-442	249	14aa	mRNA_30cpc_SN	1
_______KQSVVALGSQEGGL_____	X3844	JEV-E-BN19	249	14aa	mRNA_30cpc_Th	1
_______KQSVVALGSQEGGL_____	X3844	JEV-E-KE-093	249	14aa	mRNA_30cpc_Th	1
_______KQSVVALGSQEGGL_____	X3844	JEV-E-SA14-5-3	249	14aa	mRNA_30cpc_Th	1
_______KQSVVALGSQEGGL_____	X3844	JEV-E-ThCMAr4492	249	14aa	mRNA_30cpc_Th	1

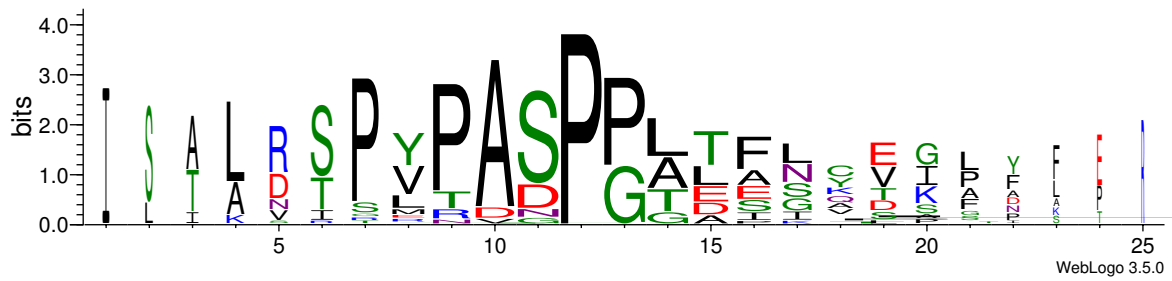
alignment	LUThrs	GeneName	start	structure	Group	Score
-----KQSVVALGSQEGGL-----	X3844	WNV-E-AZ10-918	249	14aa	mRNA_30cpc_Th	1
-----KQSVVALGSQEGGL-----	X3844	WNV-E-ArD76104	245	14aa	mRNA_30cpc_Th	1
-----KQSVVALGSQEGGL-----	X3844	WNV-E-H-442	249	14aa	mRNA_30cpc_Th	1
-----KQSVVALGSQEGGL-----	X3844	JEV-E-BN19	249	14aa	mRNA_3cpc_Th	1
-----KQSVVALGSQEGGL-----	X3844	JEV-E-KE-093	249	14aa	mRNA_3cpc_Th	1
-----KQSVVALGSQEGGL-----	X3844	JEV-E-SA14-5-3	249	14aa	mRNA_3cpc_Th	1
-----KQSVVALGSQEGGL-----	X3844	JEV-E-ThCMAr4492	249	14aa	mRNA_3cpc_Th	1
-----KQSVVALGSQEGGL-----	X3844	WNV-E-AZ10-918	249	14aa	mRNA_3cpc_Th	1
-----KQSVVALGSQEGGL-----	X3844	WNV-E-ArD76104	245	14aa	mRNA_3cpc_Th	1
-----KQSVVALGSQEGGL-----	X3844	WNV-E-H-442	249	14aa	mRNA_3cpc_Th	1
-----KQSVVALGSQEGGL-----	X3844	JEV-E-BN19	249	14aa	mRNA_30cpc_Ctx	1
-----KQSVVALGSQEGGL-----	X3844	JEV-E-KE-093	249	14aa	mRNA_30cpc_Ctx	1
-----KQSVVALGSQEGGL-----	X3844	JEV-E-SA14-5-3	249	14aa	mRNA_30cpc_Ctx	1
-----KQSVVALGSQEGGL-----	X3844	JEV-E-ThCMAr4492	249	14aa	mRNA_30cpc_Ctx	1
-----KQSVVALGSQEGGL-----	X3844	WNV-E-AZ10-918	249	14aa	mRNA_30cpc_Ctx	1
-----KQSVVALGSQEGGL-----	X3844	WNV-E-ArD76104	245	14aa	mRNA_30cpc_Ctx	1
-----KQSVVALGSQEGGL-----	X3844	WNV-E-H-442	249	14aa	mRNA_30cpc_Ctx	1
-----NSFVDAGALGPDGV-----	X777	HSV-1-pUS7	33	14aa	mRNA_30cpc_SN	1
-----NSFVDAGALGPDGV-----	X777	HSV-1-pUS7	33	14aa	mRNA_30cpc_Th	2
-----NSFVDAGALGPDGV-----	X777	HSV-1-pUS7	33	14aa	mRNA_30cpc_Ctx	1
-----QIAAGPTEGAPSVF-----	X18980	HSV-1-pUL22	757	14aa	mRNA_30cpc_SN	1
-----QIAAGPTEGAPSVF-----	X81477	HSV-1-pUL22	757	14aaG4S	mRNA_30cpc_SN	1
-----QIAAGPTEGAPSVF-----	X81477	HSV-1-pUL22	757	14aaG4S	mRNA_30cpc_Th	1
-----QIAAGPTEGAPSVF-----	X18980	HSV-1-pUL22	757	14aa	mRNA_30cpc_Ctx	1
-----QIAAGPTEGAPSVF-----	X81477	HSV-1-pUL22	757	14aaG4S	mRNA_30cpc_Ctx	2
-----QQIAAGPTEGAPSV-----	X19117	HSV-1-pUL22	756	14aa	mRNA_30cpc_SN	2
-----QQIAAGPTEGAPSV-----	X19117	HSV-1-pUL22	756	14aa	mRNA_3cpc_SN	1
-----QQIAAGPTEGAPSV-----	X19117	HSV-1-pUL22	756	14aa	mRNA_30cpc_Th	3
-----QQIAAGPTEGAPSV-----	X19117	HSV-1-pUL22	756	14aa	mRNA_3cpc_Th	4
-----QQIAAGPTEGAPSV-----	X19117	HSV-1-pUL22	756	14aa	mRNA_30cpc_Ctx	3
-----QQIAAGPTEGAPSV-----	X19117	HSV-1-pUL22	756	14aa	mRNA_3cpc_Ctx	2
-----QQIAAGPTEGAPSV-----	X19117	HSV-1-pUL22	756	14aa	mRNA_3cpc_Th_4wks	1
-----QQQIAAGPTEGAPS-----	X19124	HSV-1-pUL22	755	14aa	mRNA_3cpc_Th	1
-----QSVIALGSQEGALH-----	X18848	JEV-E-BN19	250	14aa	mRNA_3cpc_SN	1
-----QSVIALGSQEGALH-----	X18848	JEV-E-KE-093	250	14aa	mRNA_3cpc_SN	1
-----QSVIALGSQEGALH-----	X18848	JEV-E-SA14-5-3	250	14aa	mRNA_3cpc_SN	1
-----QSVIALGSQEGALH-----	X18848	JEV-E-ThCMAr4492	250	14aa	mRNA_3cpc_SN	1
-----QSVIALGSQEGALH-----	X18848	WNV-E-AZ10-918	250	14aa	mRNA_3cpc_SN	1
-----QSVIALGSQEGALH-----	X18848	WNV-E-ArD76104	246	14aa	mRNA_3cpc_SN	1
-----QSVIALGSQEGALH-----	X18848	WNV-E-H-442	250	14aa	mRNA_3cpc_SN	1
-----QSVIALGSQEGALH-----	X18848	JEV-E-BN19	250	14aa	mRNA_30cpc_Th	1
-----QSVIALGSQEGALH-----	X50146	JEV-E-BN19	250	14aaA5	mRNA_30cpc_Th	1
-----QSVIALGSQEGALH-----	X18848	JEV-E-KE-093	250	14aa	mRNA_30cpc_Th	1
-----QSVIALGSQEGALH-----	X50146	JEV-E-KE-093	250	14aaA5	mRNA_30cpc_Th	1
-----QSVIALGSQEGALH-----	X18848	JEV-E-SA14-5-3	250	14aa	mRNA_30cpc_Th	1
-----QSVIALGSQEGALH-----	X50146	JEV-E-SA14-5-3	250	14aaA5	mRNA_30cpc_Th	1
-----QSVIALGSQEGALH-----	X18848	JEV-E-ThCMAr4492	250	14aa	mRNA_30cpc_Th	1

alignment	LUThrs	GeneName	start	structure	Group	Score
-----QSVIALGSQEGALH___	X50146	JEV-E-ThCMAR4492	250	14aaA5	mRNA_30cpc_Th	1
-----QSVIALGSQEGALH___	X18848	WNV-E-AZ10-918	250	14aa	mRNA_30cpc_Th	1
-----QSVIALGSQEGALH___	X50146	WNV-E-AZ10-918	250	14aaA5	mRNA_30cpc_Th	1
-----QSVIALGSQEGALH___	X18848	WNV-E-ArD76104	246	14aa	mRNA_30cpc_Th	1
-----QSVIALGSQEGALH___	X50146	WNV-E-ArD76104	246	14aaA5	mRNA_30cpc_Th	1
-----QSVIALGSQEGALH___	X18848	WNV-E-H-442	250	14aa	mRNA_30cpc_Th	1
-----QSVIALGSQEGALH___	X50146	WNV-E-H-442	250	14aaA5	mRNA_30cpc_Th	1
-----QSVIALGSQEGALH___	X18848	JEV-E-BN19	250	14aa	mRNA_3cpc_Th	3
-----QSVIALGSQEGALH___	X18848	JEV-E-KE-093	250	14aa	mRNA_3cpc_Th	3
-----QSVIALGSQEGALH___	X18848	JEV-E-SA14-5-3	250	14aa	mRNA_3cpc_Th	3
-----QSVIALGSQEGALH___	X18848	JEV-E-ThCMAR4492	250	14aa	mRNA_3cpc_Th	3
-----QSVIALGSQEGALH___	X18848	WNV-E-AZ10-918	250	14aa	mRNA_3cpc_Th	3
-----QSVIALGSQEGALH___	X18848	WNV-E-ArD76104	246	14aa	mRNA_3cpc_Th	3
-----QSVIALGSQEGALH___	X18848	WNV-E-H-442	250	14aa	mRNA_3cpc_Th	3
-----QSVIALGSQEGALH___	X50146	JEV-E-BN19	250	14aaA5	mRNA_30cpc_Ctx	1
-----QSVIALGSQEGALH___	X50146	JEV-E-KE-093	250	14aaA5	mRNA_30cpc_Ctx	1
-----QSVIALGSQEGALH___	X50146	JEV-E-SA14-5-3	250	14aaA5	mRNA_30cpc_Ctx	1
-----QSVIALGSQEGALH___	X50146	JEV-E-ThCMAR4492	250	14aaA5	mRNA_30cpc_Ctx	1
-----QSVIALGSQEGALH___	X50146	WNV-E-AZ10-918	250	14aaA5	mRNA_30cpc_Ctx	1
-----QSVIALGSQEGALH___	X50146	WNV-E-ArD76104	246	14aaA5	mRNA_30cpc_Ctx	1
-----QSVIALGSQEGALH___	X50146	WNV-E-H-442	250	14aaA5	mRNA_30cpc_Ctx	1
-----QSVIALGSQEGALH___	X18848	JEV-E-BN19	250	14aa	mRNA_3cpc_Ctx	2
-----QSVIALGSQEGALH___	X18848	JEV-E-KE-093	250	14aa	mRNA_3cpc_Ctx	2
-----QSVIALGSQEGALH___	X18848	JEV-E-SA14-5-3	250	14aa	mRNA_3cpc_Ctx	2
-----QSVIALGSQEGALH___	X18848	JEV-E-ThCMAR4492	250	14aa	mRNA_3cpc_Ctx	2
-----QSVIALGSQEGALH___	X18848	WNV-E-AZ10-918	250	14aa	mRNA_3cpc_Ctx	2
-----QSVIALGSQEGALH___	X18848	WNV-E-ArD76104	246	14aa	mRNA_3cpc_Ctx	2
-----QSVIALGSQEGALH___	X18848	WNV-E-H-442	250	14aa	mRNA_3cpc_Ctx	2
-----SLVDAGAVGPQGFV___	X12345	HSV-2-pUS7	34	14aa	mRNA_30cpc_Ctx	1
SLVSDSLVDAGAVG_____	X12330	HSV-2-pUS7	29	14aa	mRNA_30cpc_Th	3
SLVSDSLVDAGAVG_____	X12330	HSV-2-pUS7	29	14aa	mRNA_30cpc_Ctx	1
-----SVVALGSQEGALHQ___	X13673	JEV-E-BN19	251	14aa	mRNA_30cpc_SN	1
-----SVVALGSQEGALHQ___	X13673	JEV-E-KE-093	251	14aa	mRNA_30cpc_SN	1
-----SVVALGSQEGALHQ___	X13673	JEV-E-SA14-5-3	251	14aa	mRNA_30cpc_SN	1
-----SVVALGSQEGALHQ___	X13673	JEV-E-ThCMAR4492	251	14aa	mRNA_30cpc_SN	1
-----SVVALGSQEGALHQ___	X13673	WNV-E-AZ10-918	251	14aa	mRNA_30cpc_SN	1
-----SVVALGSQEGALHQ___	X13673	WNV-E-ArD76104	247	14aa	mRNA_30cpc_SN	1
-----SVVALGSQEGALHQ___	X13673	WNV-E-H-442	251	14aa	mRNA_30cpc_SN	1
-----SVVALGSQEGALHQ___	X13673	JEV-E-BN19	251	14aa	mRNA_30cpc_Ctx	1
-----SVVALGSQEGALHQ___	X13673	JEV-E-KE-093	251	14aa	mRNA_30cpc_Ctx	1
-----SVVALGSQEGALHQ___	X13673	JEV-E-SA14-5-3	251	14aa	mRNA_30cpc_Ctx	1
-----SVVALGSQEGALHQ___	X13673	JEV-E-ThCMAR4492	251	14aa	mRNA_30cpc_Ctx	1
-----SVVALGSQEGALHQ___	X13673	WNV-E-AZ10-918	251	14aa	mRNA_30cpc_Ctx	1
-----SVVALGSQEGALHQ___	X13673	WNV-E-ArD76104	247	14aa	mRNA_30cpc_Ctx	1
-----SVVALGSQEGALHQ___	X13673	WNV-E-H-442	251	14aa	mRNA_30cpc_Ctx	1
-----VDAGAVGPQGFVEE___	X68185	HSV-2-pUS7	36	14aa	mRNA_30cpc_SN	1
-----VDAGAVGPQGFVEE___	X68185	HSV-2-pUS7	36	14aa	mRNA_30cpc_Th	1

alignment	LUThrs	GeneName	start	structure	Group	Score
_____VDAGAVGPQGFVEE___	X68185	HSV-2-pUS7	36	14aa	mRNA_3cpc_Th	1
_____VDAGAVGPQGFVEE___	X68185	HSV-2-pUS7	36	14aa	mRNA_30cpc_Ctx	1
VSLVSDSLVDAGAVGPQGFVEE___	X66431	HSV-2-pUS7	28	22aa	mRNA_30cpc_SN	1
VSLVSDSLVDAGAVGPQGFVEE___	X66431	HSV-2-pUS7	28	22aa	mRNA_30cpc_Ctx	1
___VSNSFVDAGALGPDGVVEEDLL	X66263	HSV-1-pUS7	31	22aa	mRNA_30cpc_SN	1
___VSNSFVDAGALGPDGVVEEDLL	X66263	HSV-1-pUS7	31	22aa	mRNA_30cpc_Th	2
___VSNSFVDAGALGPDGVVEEDLL	X66263	HSV-1-pUS7	31	22aa	mRNA_30cpc_Ctx	1

Peptide ISALRSPYPASPGL from HSV-1-pUL36 with cluster number 5061

Peptide ISALRSPYPASPGL from HSV-1-pUL36 with cluster number 5061



cluster_id	main_sequence	sum	mRNA_30cpc_Ctx	mRNA_30cpc_Th	mRNA_30cpc_SN	mRNA_3cpc_Th	mRNA_3cpc_Ctx	mRNA_3cpc_SN
5061	ISALRSPYPASPGL	60	10	14	12	18	2	1

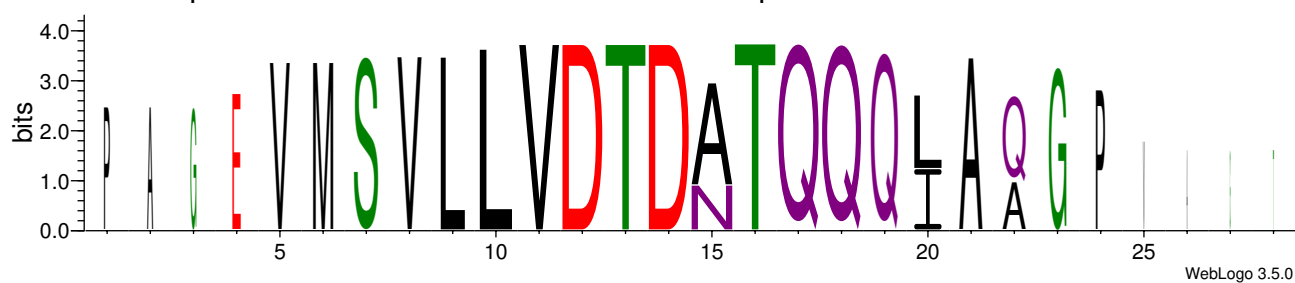
cluster_id	sequence	alignment	sum	mRNA_30cpc_Ctx	mRNA_30cpc_Th	mRNA_30cpc_SN
5061	ISALRSPYPASPGL	ISALRSPYPASPGL_	9	3	2	3
5061	TADSPLTASPPATA	_TADSPLTASPPATA_	7	2	1	3
5061	VPADPPTAFNKDKL	____VPADPPTAFNKDKL_	5	0	0	0
5061	TPVPANPPAEFSAT	____TPVPANPPAEFSAT_	4	0	1	1
5061	PYPASPGLLELCVI	____PYPASPGLLELCVI_	4	1	1	1
5061	PASPGGDSGYEGPY	____PASPGGDSGYEGPY_	4	1	1	1
5061	LRSPYPASPGLELCVIFFFER	_LRSPYPASPGLELCVIFFFER_	4	0	2	1
5061	LVISMARDSPPAEII	____LVISMARDSPPAEII_	3	1	1	0
5061	TPVPADPPTTFNQ	____TPVPADPPTTFNQ_	2	1	0	1
5061	SPPATASVESSPLP	____SPPATASVESSPLP_	2	1	1	0
5061	PAGPPLLFLLEAGA	____PAGPPLLFLLEAGA_	2	0	0	0
5061	VNVSPPLTFSTLGA	____VNVSPPLTFSTLGA_	1	0	0	0
5061	TEPASPTTPKPTS	____TEPASPTTPKPTS_	1	0	1	0
5061	SPPAEIIVVPADKT	____SPPAEIIVVPADKT_	1	0	0	0
5061	RRPASPGGDSGYEG	____RRPASPGGDSGYEG_	1	0	1	0
5061	RPASPGGDSGYEGP	____RPASPGGDSGYEGP_	1	0	0	1
5061	RDSPPAEIIIVVPAD	____RDSPPAEIIIVVPAD_	1	0	0	0
5061	NVSPPLTFSTLGA	____NVSPPLTFSTLGA_	1	0	0	0
5061	NTPVPADPPTTFNQ	____NTPVPADPPTTFNQ_	1	0	1	0
5061	LSRGTPAGPPLLFL	_LSRGTPAGPPLLFL_	1	0	0	0
5061	LIKNTVPADPPTT	_LIKNTVPADPPTT_	1	0	0	0
5061	ILIKNTVPADPPTTFNQSKLN	ILIKNTVPADPPTTFNQSKLN_	1	0	0	0
5061	EPASPPTTPKPTST	____EPASPPTTPKPTST_	1	0	0	0
5061	ASPGGDSGYEGPYA	____ASPGGDSGYEGPYA_	1	0	1	0
5061	ADPPTTFNQSKLNS	____ADPPTTFNQSKLNS_	1	0	0	0

alignment	LUThrs	GeneName	start	structure	Group	Score
_____ADPPTTFNQSKLNS__	X42948	AAV8-VP1	658	14aa	mRNA_3cpc_Th	1
_____ASPGGDSGYEGPYA__	X40692	PRV-Becker-gE	505	14aa	mRNA_30cpc_Th	1
_____ASPGGDSGYEGPYA__	X40692	PRV-TJ-gE	507	14aa	mRNA_30cpc_Th	1
_____EPASPPTTPKPTST____	X37864	HSV-1-pUL44	80	14aa	mRNA_3cpc_Th	1
ILIKNTPVPADPPTTFNQSKLN__	X15729	AAV8-VP1	649	22aa	mRNA_3cpc_Th	1
ILIKNTPVPADPPTTFNQSKLN__	X15729	AAV9-VP1	647	22aa	mRNA_3cpc_Th	1
ISALRSPYPASPGL_____	X14871	HSV-1-pUL36	535	14aa	mRNA_30cpc_SN	3
ISALRSPYPASPGL_____	X14871	HSV-1-pUL36	535	14aa	mRNA_30cpc_Th	2
ISALRSPYPASPGL_____	X14871	HSV-1-pUL36	535	14aa	mRNA_3cpc_Th	1
ISALRSPYPASPGL_____	X14871	HSV-1-pUL36	535	14aa	mRNA_30cpc_Ctx	3
_LIKNTVPADPPTT_____	X29499	AAV8-VP1	650	14aa	mRNA_3cpc_Th	1
_LIKNTVPADPPTT_____	X29499	AAV9-VP1	648	14aa	mRNA_3cpc_Th	1
__LRSPYPASPGLELCLVIFFFER	X30490	HSV-1-pUL36	538	22aa	mRNA_30cpc_SN	1
__LRSPYPASPGLELCLVIFFFER	X30490	HSV-1-pUL36	538	22aa	mRNA_30cpc_Th	2
__LRSPYPASPGLELCLVIFFFER	X30490	HSV-1-pUL36	538	22aa	mRNA_3cpc_Th	1
__LSRGTPAGPPLLFL_____	X29286	NT4	26	14aa	mRNA_3cpc_Th	1
__LVISMRDSPAIEI_____	X32814	HSV-2-pUL22	274	14aa	mRNA_30cpc_Th	1
__LVISMRDSPAIEI_____	X85072	HSV-2-pUL22	274	14aaG4S	mRNA_3cpc_Th	1
__LVISMRDSPAIEI_____	X32814	HSV-2-pUL22	274	14aa	mRNA_30cpc_Ctx	1
_____NTPVPADPPTTFNQ____	X488	AAV8-VP1	653	14aa	mRNA_30cpc_Th	1
_____NTPVPADPPTTFNQ____	X488	AAV9-VP1	651	14aa	mRNA_30cpc_Th	1
_____NVSPPLTFSTLGAI__	X2539	CAV-2-F-SH01	47	14aa	mRNA_30cpc_SN_4wks	1
_____NVSPPLTFSTLGAI__	X2539	CAV-2-F-Toronto-A26-61	47	14aa	mRNA_30cpc_SN_4wks	1
_____PAGPPLLFLLEAGA__	X51358	NT4	31	14aaA5	mRNA_3cpc_Th	2
_____PASPGGDSGYEGPY__	X23359	PRV-Becker-gE	504	14aa	mRNA_30cpc_SN	1
_____PASPGGDSGYEGPY__	X23359	PRV-TJ-gE	506	14aa	mRNA_30cpc_SN	1
_____PASPGGDSGYEGPY__	X23359	PRV-Becker-gE	504	14aa	mRNA_30cpc_Th	1
_____PASPGGDSGYEGPY__	X23359	PRV-TJ-gE	506	14aa	mRNA_30cpc_Th	1
_____PASPGGDSGYEGPY__	X23359	PRV-Becker-gE	504	14aa	mRNA_3cpc_Th	1
_____PASPGGDSGYEGPY__	X23359	PRV-TJ-gE	506	14aa	mRNA_3cpc_Th	1
_____PASPGGDSGYEGPY__	X23359	PRV-Becker-gE	504	14aa	mRNA_30cpc_Ctx	1
_____PASPGGDSGYEGPY__	X23359	PRV-TJ-gE	506	14aa	mRNA_30cpc_Ctx	1
_____PYPASPGLELCLVI____	X82824	HSV-1-pUL36	541	14aaG4S	mRNA_30cpc_SN	1
_____PYPASPGLELCLVI____	X82824	HSV-1-pUL36	541	14aaG4S	mRNA_30cpc_Th	1
_____PYPASPGLELCLVI____	X82824	HSV-1-pUL36	541	14aaG4S	mRNA_3cpc_Th	1
_____PYPASPGLELCLVI____	X82824	HSV-1-pUL36	541	14aaG4S	mRNA_30cpc_Ctx	1
_____RDSPPAEIIVVPAD____	X26653	HSV-2-pUL22	279	14aa	mRNA_30cpc_Th_4wks	1
_____RPASPGGDSGYEGP____	X25900	PRV-Becker-gE	503	14aa	mRNA_30cpc_SN	1
_____RPASPGGDSGYEGP____	X25900	PRV-TJ-gE	505	14aa	mRNA_30cpc_SN	1
_____RRPASPGGDSGYEG____	X26089	PRV-Becker-gE	502	14aa	mRNA_30cpc_Th	1
_____RRPASPGGDSGYEG____	X26089	PRV-TJ-gE	504	14aa	mRNA_30cpc_Th	1
_____SPPAEIIVVPADKT____	X11598	HSV-2-pUL22	281	14aa	mRNA_30cpc_Th_4wks	1
_____SPPATASVESSPLP____	X11595	HSV-2-pUS4	411	14aa	mRNA_30cpc_Th	1
_____SPPATASVESSPLP____	X11595	HSV-2-pUS4	411	14aa	mRNA_30cpc_Ctx	1
_____TADSPLTASPPATA____	X8569	HSV-2-pUS4	492	14aa	mRNA_30cpc_SN	3
_____TADSPLTASPPATA____	X8569	HSV-2-pUS4	492	14aa	mRNA_30cpc_Th	1
_____TADSPLTASPPATA____	X8569	HSV-2-pUS4	492	14aa	mRNA_3cpc_Th	1

alignment	LUThrs	GeneName	start	structure	Group	Score
__TADSPLTASPPATA_____	X8569	HSV-2-pUS4	492	14aa	mRNA_30cpc_Ctx	2
_____TEPASPPPTPKPTS_____	X8286	HSV-1-pUL44	79	14aa	mRNA_30cpc_Th	1
_____TPVPADPPTTFNQS_____	X7445	AAV8-VP1	654	14aa	mRNA_30cpc_SN	1
_____TPVPADPPTTFNQS_____	X7445	AAV9-VP1	652	14aa	mRNA_30cpc_SN	1
_____TPVPADPPTTFNQS_____	X7445	AAV8-VP1	654	14aa	mRNA_30cpc_Ctx	1
_____TPVPADPPTTFNQS_____	X7445	AAV9-VP1	652	14aa	mRNA_30cpc_Ctx	1
_____TPVPANPPAEFSAT_____	X78469	AAV1-VP1	652	14aaG4S	mRNA_30cpc_SN	1
_____TPVPANPPAEFSAT_____	X78469	AAV6-VP1	652	14aaG4S	mRNA_30cpc_SN	1
_____TPVPANPPAEFSAT_____	X78469	AAV1-VP1	652	14aaG4S	mRNA_30cpc_Th	1
_____TPVPANPPAEFSAT_____	X78469	AAV6-VP1	652	14aaG4S	mRNA_30cpc_Th	1
_____TPVPANPPAEFSAT_____	X7444	AAV1-VP1	652	14aa	mRNA_3cpc_Th	2
_____TPVPANPPAEFSAT_____	X7444	AAV6-VP1	652	14aa	mRNA_3cpc_Th	2
_____VNVSPPLTFSTLGA_____	X89495	CAV-2-F-SH01	46	14aaG4S	mRNA_3cpc_Th	1
_____VNVSPPLTFSTLGA_____	X89495	CAV-2-F-Toronto-A26-61	46	14aaG4S	mRNA_3cpc_Th	1
_____VPADPPTAFNKDKL_____	X67282	AAV8-VP1	656	14aa	mRNA_3cpc_SN	1
_____VPADPPTAFNKDKL_____	X67282	AAV9-VP1	654	14aa	mRNA_3cpc_SN	1
_____VPADPPTAFNKDKL_____	X67282	AAV8-VP1	656	14aa	mRNA_3cpc_Th	2
_____VPADPPTAFNKDKL_____	X67282	AAV9-VP1	654	14aa	mRNA_3cpc_Th	2
_____VPADPPTAFNKDKL_____	X67282	AAV8-VP1	656	14aa	mRNA_3cpc_Ctx	2
_____VPADPPTAFNKDKL_____	X67282	AAV9-VP1	654	14aa	mRNA_3cpc_Ctx	2

Peptide VMSVLLVDTDATQQ from HSV-1-pUL22 with cluster number 6511

Peptide VMSVLLVDTDATQQ from HSV-1-pUL22 with cluster number 6511



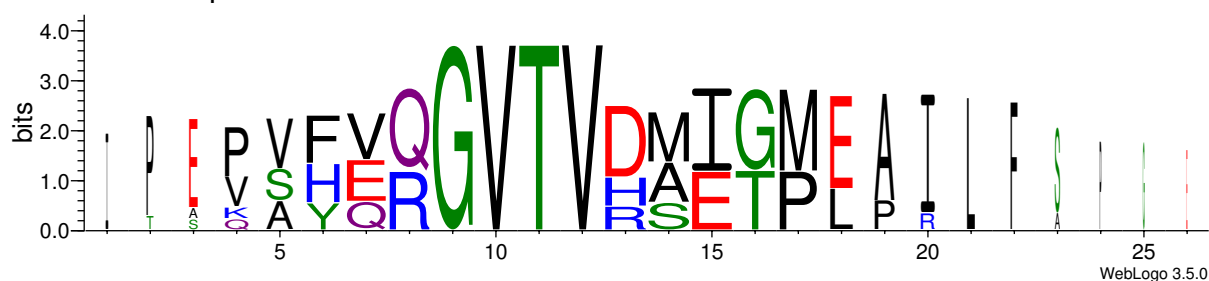
cluster_id	main_sequence	sum	mRNA_30cpc_Ctx	mRNA_30cpc_Th	mRNA_30cpc_SN	mRNA_3cpc_Th	mRNA_3cpc_Ctx	mRNA_3cpc_SN
6511	VMSVLLVDTDATQQ	49	14	14	11	7	0	0

cluster_id	sequence	alignment	sum	mRNA_30cpc_Ctx	mRNA_30cpc_Th	mRNA_30cpc_SN
6511	VMSVLLVDTDATQQ	___VMSVLLVDTDATQQ_____	14	4	4	4
6511	LVDTDATQQQLAAG	_____LVDTDATQQQLAAG_____	8	2	2	2
6511	VDTDATQQQLAAGP	_____VDTDATQQQLAAGP_____	7	2	2	2
6511	PAGEVMSVLLVDTDNTQQQIAA	PAGEVMSVLLVDTDNTQQQIAA_____	6	2	2	1
6511	SVLLVDTDNTQQQI	_____SVLLVDTDNTQQQI_____	5	2	2	1
6511	VDTDNTQQQIAAGP	_____VDTDNTQQQIAAGP_____	2	1	0	1
6511	LVDTDNTQQQIAAG	_____LVDTDNTQQQIAAG_____	2	0	1	0
6511	EVMSVLLVDTDATQ	___EVMSVLLVDTDATQ_____	2	0	1	0
6511	PAGEVMSVLLVDTDATQQQLAQ	PAGEVMSVLLVDTDATQQQLAQ_____	1	1	0	0
6511	EVMSVLLVDTDATQQQLAAGPV	___EVMSVLLVDTDATQQQLAAGPV___	1	0	0	0
6511	ATQQQLAAGPVGAT	_____ATQQQLAAGPVGAT_____	1	0	0	0

alignment	LUTnrs	GeneName	start	structure	Group	Score
_____ATQQQLAQGPVAGT	X40235	HSV-2-pUL22	753	14aa	mRNA_3cpc_Th	1
___EVMSVLLVDTDATQ_____	X86719	HSV-1-pUL22	742	14aaG4S	mRNA_30cpc_Th	1
___EVMSVLLVDTDATQ_____	X86719	HSV-2-pUL22	742	14aaG4S	mRNA_30cpc_Th	1
___EVMSVLLVDTDATQ_____	X86719	HSV-1-pUL22	742	14aaG4S	mRNA_30cpc_SN_4wks	1
___EVMSVLLVDTDATQ_____	X86719	HSV-2-pUL22	742	14aaG4S	mRNA_30cpc_SN_4wks	1
___EVMSVLLVDTDATQQQLAQGPV___	X39265	HSV-2-pUL22	742	22aa	mRNA_30cpc_Th_4wks	1
_____LVDTDATQQQLAQG_____	X53822	HSV-2-pUL22	748	14aaA5	mRNA_30cpc_SN	2
_____LVDTDATQQQLAQG_____	X53822	HSV-2-pUL22	748	14aaA5	mRNA_30cpc_Th	2
_____LVDTDATQQQLAQG_____	X53822	HSV-2-pUL22	748	14aaA5	mRNA_3cpc_Th	1
_____LVDTDATQQQLAQG_____	X53822	HSV-2-pUL22	748	14aaA5	mRNA_30cpc_Ctx	2
_____LVDTDATQQQLAQG_____	X53822	HSV-2-pUL22	748	14aaA5	mRNA_30cpc_SN_4wks	1
_____LVDTDNTQQQIAAG_____	X32960	HSV-1-pUL22	748	14aa	mRNA_30cpc_Th	1
_____LVDTDNTQQQIAAG_____	X32960	HSV-1-pUL22	748	14aa	mRNA_3cpc_Th	1
PAGEVMSVLLVDTDATQQQLAQ_____	X23669	HSV-2-pUL22	739	22aa	mRNA_30cpc_Ctx	1
PAGEVMSVLLVDTDNTQQQIAA_____	X23667	HSV-1-pUL22	739	22aa	mRNA_30cpc_SN	1
PAGEVMSVLLVDTDNTQQQIAA_____	X23667	HSV-2-pUL22	739	22aa	mRNA_30cpc_SN	1
PAGEVMSVLLVDTDNTQQQIAA_____	X23667	HSV-1-pUL22	739	22aa	mRNA_30cpc_Th	2
PAGEVMSVLLVDTDNTQQQIAA_____	X23667	HSV-2-pUL22	739	22aa	mRNA_30cpc_Th	2
PAGEVMSVLLVDTDNTQQQIAA_____	X23667	HSV-1-pUL22	739	22aa	mRNA_3cpc_Th	1
PAGEVMSVLLVDTDNTQQQIAA_____	X23667	HSV-2-pUL22	739	22aa	mRNA_3cpc_Th	1
PAGEVMSVLLVDTDNTQQQIAA_____	X23667	HSV-1-pUL22	739	22aa	mRNA_30cpc_Ctx	2
PAGEVMSVLLVDTDNTQQQIAA_____	X23667	HSV-2-pUL22	739	22aa	mRNA_30cpc_Ctx	2
_____SVLLVDTDNTQQQI_____	X13577	HSV-1-pUL22	745	14aa	mRNA_30cpc_SN	1
_____SVLLVDTDNTQQQI_____	X13577	HSV-2-pUL22	745	14aa	mRNA_30cpc_SN	1
_____SVLLVDTDNTQQQI_____	X13577	HSV-1-pUL22	745	14aa	mRNA_30cpc_Th	2
_____SVLLVDTDNTQQQI_____	X13577	HSV-2-pUL22	745	14aa	mRNA_30cpc_Th	2
_____SVLLVDTDNTQQQI_____	X13577	HSV-1-pUL22	745	14aa	mRNA_30cpc_Ctx	2
_____SVLLVDTDNTQQQI_____	X13577	HSV-2-pUL22	745	14aa	mRNA_30cpc_Ctx	2
_____VDTDATQQQLAQGP_____	X68061	HSV-2-pUL22	749	14aa	mRNA_30cpc_SN	2
_____VDTDATQQQLAQGP_____	X68061	HSV-2-pUL22	749	14aa	mRNA_30cpc_Th	2
_____VDTDATQQQLAQGP_____	X68061	HSV-2-pUL22	749	14aa	mRNA_3cpc_Th	1
_____VDTDATQQQLAQGP_____	X68061	HSV-2-pUL22	749	14aa	mRNA_30cpc_Ctx	2
_____VDTDNTQQQIAAGP_____	X68060	HSV-1-pUL22	749	14aa	mRNA_30cpc_SN	1
_____VDTDNTQQQIAAGP_____	X68060	HSV-1-pUL22	749	14aa	mRNA_30cpc_Ctx	1
___VMSVLLVDTDATQQ_____	X66790	HSV-1-pUL22	743	14aa	mRNA_30cpc_SN	4
___VMSVLLVDTDATQQ_____	X66790	HSV-2-pUL22	743	14aa	mRNA_30cpc_SN	4
___VMSVLLVDTDATQQ_____	X66790	HSV-1-pUL22	743	14aa	mRNA_30cpc_Th	4
___VMSVLLVDTDATQQ_____	X66790	HSV-2-pUL22	743	14aa	mRNA_30cpc_Th	4
___VMSVLLVDTDATQQ_____	X66790	HSV-1-pUL22	743	14aa	mRNA_3cpc_Th	2
___VMSVLLVDTDATQQ_____	X66790	HSV-2-pUL22	743	14aa	mRNA_3cpc_Th	2
___VMSVLLVDTDATQQ_____	X66790	HSV-1-pUL22	743	14aa	mRNA_30cpc_Ctx	4
___VMSVLLVDTDATQQ_____	X66790	HSV-2-pUL22	743	14aa	mRNA_30cpc_Ctx	4

Peptide PVFEQGVTVDAIGM from BV-G with cluster number 6221

Peptide PVFEQGVTVDAIGM from BV-G with cluster number 6221



cluster_id	main_sequence	sum	mRNA_30cpc_Ctx	mRNA_30cpc_Th	mRNA_30cpc_SN	mRNA_3cpc_Th	mRNA_3cpc_Ctx	mRNA_3cpc_SN
6221	PVFEQGVTVDAIGM	47	13	13	7	7	1	0

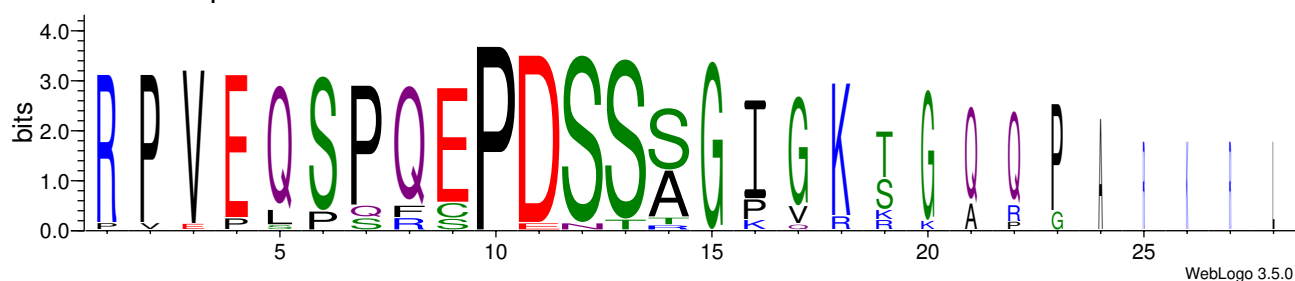
cluster_id	sequence	alignment	sum	mRNA_30cpc_Ctx	mRNA_30cpc_Th	mRNA_30cpc_SN
6221	PVFEQGVTVDAIGM	___PVFEQGVTVDAIGM_____	12	2	1	0
6221	PEVSHVRGVTVRMETPEAILFS	_PEVSHVRGVTVRMETPEAILFS__	4	1	2	1
6221	HVRGVTVMETPEA	____HVRGVTVMETPEA_____	4	1	2	1
6221	VRGVTVMETPEAI	____VRGVTVMETPEAI_____	3	1	2	0
6221	QAYQQGVTVDSIGM	___QAYQQGVTVDSIGM_____	3	1	1	1
6221	VRGVTVRMETPEAI	____VRGVTVRMETPEAI_____	2	1	1	0
6221	QQGVTVDSIGMLPR	____QQGVTVDSIGMLPR_____	2	1	0	1
6221	KAYQQGVTVDSIGM	___KAYQQGVTVDSIGM_____	2	1	0	1
6221	IPEVSHVRGVTVMETPEAILF	IPEVSHVRGVTVMETPEAILF_____	2	1	1	0
6221	FEQGVTVDAIGMLP	____FEQGVTVDAIGMLP_____	2	1	1	0
6221	AYQQGVTVDSIGML	____AYQQGVTVDSIGML_____	2	1	1	0
6221	YQQGVTVDSIGMLP	____YQQGVTVDSIGMLP_____	1	0	0	1
6221	VHMETPEAILFAPG	____VHMETPEAILFAPG_____	1	1	0	0
6221	VFEQGVTVDAIGML	____VFEQGVTVDAIGML_____	1	0	0	0
6221	TSKAYQQGVTVDSI	_TSKAYQQGVTVDSI_____	1	0	0	0
6221	SHVRGVTVRMETPEAILFSPGE	____SHVRGVTVRMETPEAILFSPGE	1	0	1	0
6221	RGVTVRMETPEAIL	____RGVTVRMETPEAIL_____	1	0	0	1
6221	IPEVSHVRGVTVM	IPEVSHVRGVTVM_____	1	0	0	0
6221	EVSHVRGVTVRMET	__EVSHVRGVTVRMET_____	1	0	0	0
6221	APVFEQGVTVDAIG	__APVFEQGVTVDAIG_____	1	0	0	0

alignment	LUThrs	GeneName	start	structure	Group	Score
__APVFEQGVTVD AIG_____	X41980	BV-G	230	14aa	mRNA_30cpc_Th_4wks	1
___AYQQGVTVD SIGML_____	X88153	HSV-1-pUS6	232	14aaG4S	mRNA_30cpc_Th	1
___AYQQGVTVD SIGML_____	X88153	HSV-2-pUS6	232	14aaG4S	mRNA_30cpc_Th	1
___AYQQGVTVD SIGML_____	X88153	HSV-1-pUS6	232	14aaG4S	mRNA_30cpc_Ctx	1
___AYQQGVTVD SIGML_____	X88153	HSV-2-pUS6	232	14aaG4S	mRNA_30cpc_Ctx	1
__EVSHVRGVTVRMET_____	X39245	HSV-1-pUS8	215	14aa	mRNA_3cpc_Th	1
__EVSHVRGVTVRMET_____	X39245	HSV-2-pUS8	210	14aa	mRNA_3cpc_Th	1
_____FEQGVTVD AIGMLP_____	X75690	BV-G	233	14aa	mRNA_30cpc_Th	1
_____FEQGVTVD AIGMLP_____	X75690	HSV-1-pUS6	233	14aa	mRNA_30cpc_Th	1
_____FEQGVTVD AIGMLP_____	X75690	HSV-2-pUS6	233	14aa	mRNA_30cpc_Th	1
_____FEQGVTVD AIGMLP_____	X75690	BV-G	233	14aa	mRNA_30cpc_Ctx	1
_____FEQGVTVD AIGMLP_____	X75690	HSV-1-pUS6	233	14aa	mRNA_30cpc_Ctx	1
_____FEQGVTVD AIGMLP_____	X75690	HSV-2-pUS6	233	14aa	mRNA_30cpc_Ctx	1
_____HVRGVTVMHETPEA_____	X18219	HSV-1-pUS8	218	14aa	mRNA_30cpc_SN	1
_____HVRGVTVMHETPEA_____	X18219	HSV-2-pUS8	213	14aa	mRNA_30cpc_SN	1
_____HVRGVTVMHETPEA_____	X18219	HSV-1-pUS8	218	14aa	mRNA_30cpc_Th	2
_____HVRGVTVMHETPEA_____	X18219	HSV-2-pUS8	213	14aa	mRNA_30cpc_Th	2
_____HVRGVTVMHETPEA_____	X18219	HSV-1-pUS8	218	14aa	mRNA_30cpc_Ctx	1
_____HVRGVTVMHETPEA_____	X18219	HSV-2-pUS8	213	14aa	mRNA_30cpc_Ctx	1
IPEVSHVRGVTVMH_____	X80585	HSV-1-pUS8	213	14aaG4S	mRNA_30cpc_SN_4wks	1
IPEVSHVRGVTVMH_____	X80585	HSV-2-pUS8	208	14aaG4S	mRNA_30cpc_SN_4wks	1
IPEVSHVRGVTVMHETPEAILF_____	X15458	HSV-1-pUS8	213	22aa	mRNA_30cpc_Th	1
IPEVSHVRGVTVMHETPEAILF_____	X15458	HSV-2-pUS8	208	22aa	mRNA_30cpc_Th	1
IPEVSHVRGVTVMHETPEAILF_____	X15458	HSV-1-pUS8	213	22aa	mRNA_30cpc_Ctx	1
IPEVSHVRGVTVMHETPEAILF_____	X15458	HSV-2-pUS8	208	22aa	mRNA_30cpc_Ctx	1
___KAYQQGVTVD SIGM_____	X4836	HSV-1-pUS6	231	14aa	mRNA_30cpc_SN	1
___KAYQQGVTVD SIGM_____	X4836	HSV-2-pUS6	231	14aa	mRNA_30cpc_SN	1
___KAYQQGVTVD SIGM_____	X4836	HSV-1-pUS6	231	14aa	mRNA_30cpc_Ctx	1
___KAYQQGVTVD SIGM_____	X4836	HSV-2-pUS6	231	14aa	mRNA_30cpc_Ctx	1
_PEVSHVRGVTVRMETPEAILFS_____	X23254	HSV-1-pUS8	214	22aa	mRNA_30cpc_SN	1
_PEVSHVRGVTVRMETPEAILFS_____	X23254	HSV-2-pUS8	209	22aa	mRNA_30cpc_SN	1
_PEVSHVRGVTVRMETPEAILFS_____	X23254	HSV-1-pUS8	214	22aa	mRNA_30cpc_Th	2
_PEVSHVRGVTVRMETPEAILFS_____	X23254	HSV-2-pUS8	209	22aa	mRNA_30cpc_Th	2
_PEVSHVRGVTVRMETPEAILFS_____	X23254	HSV-1-pUS8	214	22aa	mRNA_30cpc_Ctx	1
_PEVSHVRGVTVRMETPEAILFS_____	X23254	HSV-2-pUS8	209	22aa	mRNA_30cpc_Ctx	1
___PVFEQGVTVD AIGM_____	X24363	BV-G	231	14aa	mRNA_30cpc_Th	1
___PVFEQGVTVD AIGM_____	X24363	BV-G	231	14aa	mRNA_3cpc_Th	5
___PVFEQGVTVD AIGM_____	X24363	BV-G	231	14aa	mRNA_30cpc_Ctx	2
___PVFEQGVTVD AIGM_____	X24363	BV-G	231	14aa	mRNA_3cpc_Ctx	1
___PVFEQGVTVD AIGM_____	X24363	BV-G	231	14aa	mRNA_30cpc_SN_4wks	2
___PVFEQGVTVD AIGM_____	X24363	BV-G	231	14aa	mRNA_3cpc_Th_4wks	1
___QAYQQGVTVD SIGM_____	X19977	HSV-1-pUS6	231	14aa	mRNA_30cpc_SN	1
___QAYQQGVTVD SIGM_____	X19977	HSV-2-pUS6	231	14aa	mRNA_30cpc_SN	1
___QAYQQGVTVD SIGM_____	X19977	HSV-1-pUS6	231	14aa	mRNA_30cpc_Th	1
___QAYQQGVTVD SIGM_____	X19977	HSV-2-pUS6	231	14aa	mRNA_30cpc_Th	1
___QAYQQGVTVD SIGM_____	X19977	HSV-1-pUS6	231	14aa	mRNA_30cpc_Ctx	1
___QAYQQGVTVD SIGM_____	X19977	HSV-2-pUS6	231	14aa	mRNA_30cpc_Ctx	1

alignment	LUThrs	GeneName	start	structure	Group	Score
_____QQGVTVD SIGMLPR_____	X19167	HSV-1-pUS6	234	14aa	mRNA_30cpc_SN	1
_____QQGVTVD SIGMLPR_____	X19167	HSV-2-pUS6	234	14aa	mRNA_30cpc_SN	1
_____QQGVTVD SIGMLPR_____	X19167	HSV-1-pUS6	234	14aa	mRNA_30cpc_Ctx	1
_____QQGVTVD SIGMLPR_____	X19167	HSV-2-pUS6	234	14aa	mRNA_30cpc_Ctx	1
_____RGVTVR METPEAIL_____	X27586	HSV-1-pUS8	220	14aa	mRNA_30cpc_SN	1
_____RGVTVR METPEAIL_____	X27586	HSV-2-pUS8	215	14aa	mRNA_30cpc_SN	1
____SHVRGVTVR METPEAILFSPGE	X11316	HSV-1-pUS8	217	22aa	mRNA_30cpc_Th	1
____SHVRGVTVR METPEAILFSPGE	X11316	HSV-2-pUS8	212	22aa	mRNA_30cpc_Th	1
_TSKAYQQGVTVD SI_____	X78137	HSV-1-pUS6	230	14aaG4S	mRNA_3cpc_Th	1
_TSKAYQQGVTVD SI_____	X78137	HSV-2-pUS6	229	14aaG4S	mRNA_3cpc_Th	1
____VFEQGVTVDA IGML_____	X90620	BV-G	232	14aaG4S	mRNA_30cpc_SN_4wks	1
_____VH METPEAILFAPG_____	X66874	HSV-1-pUS8	224	14aa	mRNA_30cpc_Ctx	1
_____VH METPEAILFAPG_____	X66874	HSV-2-pUS8	219	14aa	mRNA_30cpc_Ctx	1
_____VRGVTVH METPEAI_____	X67595	HSV-2-pUS8	214	14aa	mRNA_30cpc_Th	1
_____VRGVTVH METPEAI_____	X89976	HSV-2-pUS8	214	14aaG4S	mRNA_30cpc_Th	1
_____VRGVTVH METPEAI_____	X89976	HSV-2-pUS8	214	14aaG4S	mRNA_30cpc_Ctx	1
_____VRGVTVR METPEAI_____	X67596	HSV-1-pUS8	219	14aa	mRNA_30cpc_Th	1
_____VRGVTVR METPEAI_____	X67596	HSV-1-pUS8	219	14aa	mRNA_30cpc_Ctx	1
_____YQQGVTVD SIGMLP_____	X70812	BV-G	233	14aa	mRNA_30cpc_SN	1
_____YQQGVTVD SIGMLP_____	X70812	HSV-1-pUS6	233	14aa	mRNA_30cpc_SN	1
_____YQQGVTVD SIGMLP_____	X70812	HSV-2-pUS6	233	14aa	mRNA_30cpc_SN	1

Peptide RPVEQSPQEPDSSS from AAV1-VP1 with cluster number 5420

Peptide RPVEQSPQEPDSSS from AAV1-VP1 with cluster number 5420



cluster_id	main_sequence	sum	mRNA_30cpc_Ctx	mRNA_30cpc_Th	mRNA_30cpc_SN	mRNA_3cpc_Th	mRNA_3cpc_Ctx	mRNA_3cpc_SN
5420	RPVEQSPQEPDSSS	47	16	10	6	11	2	1

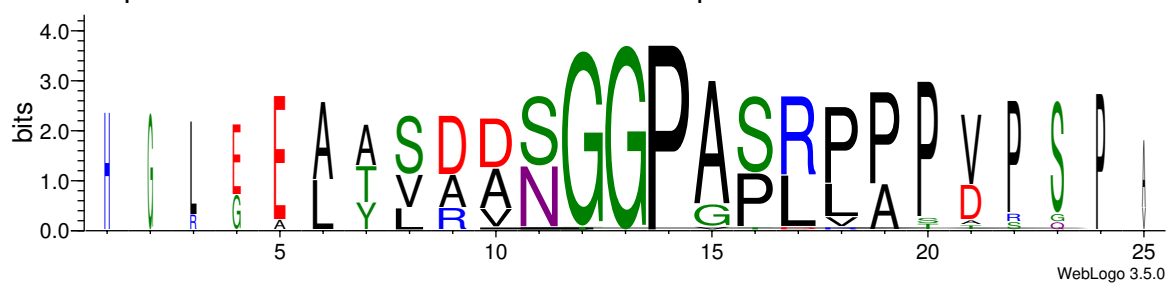
cluster_id	sequence	alignment	sum	mRNA_30cpc_Ctx	mRNA_30cpc_Th	mRNA_30cpc_SN
5420	RPVEQSPQEPDSSS	RPVEQSPQEPDSSS_____	12	3	3	1
5420	RPVEQSPQEPDSSA	RPVEQSPQEPDSSA_____	9	2	2	2
5420	SPQEPDSSAGIGKS	____SPQEPDSSAGIGKS_____	4	1	1	1
5420	PDSSSGIGKTGQQP	_____PDSSSGIGKTGQQP_____	4	3	0	0
5420	VEQSPQEPDSSAGI	__VEQSPQEPDSSAGI_____	3	1	1	0
5420	DSSSGIGKTGQQPA	_____DSSSGIGKTGQQPA_____	3	0	0	0
5420	QRSPDSTGIGKKGQQPARKRL	_____QRSPDSTGIGKKGQQPARKRL_____	2	1	1	0
5420	PENSRGKGRRGQRG	_____PENSRGKGRRGQRG_____	2	1	0	1
5420	PDSSAGIGKSGAQP	_____PDSSAGIGKSGAQP_____	2	0	1	1
5420	LPSFCPDSTSGPVK	____LPSFCPDSTSGPVK_____	2	1	1	0
5420	PVEPSPQRSPTSST	PVEPSPQRSPTSST_____	1	1	0	0
5420	PQEPDSSSGIGKTG	_____PQEPDSSSGIGKTG_____	1	1	0	0
5420	PLPSFCPDSSSGPQ	____PLPSFCPDSSSGPQ_____	1	1	0	0
5420	CPDSTSGPVKTKAP	_____CPDSTSGPVKTKAP_____	1	0	0	0

alignment	LUThrs	GeneName	start	structure	Group	Score
-----CPDSTSGPVKTKAP-----	X72701	TMEV-VP1-M20301.1	77	14aa	mRNA_30cpc_Th_4wks	1
-----DSSSGIGKTGQQPA-----	X34248	AAV1-VP1	154	14aa	mRNA_3cpc_Th	3
-----DSSSGIGKTGQQPA-----	X34248	AAV6-VP1	154	14aa	mRNA_3cpc_Th	3
----LPSFCPDSTSGPVK-----	X53091	TMEV-VP-DQ401688.1	73	14aaA5	mRNA_30cpc_Th	1
----LPSFCPDSTSGPVK-----	X53091	TMEV-VP1-M20301.1	73	14aaA5	mRNA_30cpc_Th	1
----LPSFCPDSTSGPVK-----	X53091	TMEV-VP1-U33047.1	73	14aaA5	mRNA_30cpc_Th	1
----LPSFCPDSTSGPVK-----	X53091	TMEV-VP-DQ401688.1	73	14aaA5	mRNA_30cpc_Ctx	1
----LPSFCPDSTSGPVK-----	X53091	TMEV-VP1-M20301.1	73	14aaA5	mRNA_30cpc_Ctx	1
----LPSFCPDSTSGPVK-----	X53091	TMEV-VP1-U33047.1	73	14aaA5	mRNA_30cpc_Ctx	1
-----PDSSAGIGKSGAQP-----	X22908	AAV9-VP1	153	14aa	mRNA_30cpc_SN	1
-----PDSSAGIGKSGAQP-----	X22908	AAV9-VP1	153	14aa	mRNA_30cpc_Th	1
-----PDSSSGIGKTGQQP-----	X22905	AAV1-VP1	153	14aa	mRNA_3cpc_Th	1
-----PDSSSGIGKTGQQP-----	X22905	AAV6-VP1	153	14aa	mRNA_3cpc_Th	1
-----PDSSSGIGKTGQQP-----	X22905	AAV1-VP1	153	14aa	mRNA_30cpc_Ctx	3
-----PDSSSGIGKTGQQP-----	X22905	AAV6-VP1	153	14aa	mRNA_30cpc_Ctx	3
-----PENSRGKGRRGQRG-----	X23066	GDNF	81	14aa	mRNA_30cpc_SN	1
-----PENSRGKGRRGQRG-----	X23066	GDNF	81	14aa	mRNA_30cpc_Ctx	1
___PLPSFCPDSSSGPQ_____	X22651	TMEV-VP-DQ401688.1	72	14aa	mRNA_30cpc_Ctx	1
___PLPSFCPDSSSGPQ_____	X22651	TMEV-VP1-M20301.1	72	14aa	mRNA_30cpc_Ctx	1
___PLPSFCPDSSSGPQ_____	X22651	TMEV-VP1-U33047.1	72	14aa	mRNA_30cpc_Ctx	1
-----PQEPDSSSGIGKTG-----	X21774	AAV1-VP1	150	14aa	mRNA_30cpc_Ctx	1
-----PQEPDSSSGIGKTG-----	X21774	AAV6-VP1	150	14aa	mRNA_30cpc_Ctx	1
-----PQEPDSSSGIGKTG-----	X21774	AAV9-VP1	150	14aa	mRNA_30cpc_Ctx	1
PVEPSPQRSPTSST-----	X24253	AAV8-VP1	145	14aa	mRNA_30cpc_Ctx	1
-----QRSPTSSTGIGKKGQQPARKRL	X19347	AAV8-VP1	151	22aa	mRNA_30cpc_Th	1
-----QRSPTSSTGIGKKGQQPARKRL	X19347	AAV8-VP1	151	22aa	mRNA_30cpc_Ctx	1
RPVEQSPQEPDSSA-----	X25959	AAV1-VP1	144	14aa	mRNA_30cpc_SN	2
RPVEQSPQEPDSSA-----	X25959	AAV6-VP1	144	14aa	mRNA_30cpc_SN	2
RPVEQSPQEPDSSA-----	X25959	AAV9-VP1	144	14aa	mRNA_30cpc_SN	2
RPVEQSPQEPDSSA-----	X25959	AAV1-VP1	144	14aa	mRNA_30cpc_Th	2
RPVEQSPQEPDSSA-----	X25959	AAV6-VP1	144	14aa	mRNA_30cpc_Th	2
RPVEQSPQEPDSSA-----	X25959	AAV9-VP1	144	14aa	mRNA_30cpc_Th	2
RPVEQSPQEPDSSA-----	X25959	AAV1-VP1	144	14aa	mRNA_3cpc_Th	3
RPVEQSPQEPDSSA-----	X25959	AAV6-VP1	144	14aa	mRNA_3cpc_Th	3
RPVEQSPQEPDSSA-----	X25959	AAV9-VP1	144	14aa	mRNA_3cpc_Th	3
RPVEQSPQEPDSSA-----	X25959	AAV1-VP1	144	14aa	mRNA_30cpc_Ctx	2
RPVEQSPQEPDSSA-----	X25959	AAV6-VP1	144	14aa	mRNA_30cpc_Ctx	2
RPVEQSPQEPDSSA-----	X25959	AAV9-VP1	144	14aa	mRNA_30cpc_Ctx	2
RPVEQSPQEPDSSS-----	X25958	AAV1-VP1	144	14aa	mRNA_30cpc_SN	1
RPVEQSPQEPDSSS-----	X25958	AAV6-VP1	144	14aa	mRNA_30cpc_SN	1
RPVEQSPQEPDSSS-----	X25958	AAV9-VP1	144	14aa	mRNA_30cpc_SN	1
RPVEQSPQEPDSSS-----	X25958	AAV1-VP1	144	14aa	mRNA_3cpc_SN	1
RPVEQSPQEPDSSS-----	X25958	AAV6-VP1	144	14aa	mRNA_3cpc_SN	1
RPVEQSPQEPDSSS-----	X25958	AAV9-VP1	144	14aa	mRNA_3cpc_SN	1
RPVEQSPQEPDSSS-----	X25958	AAV1-VP1	144	14aa	mRNA_30cpc_Th	3
RPVEQSPQEPDSSS-----	X25958	AAV6-VP1	144	14aa	mRNA_30cpc_Th	3
RPVEQSPQEPDSSS-----	X25958	AAV9-VP1	144	14aa	mRNA_30cpc_Th	3

alignment	LUThrs	GeneName	start	structure	Group	Score
RPVEQSPQEPDSSS_____	X25958	AAV1-VP1	144	14aa	mRNA_3cpc_Th	3
RPVEQSPQEPDSSS_____	X25958	AAV6-VP1	144	14aa	mRNA_3cpc_Th	3
RPVEQSPQEPDSSS_____	X25958	AAV9-VP1	144	14aa	mRNA_3cpc_Th	3
RPVEQSPQEPDSSS_____	X25958	AAV1-VP1	144	14aa	mRNA_30cpc_Ctx	3
RPVEQSPQEPDSSS_____	X25958	AAV6-VP1	144	14aa	mRNA_30cpc_Ctx	3
RPVEQSPQEPDSSS_____	X25958	AAV9-VP1	144	14aa	mRNA_30cpc_Ctx	3
RPVEQSPQEPDSSS_____	X25958	AAV1-VP1	144	14aa	mRNA_3cpc_Ctx	1
RPVEQSPQEPDSSS_____	X25958	AAV6-VP1	144	14aa	mRNA_3cpc_Ctx	1
RPVEQSPQEPDSSS_____	X25958	AAV9-VP1	144	14aa	mRNA_3cpc_Ctx	1
____SPQEPDSSAGIGKS_____	X11573	AAV1-VP1	149	14aa	mRNA_30cpc_SN	1
____SPQEPDSSAGIGKS_____	X11573	AAV6-VP1	149	14aa	mRNA_30cpc_SN	1
____SPQEPDSSAGIGKS_____	X11573	AAV9-VP1	149	14aa	mRNA_30cpc_SN	1
____SPQEPDSSAGIGKS_____	X11573	AAV1-VP1	149	14aa	mRNA_30cpc_Th	1
____SPQEPDSSAGIGKS_____	X11573	AAV6-VP1	149	14aa	mRNA_30cpc_Th	1
____SPQEPDSSAGIGKS_____	X11573	AAV9-VP1	149	14aa	mRNA_30cpc_Th	1
____SPQEPDSSAGIGKS_____	X11573	AAV1-VP1	149	14aa	mRNA_3cpc_Th	1
____SPQEPDSSAGIGKS_____	X11573	AAV6-VP1	149	14aa	mRNA_3cpc_Th	1
____SPQEPDSSAGIGKS_____	X11573	AAV9-VP1	149	14aa	mRNA_3cpc_Th	1
____SPQEPDSSAGIGKS_____	X11573	AAV1-VP1	149	14aa	mRNA_30cpc_Ctx	1
____SPQEPDSSAGIGKS_____	X11573	AAV6-VP1	149	14aa	mRNA_30cpc_Ctx	1
____SPQEPDSSAGIGKS_____	X11573	AAV9-VP1	149	14aa	mRNA_30cpc_Ctx	1
__VEQSPQEPDSSAGI_____	X68293	AAV1-VP1	146	14aa	mRNA_30cpc_Th	1
__VEQSPQEPDSSAGI_____	X68293	AAV6-VP1	146	14aa	mRNA_30cpc_Th	1
__VEQSPQEPDSSAGI_____	X68293	AAV9-VP1	146	14aa	mRNA_30cpc_Th	1
__VEQSPQEPDSSAGI_____	X68293	AAV1-VP1	146	14aa	mRNA_30cpc_Ctx	1
__VEQSPQEPDSSAGI_____	X68293	AAV6-VP1	146	14aa	mRNA_30cpc_Ctx	1
__VEQSPQEPDSSAGI_____	X68293	AAV9-VP1	146	14aa	mRNA_30cpc_Ctx	1
__VEQSPQEPDSSAGI_____	X68293	AAV1-VP1	146	14aa	mRNA_3cpc_Ctx	1
__VEQSPQEPDSSAGI_____	X68293	AAV6-VP1	146	14aa	mRNA_3cpc_Ctx	1
__VEQSPQEPDSSAGI_____	X68293	AAV9-VP1	146	14aa	mRNA_3cpc_Ctx	1

Peptide ATVAANGGPASRPP from HSV-2-pUL27 with cluster number 4796

Peptide ATVAANGGPASRPP from HSV-2-pUL27 with cluster number 4796



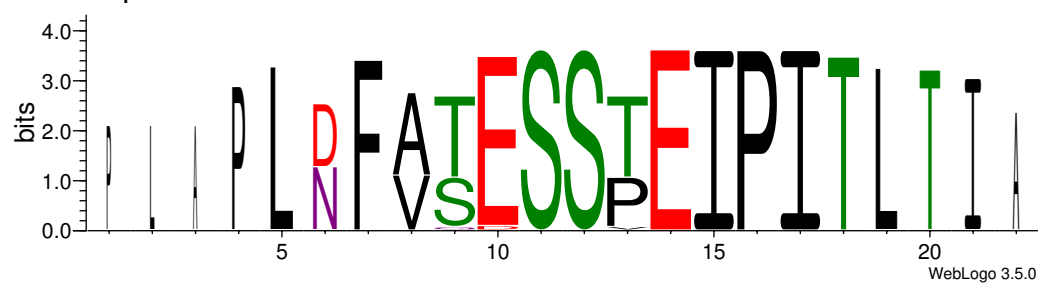
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4796	ATVAANGGPASRPP	46	12	13	14	6	0	0

cluster_id	sequence	alignment	sum	mRNA_30cpc_Ctx	mRNA_30cpc_Th	mRNA_30cpc_SN
4796	SDDSGGPAPLLAPD	-----SDDSGGPAPLLAPD----	7	2	2	2
4796	ATVAANGGPASRPP	-----ATVAANGGPASRPP-----	7	2	2	2
4796	NGGPASRPPVPSP	-----NGGPASRPPVPSP_	6	2	1	2
4796	HGLEELASDDSGGP	HGLEELASDDSGGP_-----	6	1	2	2
4796	ANGGPASRPPVPS	-----ANGGPASRPPVPS__	4	1	1	1
4796	LASDDSGGPAPLLA	-----LASDDSGGPAPLLA-----	3	0	2	0
4796	GGPASRPPVPSPA	-----GGPASRPPVPSPA	3	1	1	1
4796	EAYLRVSGGPGPLV	___EAYLRVSGGPGPLV_____	3	1	1	1
4796	GEAYLRVSGGPGPL	__GEAYLRVSGGPGPL_____	2	1	0	1
4796	VAANGGPASRPPPV	-----VAANGGPASRPPPV_____	1	0	0	1
4796	RGEAYLRVSGGPGP	__RGEAYLRVSGGPGP_____	1	1	0	0
4796	PPTGPATDPASASG	-----PPTGPATDPASASG__	1	0	0	1
4796	GGPVSRRPTRQPV	-----GGPVSRRPTRQPV_____	1	0	0	0
4796	AATVAANGGPASRP	-----AATVAANGGPASRP_____	1	0	1	0

alignment	LUThrs	GeneName	start	structure	Group	Score
___AATVAANGGPASRP_____	X43426	HSV-2-pUL27	37	14aa	mRNA_30cpc_Th	1
_____ANGGPASRPPPVPS__	X39931	HSV-2-pUL27	42	14aa	mRNA_30cpc_SN	1
_____ANGGPASRPPPVPS__	X39931	HSV-2-pUL27	42	14aa	mRNA_30cpc_Th	1
_____ANGGPASRPPPVPS__	X39931	HSV-2-pUL27	42	14aa	mRNA_3cpc_Th	1
_____ANGGPASRPPPVPS__	X39931	HSV-2-pUL27	42	14aa	mRNA_30cpc_Ctx	1
___ATVAANGGPASRPP_____	X40487	HSV-2-pUL27	38	14aa	mRNA_30cpc_SN	2
___ATVAANGGPASRPP_____	X40487	HSV-2-pUL27	38	14aa	mRNA_30cpc_Th	2
___ATVAANGGPASRPP_____	X40487	HSV-2-pUL27	38	14aa	mRNA_3cpc_Th	1
___ATVAANGGPASRPP_____	X40487	HSV-2-pUL27	38	14aa	mRNA_30cpc_Ctx	2
___EAYLRVSGGPGPLV_____	X38972	HSV-1-pUL36	1927	14aa	mRNA_30cpc_SN	1
___EAYLRVSGGPGPLV_____	X38972	HSV-1-pUL36	1927	14aa	mRNA_30cpc_Th	1
___EAYLRVSGGPGPLV_____	X38972	HSV-1-pUL36	1927	14aa	mRNA_30cpc_Ctx	1
___GEAYLRVSGGPGPL_____	X63906	HSV-1-pUL36	1926	14aa	mRNA_30cpc_SN	1
___GEAYLRVSGGPGPL_____	X63906	HSV-1-pUL36	1926	14aa	mRNA_30cpc_Ctx	1
_____GGPASRPPPVPSPA	X64500	HSV-2-pUL27	44	14aa	mRNA_30cpc_SN	1
_____GGPASRPPPVPSPA	X64500	HSV-2-pUL27	44	14aa	mRNA_30cpc_Th	1
_____GGPASRPPPVPSPA	X64500	HSV-2-pUL27	44	14aa	mRNA_30cpc_Ctx	1
_____GGPVSRRPTTRQPV	X64509	HSV-1-pUL36	2847	14aa	mRNA_30cpc_SN_4wks	1
HGLEELASDDSGGP_____	X18139	HSV-1-pUL36	2547	14aa	mRNA_30cpc_SN	2
HGLEELASDDSGGP_____	X18139	HSV-1-pUL36	2547	14aa	mRNA_30cpc_Th	2
HGLEELASDDSGGP_____	X18139	HSV-1-pUL36	2547	14aa	mRNA_3cpc_Th	1
HGLEELASDDSGGP_____	X18139	HSV-1-pUL36	2547	14aa	mRNA_30cpc_Ctx	1
___LASDDSGGPAPLLA_____	X31841	HSV-1-pUL36	2552	14aa	mRNA_30cpc_Th	2
___LASDDSGGPAPLLA_____	X31841	HSV-1-pUL36	2552	14aa	mRNA_3cpc_Th	1
_____NGGPASRPPPVPS_	X2437	HSV-2-pUL27	43	14aa	mRNA_30cpc_SN	2
_____NGGPASRPPPVPS_	X2437	HSV-2-pUL27	43	14aa	mRNA_30cpc_Th	1
_____NGGPASRPPPVPS_	X2437	HSV-2-pUL27	43	14aa	mRNA_3cpc_Th	1
_____NGGPASRPPPVPS_	X2437	HSV-2-pUL27	43	14aa	mRNA_30cpc_Ctx	2
_____PPTGPATDPASASG__	X21885	HSV-1-pUL14	197	14aa	mRNA_30cpc_SN	1
___RGEAYLRVSGGPGP_____	X27524	HSV-1-pUL36	1925	14aa	mRNA_30cpc_Ctx	1
_____SDDSGGPAPLLAPD_____	X12504	HSV-1-pUL36	2554	14aa	mRNA_30cpc_SN	2
_____SDDSGGPAPLLAPD_____	X12504	HSV-1-pUL36	2554	14aa	mRNA_30cpc_Th	2
_____SDDSGGPAPLLAPD_____	X12504	HSV-1-pUL36	2554	14aa	mRNA_3cpc_Th	1
_____SDDSGGPAPLLAPD_____	X12504	HSV-1-pUL36	2554	14aa	mRNA_30cpc_Ctx	2
_____VAANGGPASRPPPV_____	X68743	HSV-2-pUL27	40	14aa	mRNA_30cpc_SN	1

Peptide ATESSTEIPITLTI from PV1-VP2 with cluster number 6619

Peptide ATESSTEIPITLTI from PV1-VP2 with cluster number 6619



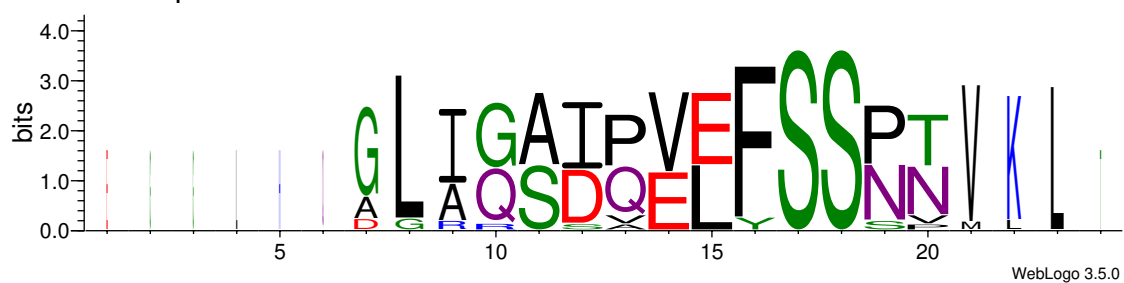
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6619	ATESSTEIPITLTI	38	15	8	11	3	0	0

cluster_id	sequence	alignment	sum	mRNA_30cpc_Ctx	mRNA_30cpc_Th	mRNA_30cpc_SN
6619	ATESSTEIPITLTI	_____ATESSTEIPITLTI_	8	2	2	3
6619	LNFSSESPPEIPIT	____LNFSSESPPEIPIT____	7	3	1	2
6619	PLDFATESSTEIPI	___PLDFATESSTEIPI_____	5	2	2	0
6619	TESSTEIPITLTIA	_____TESSTEIPITLTIA	3	2	0	1
6619	PLAPLDFATESSTEIPITLTIA	PLAPLDFATESSTEIPITLTIA	3	1	1	1
6619	PLNFSSESPPEIPI	___PLNFSSESPPEIPI_____	2	0	1	1
6619	LDFATESSTEIPIT	____LDFATESSTEIPIT____	2	0	1	1
6619	FVSESPPEIPITLT	_____FVSESPPEIPITLT__	2	1	0	1
6619	FATESSTEIPITLT	_____FATESSTEIPITLT__	2	1	0	0
6619	VSESPPEIPITLTI	_____VSESPPEIPITLTI_	1	1	0	0
6619	PLDFAQDSSVEIPI	___PLDFAQDSSVEIPI_____	1	1	0	0
6619	PLAPLNFSSESPPE	PLAPLNFSSESPPE_____	1	1	0	0
6619	NFSSESPPEIPITL	_____NFSSESPPEIPITL__	1	0	0	1

alignment	LUThrs	GeneName	start	structure	Group	Score
_____ATESSTEIPITLTI_	X40367	PV1-VP2	239	14aa	mRNA_30cpc_SN	3
_____ATESSTEIPITLTI_	X40367	PV2-VP2	239	14aa	mRNA_30cpc_SN	3
_____ATESSTEIPITLTI_	X40367	PV1-VP2	239	14aa	mRNA_30cpc_Th	2
_____ATESSTEIPITLTI_	X40367	PV2-VP2	239	14aa	mRNA_30cpc_Th	2
_____ATESSTEIPITLTI_	X40367	PV1-VP2	239	14aa	mRNA_30cpc_Ctx	2
_____ATESSTEIPITLTI_	X40367	PV2-VP2	239	14aa	mRNA_30cpc_Ctx	2
_____ATESSTEIPITLTI_	X40367	PV1-VP2	239	14aa	mRNA_30cpc_SN_4wks	1
_____ATESSTEIPITLTI_	X40367	PV2-VP2	239	14aa	mRNA_30cpc_SN_4wks	1
_____FATESSTEIPITLT__	X60836	PV1-VP2	238	14aaA5	mRNA_3cpc_Th	1
_____FATESSTEIPITLT__	X60836	PV2-VP2	238	14aaA5	mRNA_3cpc_Th	1
_____FATESSTEIPITLT__	X60836	PV1-VP2	238	14aaA5	mRNA_30cpc_Ctx	1
_____FATESSTEIPITLT__	X60836	PV2-VP2	238	14aaA5	mRNA_30cpc_Ctx	1
_____FVSESSPEIPITLT__	X76089	PV1-VP2	238	14aa	mRNA_30cpc_SN	1
_____FVSESSPEIPITLT__	X76089	PV2-VP2	238	14aa	mRNA_30cpc_SN	1
_____FVSESSPEIPITLT__	X76089	PV1-VP2	238	14aa	mRNA_30cpc_Ctx	1
_____FVSESSPEIPITLT__	X76089	PV2-VP2	238	14aa	mRNA_30cpc_Ctx	1
____LDFATESSTEIPIT____	X31468	PV2-VP2	236	14aa	mRNA_30cpc_SN	1
____LDFATESSTEIPIT____	X31468	PV2-VP2	236	14aa	mRNA_30cpc_Th	1
____LNFVSESSPEIPIT____	X28523	PV1-VP2	236	14aa	mRNA_30cpc_SN	2
____LNFVSESSPEIPIT____	X28523	PV1-VP2	236	14aa	mRNA_30cpc_Th	1
____LNFVSESSPEIPIT____	X28523	PV1-VP2	236	14aa	mRNA_3cpc_Th	1
____LNFVSESSPEIPIT____	X28523	PV1-VP2	236	14aa	mRNA_30cpc_Ctx	3
____NFVSESSPEIPITL____	X2982	PV1-VP2	237	14aa	mRNA_30cpc_SN	1
PLAPLDFATESSTEIPITLTIA	X22754	PV1-VP2	232	22aa	mRNA_30cpc_SN	1
PLAPLDFATESSTEIPITLTIA	X22754	PV2-VP2	232	22aa	mRNA_30cpc_SN	1
PLAPLDFATESSTEIPITLTIA	X22754	PV1-VP2	232	22aa	mRNA_30cpc_Th	1
PLAPLDFATESSTEIPITLTIA	X22754	PV2-VP2	232	22aa	mRNA_30cpc_Th	1
PLAPLDFATESSTEIPITLTIA	X22754	PV1-VP2	232	22aa	mRNA_30cpc_Ctx	1
PLAPLDFATESSTEIPITLTIA	X22754	PV2-VP2	232	22aa	mRNA_30cpc_Ctx	1
PLAPLNFVSESSPE_____	X22753	PV1-VP2	232	14aa	mRNA_30cpc_Ctx	1
___PLDFAQDSSVEIPI_____	X22730	PV3-VP1	304	14aa	mRNA_30cpc_Ctx	1
___PLDFATESSTEIPI_____	X22728	PV2-VP2	235	14aa	mRNA_30cpc_Th	1
___PLDFATESSTEIPI_____	X82417	PV2-VP2	235	14aaG4S	mRNA_30cpc_Th	1
___PLDFATESSTEIPI_____	X22728	PV2-VP2	235	14aa	mRNA_3cpc_Th	1
___PLDFATESSTEIPI_____	X22728	PV2-VP2	235	14aa	mRNA_30cpc_Ctx	2
___PLNFVSESSPEIPI_____	X22547	PV1-VP2	235	14aa	mRNA_30cpc_SN	1
___PLNFVSESSPEIPI_____	X22547	PV1-VP2	235	14aa	mRNA_30cpc_Th	1
_____TESSTEIPITLTIA	X8228	PV1-VP2	240	14aa	mRNA_30cpc_SN	1
_____TESSTEIPITLTIA	X8228	PV2-VP2	240	14aa	mRNA_30cpc_SN	1
_____TESSTEIPITLTIA	X8228	PV1-VP2	240	14aa	mRNA_30cpc_Ctx	2
_____TESSTEIPITLTIA	X8228	PV2-VP2	240	14aa	mRNA_30cpc_Ctx	2
_____VSESSPEIPITLTI_	X66448	PV1-VP2	239	14aa	mRNA_30cpc_Ctx	1
_____VSESSPEIPITLTI_	X66448	PV2-VP2	239	14aa	mRNA_30cpc_Ctx	1

Peptide GLIQSDQELFSSPN from HRP with cluster number 6618

Peptide GLIQSDQELFSSPN from HRP with cluster number 6618



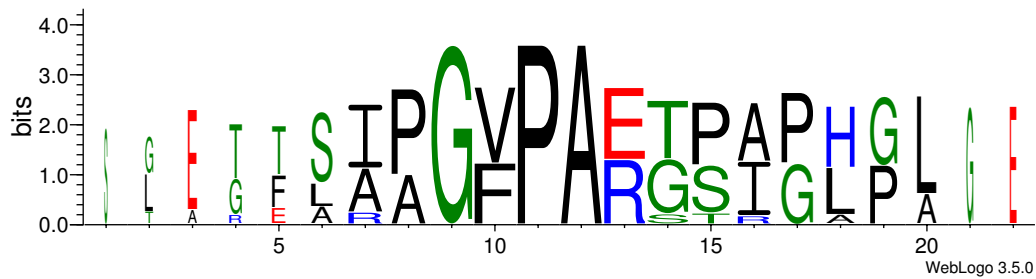
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6618	GLIQSDQELFSSPN	38	9	9	5	9	4	1

cluster_id	sequence	alignment	sum	mRNA_30cpc_Ctx	mRNA_30cpc_Th	mRNA_30cpc_SN
6618	GLIQSDQELFSSPN	_____GLIQSDQELFSSPN_____	16	3	4	0
6618	GAIPVEFSSNTVKL	_____GAIPVEFSSNTVKL_	11	3	3	3
6618	LAGAIPVEFSSNTV	_____LAGAIPVEFSSNTV___	4	0	0	0
6618	DGRRSSAVLFSSPP	_____DGRRSSAVLFSSPP_____	2	0	1	1
6618	ALAGAIVVEYSSSV	_____ALAGAIVVEYSSSV_____	2	2	0	0
6618	EGGLHQUALAGAIVVEYSSSVML	EGGLHQUALAGAIVVEYSSSVML__	1	1	0	0
6618	ALAGAIPVEFSSNT	_____ALAGAIPVEFSSNT_____	1	0	1	0
6618	AIPVEFSSNTVKLT	_____AIPVEFSSNTVKLT_____	1	0	0	1

alignment	LUThrs	GeneName	start	structure	Group	Score
-----AIPVEFSSNTVKLT	X41004	WNV-E-AZ10-918	269	14aa	mRNA_30cpc_SN	1
-----AIPVEFSSNTVKLT	X41004	WNV-E-ArD76104	265	14aa	mRNA_30cpc_SN	1
-----AIPVEFSSNTVKLT	X41004	WNV-E-H-442	269	14aa	mRNA_30cpc_SN	1
-----ALAGAIPEFSSNT----	X56314	WNV-E-AZ10-918	265	14aaA5	mRNA_30cpc_Th	1
-----ALAGAIPEFSSNT----	X56314	WNV-E-ArD76104	261	14aaA5	mRNA_30cpc_Th	1
-----ALAGAIPEFSSNT----	X56314	WNV-E-H-442	265	14aaA5	mRNA_30cpc_Th	1
-----ALAGAIPEYSSSV----	X56315	JEV-E-BN19	265	14aaA5	mRNA_30cpc_Ctx	1
-----ALAGAIPEYSSSV----	X87605	JEV-E-BN19	265	14aaG4S	mRNA_30cpc_Ctx	1
-----ALAGAIPEYSSSV----	X56315	JEV-E-KE-093	265	14aaA5	mRNA_30cpc_Ctx	1
-----ALAGAIPEYSSSV----	X87605	JEV-E-KE-093	265	14aaG4S	mRNA_30cpc_Ctx	1
-----ALAGAIPEYSSSV----	X56315	JEV-E-SA14-5-3	265	14aaA5	mRNA_30cpc_Ctx	1
-----ALAGAIPEYSSSV----	X87605	JEV-E-SA14-5-3	265	14aaG4S	mRNA_30cpc_Ctx	1
-----ALAGAIPEYSSSV----	X56315	JEV-E-ThCMAR4492	265	14aaA5	mRNA_30cpc_Ctx	1
-----ALAGAIPEYSSSV----	X87605	JEV-E-ThCMAR4492	265	14aaG4S	mRNA_30cpc_Ctx	1
-----DGRSSAVLFSSPP----	X36108	PrPc	227	14aa	mRNA_30cpc_SN	1
-----DGRSSAVLFSSPP----	X36108	PrPc	227	14aa	mRNA_30cpc_Th	1
EGGLHQALAGAIPEYSSSVML__	X39138	JEV-E-BN19	259	22aa	mRNA_30cpc_Ctx	1
EGGLHQALAGAIPEYSSSVML__	X39138	JEV-E-KE-093	259	22aa	mRNA_30cpc_Ctx	1
EGGLHQALAGAIPEYSSSVML__	X39138	JEV-E-SA14-5-3	259	22aa	mRNA_30cpc_Ctx	1
EGGLHQALAGAIPEYSSSVML__	X39138	JEV-E-ThCMAR4492	259	22aa	mRNA_30cpc_Ctx	1
-----GAIPVEFSSNTVKL_	X89055	WNV-E-AZ10-918	268	14aaG4S	mRNA_30cpc_SN	3
-----GAIPVEFSSNTVKL_	X89055	WNV-E-ArD76104	264	14aaG4S	mRNA_30cpc_SN	3
-----GAIPVEFSSNTVKL_	X89055	WNV-E-H-442	268	14aaG4S	mRNA_30cpc_SN	3
-----GAIPVEFSSNTVKL_	X89055	WNV-E-AZ10-918	268	14aaG4S	mRNA_30cpc_Th	3
-----GAIPVEFSSNTVKL_	X89055	WNV-E-ArD76104	264	14aaG4S	mRNA_30cpc_Th	3
-----GAIPVEFSSNTVKL_	X89055	WNV-E-H-442	268	14aaG4S	mRNA_30cpc_Th	3
-----GAIPVEFSSNTVKL_	X89055	WNV-E-AZ10-918	268	14aaG4S	mRNA_3cpc_Th	1
-----GAIPVEFSSNTVKL_	X89055	WNV-E-ArD76104	264	14aaG4S	mRNA_3cpc_Th	1
-----GAIPVEFSSNTVKL_	X89055	WNV-E-H-442	268	14aaG4S	mRNA_3cpc_Th	1
-----GAIPVEFSSNTVKL_	X89055	WNV-E-AZ10-918	268	14aaG4S	mRNA_30cpc_Ctx	3
-----GAIPVEFSSNTVKL_	X89055	WNV-E-ArD76104	264	14aaG4S	mRNA_30cpc_Ctx	3
-----GAIPVEFSSNTVKL_	X89055	WNV-E-H-442	268	14aaG4S	mRNA_30cpc_Ctx	3
-----GAIPVEFSSNTVKL_	X89055	WNV-E-AZ10-918	268	14aaG4S	mRNA_3cpc_Ctx	1
-----GAIPVEFSSNTVKL_	X89055	WNV-E-ArD76104	264	14aaG4S	mRNA_3cpc_Ctx	1
-----GAIPVEFSSNTVKL_	X89055	WNV-E-H-442	268	14aaG4S	mRNA_3cpc_Ctx	1
-----GLIQSDQELFSSPN----	X63143	HRP	243	14aa	mRNA_3cpc_SN	1
-----GLIQSDQELFSSPN----	X63143	HRP	243	14aa	mRNA_30cpc_Th	4
-----GLIQSDQELFSSPN----	X63143	HRP	243	14aa	mRNA_3cpc_Th	5
-----GLIQSDQELFSSPN----	X63143	HRP	243	14aa	mRNA_30cpc_Ctx	3
-----GLIQSDQELFSSPN----	X63143	HRP	243	14aa	mRNA_3cpc_Ctx	2
-----GLIQSDQELFSSPN----	X63143	HRP	243	14aa	mRNA_30cpc_Th_4wks	1
-----LAGAIPEFSSNTV__	X32179	WNV-E-AZ10-918	266	14aa	mRNA_3cpc_Th	3
-----LAGAIPEFSSNTV__	X32179	WNV-E-ArD76104	262	14aa	mRNA_3cpc_Th	3
-----LAGAIPEFSSNTV__	X32179	WNV-E-H-442	266	14aa	mRNA_3cpc_Th	3
-----LAGAIPEFSSNTV__	X32179	WNV-E-AZ10-918	266	14aa	mRNA_3cpc_Ctx	1
-----LAGAIPEFSSNTV__	X32179	WNV-E-ArD76104	262	14aa	mRNA_3cpc_Ctx	1
-----LAGAIPEFSSNTV__	X32179	WNV-E-H-442	266	14aa	mRNA_3cpc_Ctx	1

Peptide AAGVPARTPAGHGL from HSV-1-pUL37 with cluster number 6497

Peptide AAGVPARTPAGHGL from HSV-1-pUL37 with cluster number 6497



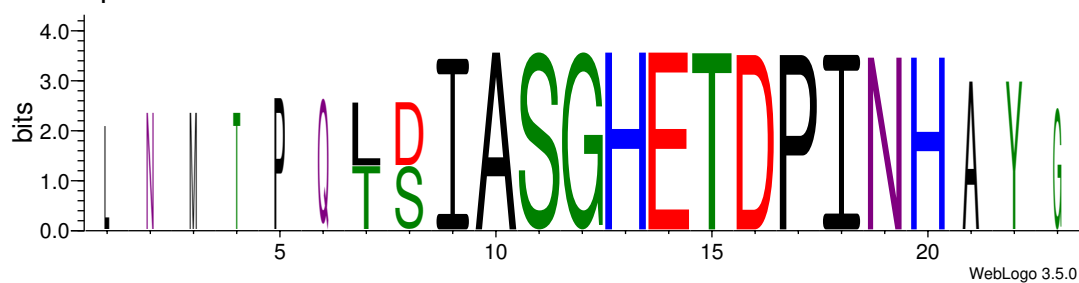
cluster_id	main_sequence	sum	mRNA_30cpc_Ctx	mRNA_30cpc_Th	mRNA_30cpc_SN	mRNA_3cpc_Th	mRNA_3cpc_Ctx	mRNA_3cpc_SN
6497	AAGVPARTPAGHGL	36	13	7	8	7	0	0

cluster_id	sequence	alignment	sum	mRNA_30cpc_Ctx	mRNA_30cpc_Th	mRNA_30cpc_SN
6497	AAGVPARTPAGHGL	-----AAGVPARTPAGHGL--	7	2	2	2
6497	SIPGFPAEGSIPLP	-----SIPGFPAEGSIPLP---	6	0	1	1
6497	GVPARTPAGHGLGE	-----GVPARTPAGHGLGE---	6	2	1	2
6497	IPGFPAEGSIPLPA	-----IPGFPAEGSIPLPA---	4	2	0	2
6497	TTSIPGFPAEGSIP	---TTSIPGFPAEGSIP-----	3	2	1	0
6497	SGETTSIPGFPAEG	SGETTSIPGFPAEG-----	3	2	1	0
6497	LEGFLAAGVPARTP	_LEGFLAAGVPARTP-----	3	1	1	1
6497	TAREARPGVPAEST	_TAREARPGVPAEST-----	1	1	0	0
6497	EGFLAAGVPARTPA	__EGFLAAGVPARTPA-----	1	0	0	0
6497	EARPGVPAESTRPA	___EARPGVPAESTRPA-----	1	0	0	0
6497	ARPGVPAESTRPAP	-----ARPGVPAESTRPAP---	1	1	0	0

alignment	LUThrs	GeneName	start	structure	Group	Score
-----AAGVPARTPAGHGL--	X43828	HSV-1-pUL37	437	14aa	mRNA_30cpc_SN	2
-----AAGVPARTPAGHGL--	X43828	HSV-1-pUL37	437	14aa	mRNA_30cpc_Th	2
-----AAGVPARTPAGHGL--	X43828	HSV-1-pUL37	437	14aa	mRNA_3cpc_Th	1
-----AAGVPARTPAGHGL--	X43828	HSV-1-pUL37	437	14aa	mRNA_30cpc_Ctx	2
-----ARPGVPAESTRPAP---	X42090	HSV-1-pUL36	2596	14aa	mRNA_30cpc_Ctx	1
-----EARPGVPAESTRPA---	X38838	HSV-1-pUL36	2595	14aa	mRNA_30cpc_SN_4wks	1
-----EGFLAAGVPARTPA---	X39197	HSV-1-pUL37	433	14aa	mRNA_3cpc_Th	1
-----GVPARTPAGHGLGE---	X57957	HSV-1-pUL37	439	14aaA5	mRNA_30cpc_SN	2
-----GVPARTPAGHGLGE---	X57957	HSV-1-pUL37	439	14aaA5	mRNA_30cpc_Th	1
-----GVPARTPAGHGLGE---	X57957	HSV-1-pUL37	439	14aaA5	mRNA_3cpc_Th	1
-----GVPARTPAGHGLGE---	X57957	HSV-1-pUL37	439	14aaA5	mRNA_30cpc_Ctx	2
-----IPGFPAEGSIPLPA---	X15485	Tau	252	14aa	mRNA_30cpc_SN	2
-----IPGFPAEGSIPLPA---	X15485	Tau	252	14aa	mRNA_30cpc_Ctx	2
-----LEGFLAAGVPARTP---	X31732	HSV-1-pUL37	432	14aa	mRNA_30cpc_SN	1
-----LEGFLAAGVPARTP---	X31732	HSV-1-pUL37	432	14aa	mRNA_30cpc_Th	1
-----LEGFLAAGVPARTP---	X31732	HSV-1-pUL37	432	14aa	mRNA_30cpc_Ctx	1
-----SGETTSIPGFPAEG---	X13281	Tau	246	14aa	mRNA_30cpc_Th	1
-----SGETTSIPGFPAEG---	X13281	Tau	246	14aa	mRNA_30cpc_Ctx	2
-----SIPGFPAEGSIPLP---	X11013	Tau	251	14aa	mRNA_30cpc_SN	1
-----SIPGFPAEGSIPLP---	X11013	Tau	251	14aa	mRNA_30cpc_Th	1
-----SIPGFPAEGSIPLP---	X11013	Tau	251	14aa	mRNA_3cpc_Th	4
-----TAREARPGVPAEST---	X8528	HSV-1-pUL36	2592	14aa	mRNA_30cpc_Ctx	1
-----TTSIPGFPAEGSIP---	X5959	Tau	249	14aa	mRNA_30cpc_Th	1
-----TTSIPGFPAEGSIP---	X5959	Tau	249	14aa	mRNA_30cpc_Ctx	2

Peptide TSIASGHETDPINH from BDV-CRNP5 with cluster number 6482

Peptide TSIASGHETDPINH from BDV-CRNP5 with cluster number 6482



cluster_id	main_sequence	sum	mRNA_30cpc_Ctx	mRNA_30cpc_Th	mRNA_30cpc_SN	mRNA_3cpc_Th	mRNA_3cpc_Ctx	mRNA_3cpc_SN
6482	TSIASGHETDPINH	35	5	10	6	12	1	1

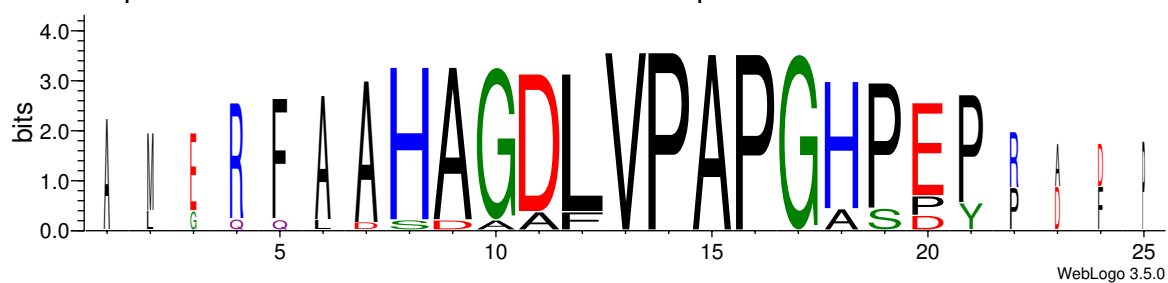
cluster_id	sequence	alignment	sum	mRNA_30cpc_Ctx	mRNA_30cpc_Th	mRNA_30cpc_SN
6482	TSIASGHETDPINH	_____TSIASGHETDPINH___	9	0	1	1
6482	ASGHETDPINHAYG	_____ASGHETDPINHAYG	7	2	3	1
6482	LDIASGHETDPINH	_____LDIASGHETDPINH___	6	1	2	2
6482	IASGHETDPINHAY	_____IASGHETDPINHAY_	4	1	1	2
6482	PQLDIASGHETDPI	___PQLDIASGHETDPI_____	3	0	2	0
6482	LNMPQTSIASGHETDPINHAY	LNMPQTSIASGHETDPINHAY_	3	1	0	0
6482	NMTPQLDIASGHET	_NMTPQLDIASGHET_____	2	0	1	0
6482	LNMPQLDIASGHE	LNMPQLDIASGHE_____	1	0	0	0

alignment	LUThrs	GeneName	start	structure	Group	Score
-----ASGHETDPINHAYG	X87144	BDV-CRNP5	412	14aaG4S	mRNA_30cpc_SN	1
-----ASGHETDPINHAYG	X87144	BDV-G	412	14aaG4S	mRNA_30cpc_SN	1
-----ASGHETDPINHAYG	X87144	BDV-No-98	412	14aaG4S	mRNA_30cpc_SN	1
-----ASGHETDPINHAYG	X40857	BDV-CRNP5	412	14aa	mRNA_30cpc_Th	2
-----ASGHETDPINHAYG	X87144	BDV-CRNP5	412	14aaG4S	mRNA_30cpc_Th	1
-----ASGHETDPINHAYG	X40857	BDV-G	412	14aa	mRNA_30cpc_Th	2
-----ASGHETDPINHAYG	X87144	BDV-G	412	14aaG4S	mRNA_30cpc_Th	1
-----ASGHETDPINHAYG	X40857	BDV-No-98	412	14aa	mRNA_30cpc_Th	2
-----ASGHETDPINHAYG	X87144	BDV-No-98	412	14aaG4S	mRNA_30cpc_Th	1
-----ASGHETDPINHAYG	X40857	BDV-CRNP5	412	14aa	mRNA_3cpc_Th	1
-----ASGHETDPINHAYG	X40857	BDV-G	412	14aa	mRNA_3cpc_Th	1
-----ASGHETDPINHAYG	X40857	BDV-No-98	412	14aa	mRNA_3cpc_Th	1
-----ASGHETDPINHAYG	X40857	BDV-CRNP5	412	14aa	mRNA_30cpc_Ctx	1
-----ASGHETDPINHAYG	X87144	BDV-CRNP5	412	14aaG4S	mRNA_30cpc_Ctx	1
-----ASGHETDPINHAYG	X40857	BDV-G	412	14aa	mRNA_30cpc_Ctx	1
-----ASGHETDPINHAYG	X87144	BDV-G	412	14aaG4S	mRNA_30cpc_Ctx	1
-----ASGHETDPINHAYG	X40857	BDV-No-98	412	14aa	mRNA_30cpc_Ctx	1
-----ASGHETDPINHAYG	X87144	BDV-No-98	412	14aaG4S	mRNA_30cpc_Ctx	1
-----IASGHETDPINHAY_	X16210	BDV-CRNP5	411	14aa	mRNA_30cpc_SN	2
-----IASGHETDPINHAY_	X16210	BDV-G	411	14aa	mRNA_30cpc_SN	2
-----IASGHETDPINHAY_	X16210	BDV-No-98	411	14aa	mRNA_30cpc_SN	2
-----IASGHETDPINHAY_	X16210	BDV-CRNP5	411	14aa	mRNA_30cpc_Th	1
-----IASGHETDPINHAY_	X16210	BDV-G	411	14aa	mRNA_30cpc_Th	1
-----IASGHETDPINHAY_	X16210	BDV-No-98	411	14aa	mRNA_30cpc_Th	1
-----IASGHETDPINHAY_	X16210	BDV-CRNP5	411	14aa	mRNA_30cpc_Ctx	1
-----IASGHETDPINHAY_	X16210	BDV-G	411	14aa	mRNA_30cpc_Ctx	1
-----IASGHETDPINHAY_	X16210	BDV-No-98	411	14aa	mRNA_30cpc_Ctx	1
-----LDIASGHETDPINH___	X53375	BDV-CRNP5	409	14aaA5	mRNA_30cpc_SN	2
-----LDIASGHETDPINH___	X53375	BDV-G	409	14aaA5	mRNA_30cpc_SN	2
-----LDIASGHETDPINH___	X53375	BDV-No-98	409	14aaA5	mRNA_30cpc_SN	2
-----LDIASGHETDPINH___	X53375	BDV-CRNP5	409	14aaA5	mRNA_30cpc_Th	2
-----LDIASGHETDPINH___	X53375	BDV-G	409	14aaA5	mRNA_30cpc_Th	2
-----LDIASGHETDPINH___	X53375	BDV-No-98	409	14aaA5	mRNA_30cpc_Th	2
-----LDIASGHETDPINH___	X53375	BDV-CRNP5	409	14aaA5	mRNA_3cpc_Th	1
-----LDIASGHETDPINH___	X53375	BDV-G	409	14aaA5	mRNA_3cpc_Th	1
-----LDIASGHETDPINH___	X53375	BDV-No-98	409	14aaA5	mRNA_3cpc_Th	1
-----LDIASGHETDPINH___	X53375	BDV-CRNP5	409	14aaA5	mRNA_30cpc_Ctx	1
-----LDIASGHETDPINH___	X53375	BDV-G	409	14aaA5	mRNA_30cpc_Ctx	1
-----LDIASGHETDPINH___	X53375	BDV-No-98	409	14aaA5	mRNA_30cpc_Ctx	1
LNMTPLDIASGHE_-----	X52595	BDV-No-98	403	14aaA5	mRNA_3cpc_Th	1
LNMTPQTSIASGHETDPINHAY_	X28364	BDV-CRNP5	403	22aa	mRNA_3cpc_Th	2
LNMTPQTSIASGHETDPINHAY_	X28364	BDV-G	403	22aa	mRNA_3cpc_Th	2
LNMTPQTSIASGHETDPINHAY_	X28364	BDV-No-98	403	22aa	mRNA_3cpc_Th	2
LNMTPQTSIASGHETDPINHAY_	X28364	BDV-CRNP5	403	22aa	mRNA_30cpc_Ctx	1
LNMTPQTSIASGHETDPINHAY_	X28364	BDV-G	403	22aa	mRNA_30cpc_Ctx	1
LNMTPQTSIASGHETDPINHAY_	X28364	BDV-No-98	403	22aa	mRNA_30cpc_Ctx	1
NMTPQLDIASGHET-----	X957	BDV-No-98	404	14aa	mRNA_30cpc_Th	1

alignment	LUThrs	GeneName	start	structure	Group	Score
_NMTPQLDIASGHET_____	X957	BDV-No-98	404	14aa	mRNA_3cpc_Th	1
____PQLDIASGHETDPI_____	X21765	BDV-No-98	407	14aa	mRNA_30cpc_Th	2
____PQLDIASGHETDPI_____	X21765	BDV-No-98	407	14aa	mRNA_3cpc_Th	1
_____TSIASGHETDPINH____	X46864	BDV-CRNP5	409	14aaA5	mRNA_30cpc_SN	1
_____TSIASGHETDPINH____	X46864	BDV-G	409	14aaA5	mRNA_30cpc_SN	1
_____TSIASGHETDPINH____	X46864	BDV-No-98	408	14aaA5	mRNA_30cpc_SN	1
_____TSIASGHETDPINH____	X46864	BDV-CRNP5	409	14aaA5	mRNA_3cpc_SN	1
_____TSIASGHETDPINH____	X46864	BDV-G	409	14aaA5	mRNA_3cpc_SN	1
_____TSIASGHETDPINH____	X46864	BDV-No-98	408	14aaA5	mRNA_3cpc_SN	1
_____TSIASGHETDPINH____	X46864	BDV-CRNP5	409	14aaA5	mRNA_30cpc_Th	1
_____TSIASGHETDPINH____	X46864	BDV-G	409	14aaA5	mRNA_30cpc_Th	1
_____TSIASGHETDPINH____	X46864	BDV-No-98	408	14aaA5	mRNA_30cpc_Th	1
_____TSIASGHETDPINH____	X46864	BDV-CRNP5	409	14aaA5	mRNA_3cpc_Th	5
_____TSIASGHETDPINH____	X46864	BDV-G	409	14aaA5	mRNA_3cpc_Th	5
_____TSIASGHETDPINH____	X46864	BDV-No-98	408	14aaA5	mRNA_3cpc_Th	5
_____TSIASGHETDPINH____	X46864	BDV-CRNP5	409	14aaA5	mRNA_3cpc_Ctx	1
_____TSIASGHETDPINH____	X46864	BDV-G	409	14aaA5	mRNA_3cpc_Ctx	1
_____TSIASGHETDPINH____	X46864	BDV-No-98	408	14aaA5	mRNA_3cpc_Ctx	1

Peptide HAGDLVPAPGHPEP from HSV-1-pUL19 with cluster number 6501

Peptide HAGDLVPAPGHPEP from HSV-1-pUL19 with cluster number 6501



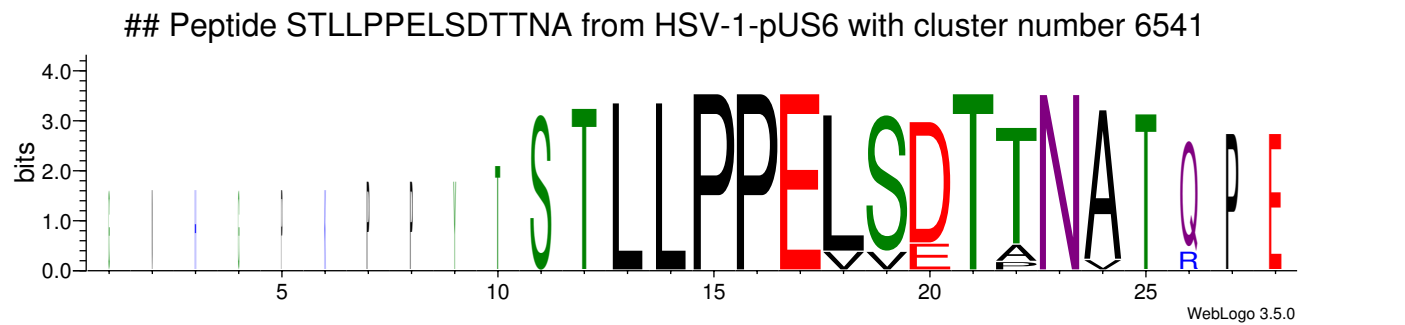
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6501	HAGDLVPAPGHPEP	34	8	8	7	5	4	1

cluster_id	sequence	alignment	sum	mRNA_30cpc_Ctx	mRNA_30cpc_Th	mRNA_30cpc_SN
6501	HAGDLVPAPGHPEP	-----HAGDLVPAPGHPEP----	12	2	3	3
6501	RFAAHAGDLVPAPG	__RFAAHAGDLVPAPG_____	4	1	0	0
6501	AHAGDLVPAPGHPE	-----AHAGDLVPAPGHPE-----	3	1	1	0
6501	AHAGDLVPAPGHDP	-----AHAGDLVPAPGHDP-----	3	1	0	1
6501	RFAAHAGDLVPAPGHPEPRAFP	__RFAAHAGDLVPAPGHPEPRAFP	2	1	0	1
6501	AMERFAAHAGDLVPAPGHPEPR	AMERFAAHAGDLVPAPGHPEPR__	2	1	1	0
6501	AMERFAAHAGDLVP	AMERFAAHAGDLVP_____	2	0	1	1
6501	AFVPAPGASPYDD	-----AFVPAPGASPYDD_	2	0	0	0
6501	SDAAFVPAPGASPY	-----SDAAFVPAPGASPY-----	1	0	1	0
6501	FAAHAGDLVPAPGH	----FAAHAGDLVPAPGH-----	1	0	0	1
6501	ALGQQLDSDAAFVPAPGASPY	ALGQQLDSDAAFVPAPGASPY__	1	1	0	0
6501	AAHAGDLVPAPGHP	-----AAHAGDLVPAPGHP-----	1	0	1	0

alignment	LUThrs	GeneName	start	structure	Group	Score
_____AAHAGDLVPAPGHP_____	X43511	HSV-1-pUL19	417	14aa	mRNA_30cpc_Th	1
_____AAHAGDLVPAPGHP_____	X43511	HSV-2-pUL19	417	14aa	mRNA_30cpc_Th	1
_____AFVPAPGASPYDD_____	X45229	HSV-1-pUL36	944	14aa	mRNA_3cpc_SN	1
_____AFVPAPGASPYDD_____	X45229	HSV-1-pUL36	944	14aa	mRNA_3cpc_Th	1
_____AHAGDLVPAPGHPD_____	X41345	HSV-1-pUL19	418	14aa	mRNA_30cpc_SN	1
_____AHAGDLVPAPGHPD_____	X41345	HSV-2-pUL19	418	14aa	mRNA_30cpc_SN	1
_____AHAGDLVPAPGHPD_____	X41345	HSV-1-pUL19	418	14aa	mRNA_30cpc_Ctx	1
_____AHAGDLVPAPGHPD_____	X41345	HSV-2-pUL19	418	14aa	mRNA_30cpc_Ctx	1
_____AHAGDLVPAPGHPD_____	X41345	HSV-1-pUL19	418	14aa	mRNA_30cpc_Th_4wks	1
_____AHAGDLVPAPGHPD_____	X41345	HSV-2-pUL19	418	14aa	mRNA_30cpc_Th_4wks	1
_____AHAGDLVPAPGHPE_____	X87279	HSV-1-pUL19	418	14aaG4S	mRNA_30cpc_Th	1
_____AHAGDLVPAPGHPE_____	X87279	HSV-2-pUL19	418	14aaG4S	mRNA_30cpc_Th	1
_____AHAGDLVPAPGHPE_____	X87279	HSV-1-pUL19	418	14aaG4S	mRNA_30cpc_Ctx	1
_____AHAGDLVPAPGHPE_____	X87279	HSV-2-pUL19	418	14aaG4S	mRNA_30cpc_Ctx	1
_____AHAGDLVPAPGHPE_____	X87279	HSV-1-pUL19	418	14aaG4S	mRNA_3cpc_Ctx	1
_____AHAGDLVPAPGHPE_____	X87279	HSV-2-pUL19	418	14aaG4S	mRNA_3cpc_Ctx	1
ALGQQLSDSAAFVPAPGASPY_____	X42684	HSV-1-pUL36	934	22aa	mRNA_30cpc_Ctx	1
AMERFAAHAGDLVP_____	X87231	HSV-1-pUL19	412	14aaG4S	mRNA_30cpc_SN	1
AMERFAAHAGDLVP_____	X87231	HSV-2-pUL19	412	14aaG4S	mRNA_30cpc_SN	1
AMERFAAHAGDLVP_____	X87231	HSV-1-pUL19	412	14aaG4S	mRNA_30cpc_Th	1
AMERFAAHAGDLVP_____	X87231	HSV-2-pUL19	412	14aaG4S	mRNA_30cpc_Th	1
AMERFAAHAGDLVPAPGHPEPR_____	X41196	HSV-1-pUL19	412	22aa	mRNA_30cpc_Th	1
AMERFAAHAGDLVPAPGHPEPR_____	X41196	HSV-2-pUL19	412	22aa	mRNA_30cpc_Th	1
AMERFAAHAGDLVPAPGHPEPR_____	X41196	HSV-1-pUL19	412	22aa	mRNA_30cpc_Ctx	1
AMERFAAHAGDLVPAPGHPEPR_____	X41196	HSV-2-pUL19	412	22aa	mRNA_30cpc_Ctx	1
___FAAHAGDLVPAPGH_____	X75829	HSV-1-pUL19	416	14aa	mRNA_30cpc_SN	1
___FAAHAGDLVPAPGH_____	X75829	HSV-2-pUL19	416	14aa	mRNA_30cpc_SN	1
_____HAGDLVPAPGHPEP_____	X18063	HSV-1-pUL19	419	14aa	mRNA_30cpc_SN	3
_____HAGDLVPAPGHPEP_____	X18063	HSV-2-pUL19	419	14aa	mRNA_30cpc_SN	3
_____HAGDLVPAPGHPEP_____	X18063	HSV-1-pUL19	419	14aa	mRNA_30cpc_Th	3
_____HAGDLVPAPGHPEP_____	X18063	HSV-2-pUL19	419	14aa	mRNA_30cpc_Th	3
_____HAGDLVPAPGHPEP_____	X18063	HSV-1-pUL19	419	14aa	mRNA_3cpc_Th	2
_____HAGDLVPAPGHPEP_____	X18063	HSV-2-pUL19	419	14aa	mRNA_3cpc_Th	2
_____HAGDLVPAPGHPEP_____	X18063	HSV-1-pUL19	419	14aa	mRNA_30cpc_Ctx	2
_____HAGDLVPAPGHPEP_____	X18063	HSV-2-pUL19	419	14aa	mRNA_30cpc_Ctx	2
_____HAGDLVPAPGHPEP_____	X18063	HSV-1-pUL19	419	14aa	mRNA_3cpc_Ctx	2
_____HAGDLVPAPGHPEP_____	X18063	HSV-2-pUL19	419	14aa	mRNA_3cpc_Ctx	2
___RFAAHAGDLVPAPG_____	X28278	HSV-1-pUL19	415	14aa	mRNA_3cpc_Th	2
___RFAAHAGDLVPAPG_____	X28278	HSV-2-pUL19	415	14aa	mRNA_3cpc_Th	2
___RFAAHAGDLVPAPG_____	X28278	HSV-1-pUL19	415	14aa	mRNA_30cpc_Ctx	1
___RFAAHAGDLVPAPG_____	X28278	HSV-2-pUL19	415	14aa	mRNA_30cpc_Ctx	1
___RFAAHAGDLVPAPG_____	X28278	HSV-1-pUL19	415	14aa	mRNA_3cpc_Ctx	1
___RFAAHAGDLVPAPG_____	X28278	HSV-2-pUL19	415	14aa	mRNA_3cpc_Ctx	1
___RFAAHAGDLVPAPGHPEPRAFP_____	X28277	HSV-1-pUL19	415	22aa	mRNA_30cpc_SN	1
___RFAAHAGDLVPAPGHPEPRAFP_____	X28277	HSV-2-pUL19	415	22aa	mRNA_30cpc_SN	1
___RFAAHAGDLVPAPGHPEPRAFP_____	X28277	HSV-1-pUL19	415	22aa	mRNA_30cpc_Ctx	1
___RFAAHAGDLVPAPGHPEPRAFP_____	X28277	HSV-2-pUL19	415	22aa	mRNA_30cpc_Ctx	1

alignment	LUThrs	GeneName	start	structure	Group	Score
-----SDAAFVPAPGASPY----	X12547	HSV-1-pUL36	941	14aa	mRNA_30cpc_Th	1

Peptide STLLPPELSDTTNA from HSV-1-pUS6 with cluster number 6541



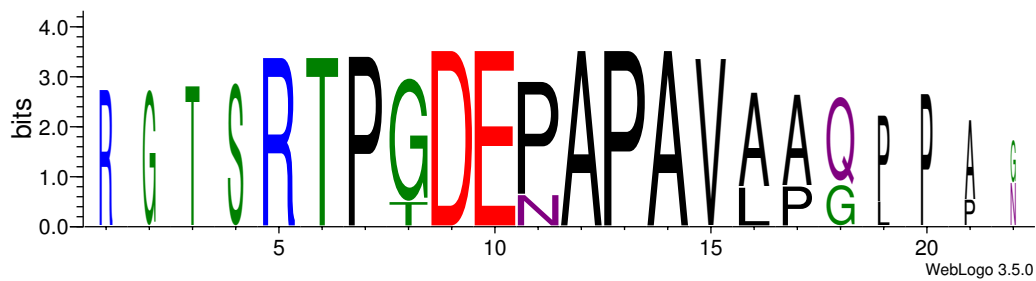
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6541	STLLPPELSDTTNA	33	9	9	7	6	2	0

cluster_id	sequence	alignment	sum	mRNA_30cpc_Ctx	mRNA_30cpc_Th	mRNA_30cpc_SN
6541	STLLPPELSDTTNA	-----STLLPPELSDTTNA----	13	4	4	4
6541	PPELSDTTNATQPE	-----PPELSDTTNATQPE	7	2	2	2
6541	TLLPPELSDTTNAT	-----TLLPPELSDTTNAT--	3	1	2	0
6541	TSTLLPPEVVETAN	-----TSTLLPPEVVETAN-----	2	0	0	0
6541	PPEVVETANVTRPE	-----PPEVVETANVTRPE	2	0	0	0
6541	LLPPELSETPNATQ	-----LLPPELSETPNATQ__	2	1	0	1
6541	LLPPELSDTTNATQ	-----LLPPELSDTTNATQ__	2	1	0	0
6541	PPYTSTLLPPELSDTTNATQPE	-----PPYTSTLLPPELSDTTNATQPE	1	0	1	0
6541	GWHGPKPPYTSTLLPPELSDTT	GWHGPKPPYTSTLLPPELSDTT-----	1	0	0	0

alignment	LUThrs	GeneName	start	structure	Group	Score
GWHGPKPPYTSTLLPPELSDTT_____	X65370	HSV-1-pUS6	265	22aa	mRNA_3cpc_Th	1
GWHGPKPPYTSTLLPPELSDTT_____	X65370	HSV-2-pUS6	265	22aa	mRNA_3cpc_Th	1
_____LLPPELSDTTNATQ__	X30911	HSV-1-pUS6	277	14aa	mRNA_3cpc_Th	1
_____LLPPELSDTTNATQ__	X30911	HSV-2-pUS6	277	14aa	mRNA_3cpc_Th	1
_____LLPPELSDTTNATQ__	X84578	HSV-1-pUS6	277	14aaG4S	mRNA_30cpc_Ctx	1
_____LLPPELSDTTNATQ__	X84578	HSV-2-pUS6	277	14aaG4S	mRNA_30cpc_Ctx	1
_____LLPPELSETPNATQ__	X30913	HSV-1-pUS6	277	14aa	mRNA_30cpc_SN	1
_____LLPPELSETPNATQ__	X30913	HSV-2-pUS6	277	14aa	mRNA_30cpc_SN	1
_____LLPPELSETPNATQ__	X30913	HSV-1-pUS6	277	14aa	mRNA_30cpc_Ctx	1
_____LLPPELSETPNATQ__	X30913	HSV-2-pUS6	277	14aa	mRNA_30cpc_Ctx	1
_____PPELSDTTNATQPE	X22117	HSV-2-pUS6	279	14aa	mRNA_30cpc_SN	2
_____PPELSDTTNATQPE	X22117	HSV-2-pUS6	279	14aa	mRNA_30cpc_Th	2
_____PPELSDTTNATQPE	X22117	HSV-2-pUS6	279	14aa	mRNA_3cpc_Th	1
_____PPELSDTTNATQPE	X22117	HSV-2-pUS6	279	14aa	mRNA_30cpc_Ctx	2
_____PPEVVETANVTRPE	X22129	BV-G	279	14aa	mRNA_3cpc_Th	1
_____PPEVVETANVTRPE	X22129	BV-G	279	14aa	mRNA_3cpc_Ctx	1
_____PPYTSTLLPPELSDTTNATQPE	X22271	HSV-1-pUS6	271	22aa	mRNA_30cpc_Th	1
_____PPYTSTLLPPELSDTTNATQPE	X22271	HSV-2-pUS6	271	22aa	mRNA_30cpc_Th	1
_____STLLPPELSDTTNA_____	X10394	HSV-1-pUS6	275	14aa	mRNA_30cpc_SN	4
_____STLLPPELSDTTNA_____	X10394	HSV-2-pUS6	275	14aa	mRNA_30cpc_SN	4
_____STLLPPELSDTTNA_____	X10394	HSV-1-pUS6	275	14aa	mRNA_30cpc_Th	4
_____STLLPPELSDTTNA_____	X10394	HSV-2-pUS6	275	14aa	mRNA_30cpc_Th	4
_____STLLPPELSDTTNA_____	X10394	HSV-1-pUS6	275	14aa	mRNA_3cpc_Th	1
_____STLLPPELSDTTNA_____	X10394	HSV-2-pUS6	275	14aa	mRNA_3cpc_Th	1
_____STLLPPELSDTTNA_____	X10394	HSV-1-pUS6	275	14aa	mRNA_30cpc_Ctx	4
_____STLLPPELSDTTNA_____	X10394	HSV-2-pUS6	275	14aa	mRNA_30cpc_Ctx	4
_____TLLPPELSDTTNAT_____	X7845	HSV-1-pUS6	276	14aa	mRNA_30cpc_Th	2
_____TLLPPELSDTTNAT_____	X7845	HSV-2-pUS6	276	14aa	mRNA_30cpc_Th	2
_____TLLPPELSDTTNAT_____	X7845	HSV-1-pUS6	276	14aa	mRNA_30cpc_Ctx	1
_____TLLPPELSDTTNAT_____	X7845	HSV-2-pUS6	276	14aa	mRNA_30cpc_Ctx	1
_____TSTLLPPEVVETAN_____	X46855	BV-G	274	14aaA5	mRNA_3cpc_Th	1
_____TSTLLPPEVVETAN_____	X46855	BV-G	274	14aaA5	mRNA_3cpc_Ctx	1

Peptide RTPGDEPAPAVAAQ from BV-G with cluster number 4366

Peptide RTPGDEPAPAVAAQ from BV-G with cluster number 4366



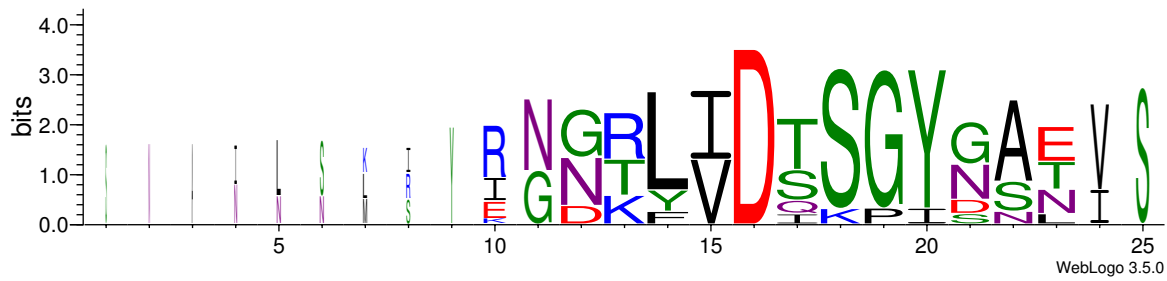
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4366	RTPGDEPAPAVAAQ	32	5	3	3	14	2	3

cluster_id	sequence	alignment	sum	mRNA_30cpc_Ctx	mRNA_30cpc_Th	mRNA_30cpc_SN
4366	RTPGDEPAPAVAAQ	____RTPGDEPAPAVAAQ____	13	1	1	1
4366	RGTSRTPGDEPAPA	RGTSRTPGDEPAPA_____	8	1	1	0
4366	TDENAPAVLPGPPA	_____TDENAPAVLPGPPA_	4	0	0	1
4366	RGTSRTPGDEPAPAVAAQLPPN	RGTSRTPGDEPAPAVAAQLPPN	2	1	1	0
4366	DENAPAVLPGPPAG	_____DENAPAVLPGPPAG	2	0	0	1
4366	TSRTPGDEPAPAVA	__TSRTPGDEPAPAVA_____	1	1	0	0
4366	SRTPGDEPAPAVAA	___SRTPGDEPAPAVAA_____	1	0	0	0
4366	PTDENAPAVLPGPP	_____PTDENAPAVLPGPP__	1	1	0	0

alignment	LUThrs	GeneName	start	structure	Group	Score
_____DENAPAVLPGPPAG	X35636	HSV-2-pUL22	303	14aa	mRNA_30cpc_SN	1
_____DENAPAVLPGPPAG	X35636	HSV-2-pUL22	303	14aa	mRNA_3cpc_Th	1
_____PTDENAPAVLPGPP__	X50697	HSV-2-pUL22	301	14aaA5	mRNA_30cpc_Ctx	1
RGTSRTPGDEPAPA_____	X83630	BV-G	298	14aaG4S	mRNA_30cpc_Th	1
RGTSRTPGDEPAPA_____	X27393	BV-G	298	14aa	mRNA_3cpc_Th	1
RGTSRTPGDEPAPA_____	X83630	BV-G	298	14aaG4S	mRNA_3cpc_Th	4
RGTSRTPGDEPAPA_____	X83630	BV-G	298	14aaG4S	mRNA_30cpc_Ctx	1
RGTSRTPGDEPAPA_____	X83630	BV-G	298	14aaG4S	mRNA_3cpc_Ctx	1
RGTSRTPGDEPAPAVAAQLPPN	X27394	BV-G	298	22aa	mRNA_30cpc_Th	1
RGTSRTPGDEPAPAVAAQLPPN	X27394	BV-G	298	22aa	mRNA_30cpc_Ctx	1
___RTPGDEPAPAVAAQ___	X25013	BV-G	302	14aa	mRNA_30cpc_SN	1
___RTPGDEPAPAVAAQ___	X25013	BV-G	302	14aa	mRNA_3cpc_SN	2
___RTPGDEPAPAVAAQ___	X25013	BV-G	302	14aa	mRNA_30cpc_Th	1
___RTPGDEPAPAVAAQ___	X25013	BV-G	302	14aa	mRNA_3cpc_Th	6
___RTPGDEPAPAVAAQ___	X25013	BV-G	302	14aa	mRNA_30cpc_Ctx	1
___RTPGDEPAPAVAAQ___	X25013	BV-G	302	14aa	mRNA_3cpc_Ctx	1
___RTPGDEPAPAVAAQ___	X25013	BV-G	302	14aa	mRNA_3cpc_Th_4wks	1
___SRTPGDEPAPAVAA_____	X79635	BV-G	301	14aaG4S	mRNA_3cpc_Th_4wks	1
_____TDENAPAVLPGPPA_	X8143	HSV-2-pUL22	302	14aa	mRNA_30cpc_SN	1
_____TDENAPAVLPGPPA_	X8143	HSV-2-pUL22	302	14aa	mRNA_3cpc_SN	1
_____TDENAPAVLPGPPA_	X8143	HSV-2-pUL22	302	14aa	mRNA_3cpc_Th	2
__TSRTPGDEPAPAVA_____	X6345	BV-G	300	14aa	mRNA_30cpc_Ctx	1

Peptide NTLVDTSGYNAEVS from BoNT-C-Hc with cluster number 5366

Peptide NTLVDTSGYNAEVS from BoNT-C-Hc with cluster number 5366



cluster_id	main_sequence	sum	mRNA_30cpc_Ctx	mRNA_30cpc_Th	mRNA_30cpc_SN	mRNA_3cpc_Th	mRNA_3cpc_Ctx	mRNA_3cpc_SN
5366	NTLVDTSGYNAEVS	31	9	6	8	7	1	0

cluster_id	sequence	alignment	sum	mRNA_30cpc_Ctx	mRNA_30cpc_Th	mRNA_30cpc_SN
5366	NTLVDTSGYNAEVS	_____NTLVDTSGYNAEVS	10	3	2	3
5366	RGGRLIDSSGYGAT	_____RGGRLIDSSGYGAT__	8	2	2	3
5366	NDKYVDTSGYDSNI	_____NDKYVDTSGYDSNI_	4	1	1	1
5366	INGRLIDQKPISNL	_____INGRLIDQKPISNL	3	0	0	0
5366	ENNKFIDISGYGSN	_____ENNKFIDISGYGSN__	3	1	1	1
5366	SNAILSLSYRGGRLIDSSGYGA	SNAILSLSYRGGRLIDSSGYGA__	1	1	0	0
5366	NNSKIYINGRLIDQ	____NNSKIYINGRLIDQ_____	1	1	0	0
5366	LNMRKYNDKYVDTS	____LNMRKYNDKYVDTS_____	1	0	0	0

alignment	LUThrs	GeneName	start	structure	Group	Score
_____ENNKFIDISGYGSN__	X86079	BoNT-F-Hc	16	14aaG4S	mRNA_30cpc_SN	1
_____ENNKFIDISGYGSN__	X86079	BoNT-F-Hc	16	14aaG4S	mRNA_30cpc_Th	1
_____ENNKFIDISGYGSN__	X86079	BoNT-F-Hc	16	14aaG4S	mRNA_30cpc_Ctx	1
_____INGRLIDQKPISNL__	X14311	BoNT-A-Hc	198	14aa	mRNA_3cpc_Th	2
_____INGRLIDQKPISNL__	X14311	BoNT-A-Hc	198	14aa	mRNA_3cpc_Ctx	1
____LNMRKYNDKYVDTS_____	X52597	BoNT-E-Hc	73	14aaA5	mRNA_3cpc_Th	1
_____NDKYVDTSGYDSNI_	X1776	BoNT-E-Hc	79	14aa	mRNA_30cpc_SN	1
_____NDKYVDTSGYDSNI_	X45703	BoNT-E-Hc	79	14aaA5	mRNA_30cpc_Th	1
_____NDKYVDTSGYDSNI_	X45703	BoNT-E-Hc	79	14aaA5	mRNA_3cpc_Th	1
_____NDKYVDTSGYDSNI_	X45703	BoNT-E-Hc	79	14aaA5	mRNA_30cpc_Ctx	1
____NNSKIYINGRLIDQ_____	X58	BoNT-A-Hc	192	14aa	mRNA_30cpc_Ctx	1
_____NTLVDTSGYNAEVS	X514	BoNT-C-Hc	21	14aa	mRNA_30cpc_SN	3
_____NTLVDTSGYNAEVS	X514	BoNT-D-Hc	14	14aa	mRNA_30cpc_SN	3
_____NTLVDTSGYNAEVS	X514	BoNT-C-Hc	21	14aa	mRNA_30cpc_Th	2
_____NTLVDTSGYNAEVS	X514	BoNT-D-Hc	14	14aa	mRNA_30cpc_Th	2
_____NTLVDTSGYNAEVS	X514	BoNT-C-Hc	21	14aa	mRNA_3cpc_Th	2
_____NTLVDTSGYNAEVS	X514	BoNT-D-Hc	14	14aa	mRNA_3cpc_Th	2
_____NTLVDTSGYNAEVS	X514	BoNT-C-Hc	21	14aa	mRNA_30cpc_Ctx	3
_____NTLVDTSGYNAEVS	X514	BoNT-D-Hc	14	14aa	mRNA_30cpc_Ctx	3
_____RGGRLIDSSGYGAT__	X27569	BoNT-G-Hc	10	14aa	mRNA_30cpc_SN	3
_____RGGRLIDSSGYGAT__	X27569	BoNT-G-Hc	10	14aa	mRNA_30cpc_Th	2
_____RGGRLIDSSGYGAT__	X27569	BoNT-G-Hc	10	14aa	mRNA_3cpc_Th	1
_____RGGRLIDSSGYGAT__	X27569	BoNT-G-Hc	10	14aa	mRNA_30cpc_Ctx	2
SNAILSLSYRGGRLIDSSGYGA__	X9944	BoNT-G-Hc	1	22aa	mRNA_30cpc_Ctx	1

Peptide TTSEPLPQDPVKLP from APP with cluster number 6585

Peptide TTSEPLPQDPVKLP from APP with cluster number 6585



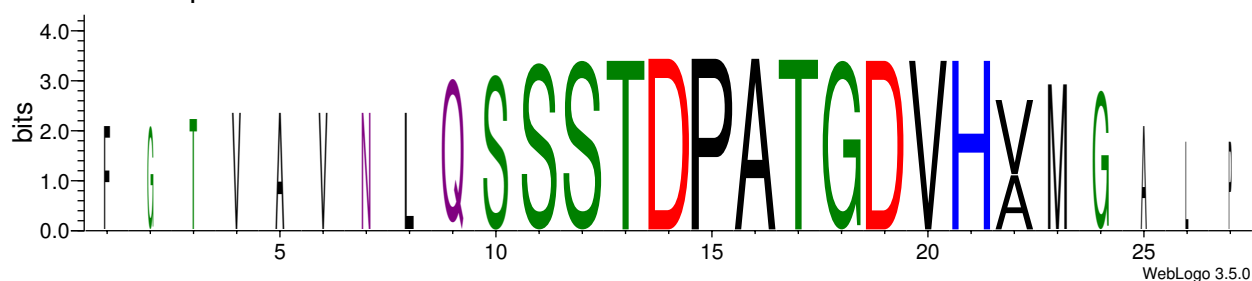
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6585	TTSEPLPQDPVKLP	28	9	5	6	5	0	0

cluster_id	sequence	alignment	sum	mRNA_30cpc_Ctx	mRNA_30cpc_Th	mRNA_30cpc_SN
6585	TTSEPLPQDPVKLP	TTSEPLPQDPVKLP	7	2	2	2
6585	TTSEPLPQDPVKLP	TTSEPLPQDPVKLP	7	2	2	2
6585	DASVDFVAEPVKLP	DASVDFVAEPVKLP	5	3	1	1
6585	SQSLKTTTSEPLPQDPVKLP	SQSLKTTTSEPLPQDPVKLP	2	1	0	1
6585	TSEPLPQDPVKLP	TSEPLPQDPVKLP	1	0	0	0
6585	SVDFVAEPVKLP	SVDFVAEPVKLP	1	0	0	0
6585	QDPVKLP	QDPVKLP	1	0	0	0
6585	QDPIEQPLQASR	QDPIEQPLQASR	1	1	0	0
6585	QDFAQDPSKFTEPI	QDFAQDPSKFTEPI	1	0	0	0
6585	AASKQDFAQDPSKFTEPIKDV	AASKQDFAQDPSKFTEPIKDV	1	0	0	0
6585	AASKQDFAQDPSKF	AASKQDFAQDPSKF	1	0	0	0

alignment	LUThrs	GeneName	start	structure	Group	Score
AASKQDFAQDPSKF	X43437	PV2-VP4	40	14aa	mRNA_30cpc_SN_4wks	1
AASKQDFAQDPSKFTEPIKDV	X43436	PV2-VP4	40	22aa	mRNA_3cpc_Th	1
AASKQDFAQDPSKFTEPIKDV	X43436	PV3-VP1	40	22aa	mRNA_3cpc_Th	1
DASVDFVAEPVKLP	X35811	TMEV-VP-DQ401688.1	14	14aa	mRNA_30cpc_SN	1
DASVDFVAEPVKLP	X35811	TMEV-VP1-M20301.1	14	14aa	mRNA_30cpc_SN	1
DASVDFVAEPVKLP	X35811	TMEV-VP1-U33047.1	14	14aa	mRNA_30cpc_SN	1
DASVDFVAEPVKLP	X35811	TMEV-VP-DQ401688.1	14	14aa	mRNA_30cpc_Th	1
DASVDFVAEPVKLP	X35811	TMEV-VP1-M20301.1	14	14aa	mRNA_30cpc_Th	1
DASVDFVAEPVKLP	X35811	TMEV-VP1-U33047.1	14	14aa	mRNA_30cpc_Th	1
DASVDFVAEPVKLP	X35811	TMEV-VP-DQ401688.1	14	14aa	mRNA_30cpc_Ctx	3
DASVDFVAEPVKLP	X35811	TMEV-VP1-M20301.1	14	14aa	mRNA_30cpc_Ctx	3
DASVDFVAEPVKLP	X35811	TMEV-VP1-U33047.1	14	14aa	mRNA_30cpc_Ctx	3
QDFAQDPSKFTEPI	X19730	PV2-VP4	44	14aa	mRNA_3cpc_Th	1
QDPIEQPLQASR	X19677	HIV-tat-GR17	66	14aa	mRNA_30cpc_Ctx	1
QDPVKLP	X19686	APP	359	14aa	mRNA_3cpc_Th	1
SQSLKTTTSEPLPQDPVKLP	X11343	APP	346	22aa	mRNA_30cpc_SN	1
SQSLKTTTSEPLPQDPVKLP	X11343	APP	346	22aa	mRNA_30cpc_Ctx	1
SVDFVAEPVKLP	X13601	TMEV-VP-DQ401688.1	16	14aa	mRNA_30cpc_Th_4wks	1
SVDFVAEPVKLP	X13601	TMEV-VP1-M20301.1	16	14aa	mRNA_30cpc_Th_4wks	1
SVDFVAEPVKLP	X13601	TMEV-VP1-U33047.1	16	14aa	mRNA_30cpc_Th_4wks	1
TSEPLPQDPVKLP	X6405	APP	353	14aa	mRNA_30cpc_Th_4wks	1
TTSEPLPQDPVKLP	X46781	APP	352	14aaA5	mRNA_30cpc_SN	2
TTSEPLPQDPVKLP	X5969	APP	352	14aa	mRNA_30cpc_Th	1
TTSEPLPQDPVKLP	X46781	APP	352	14aaA5	mRNA_30cpc_Th	1
TTSEPLPQDPVKLP	X46781	APP	352	14aaA5	mRNA_3cpc_Th	1
TTSEPLPQDPVKLP	X46781	APP	352	14aaA5	mRNA_30cpc_Ctx	2
TTSEPLPQDPVKLP	X5968	APP	352	22aa	mRNA_30cpc_SN	2
TTSEPLPQDPVKLP	X5968	APP	352	22aa	mRNA_30cpc_Th	2
TTSEPLPQDPVKLP	X5968	APP	352	22aa	mRNA_3cpc_Th	1
TTSEPLPQDPVKLP	X5968	APP	352	22aa	mRNA_30cpc_Ctx	2

Peptide QSSSTDPATGDVHV from AAV1-VP1 with cluster number 5706

Peptide QSSSTDPATGDVHV from AAV1-VP1 with cluster number 5706



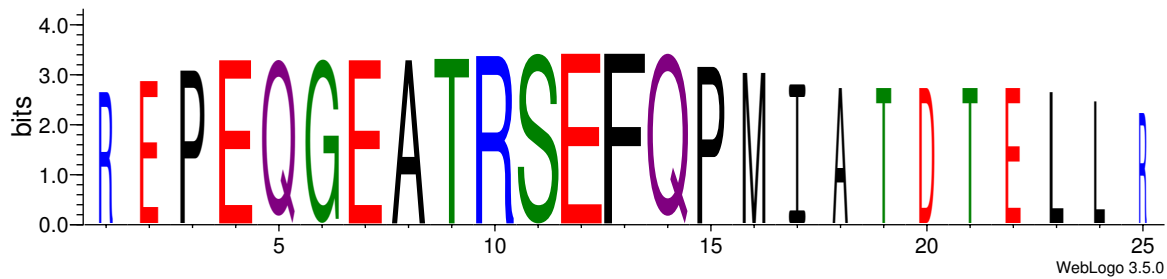
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5706	QSSSTDPATGDVHV	28	9	6	6	5	0	0

cluster_id	sequence	alignment	sum	mRNA_30cpc_Ctx	mRNA_30cpc_Th	mRNA_30cpc_SN
5706	QSSSTDPATGDVHV	-----QSSSTDPATGDVHV-----	9	2	2	1
5706	SSTD PATGDVHAMG	-----SSTD PATGDVHAMG-----	7	2	1	3
5706	FGTVAVNLQSSSTDPATGDVHV	FGTVAVNLQSSSTDPATGDVHV-----	4	1	1	1
5706	STD PATGDVHAMGA	-----STD PATGDVHAMGA-----	2	1	1	0
5706	SSSTD PATGDVHAM	-----SSSTD PATGDVHAM-----	2	1	0	1
5706	DPATGDVHVMGALP	-----DPATGDVHVMGALP-----	2	1	1	0
5706	VAVNLQSSSTDPAT	___VAVNLQSSSTDPAT_____	1	0	0	0
5706	TVAVNLQSSSTDPA	__TVAVNLQSSSTDPA_____	1	1	0	0

alignment	LUThrs	GeneName	start	structure	Group	Score
-----DPATGDVHVMGALP	X34960	AAV1-VP1	590	14aa	mRNA_30cpc_Th	1
-----DPATGDVHVMGALP	X34960	AAV6-VP1	590	14aa	mRNA_30cpc_Th	1
-----DPATGDVHVMGALP	X34960	AAV1-VP1	590	14aa	mRNA_30cpc_Ctx	1
-----DPATGDVHVMGALP	X34960	AAV6-VP1	590	14aa	mRNA_30cpc_Ctx	1
FGTVAVNLQSSSTDPATGDVHV_-----	X75911	AAV1-VP1	577	22aa	mRNA_30cpc_SN	1
FGTVAVNLQSSSTDPATGDVHV_-----	X75911	AAV6-VP1	577	22aa	mRNA_30cpc_SN	1
FGTVAVNLQSSSTDPATGDVHV_-----	X75911	AAV1-VP1	577	22aa	mRNA_30cpc_Th	1
FGTVAVNLQSSSTDPATGDVHV_-----	X75911	AAV6-VP1	577	22aa	mRNA_30cpc_Th	1
FGTVAVNLQSSSTDPATGDVHV_-----	X75911	AAV1-VP1	577	22aa	mRNA_30cpc_Ctx	1
FGTVAVNLQSSSTDPATGDVHV_-----	X75911	AAV6-VP1	577	22aa	mRNA_30cpc_Ctx	1
FGTVAVNLQSSSTDPATGDVHV_-----	X75911	AAV1-VP1	577	22aa	mRNA_30cpc_Th_4wks	1
FGTVAVNLQSSSTDPATGDVHV_-----	X75911	AAV6-VP1	577	22aa	mRNA_30cpc_Th_4wks	1
-----QSSSTDPATGDVHV_-----	X18756	AAV1-VP1	585	14aa	mRNA_30cpc_SN	1
-----QSSSTDPATGDVHV_-----	X18756	AAV6-VP1	585	14aa	mRNA_30cpc_SN	1
-----QSSSTDPATGDVHV_-----	X18756	AAV1-VP1	585	14aa	mRNA_30cpc_Th	2
-----QSSSTDPATGDVHV_-----	X18756	AAV6-VP1	585	14aa	mRNA_30cpc_Th	2
-----QSSSTDPATGDVHV_-----	X18756	AAV1-VP1	585	14aa	mRNA_3cpc_Th	3
-----QSSSTDPATGDVHV_-----	X18756	AAV6-VP1	585	14aa	mRNA_3cpc_Th	3
-----QSSSTDPATGDVHV_-----	X18756	AAV1-VP1	585	14aa	mRNA_30cpc_Ctx	2
-----QSSSTDPATGDVHV_-----	X18756	AAV6-VP1	585	14aa	mRNA_30cpc_Ctx	2
-----QSSSTDPATGDVHV_-----	X18756	AAV1-VP1	585	14aa	mRNA_3cpc_Th_4wks	1
-----QSSSTDPATGDVHV_-----	X18756	AAV6-VP1	585	14aa	mRNA_3cpc_Th_4wks	1
-----SSSTDPATGDVHAM_-----	X10626	AAV1-VP1	586	14aa	mRNA_30cpc_SN	1
-----SSSTDPATGDVHAM_-----	X10626	AAV6-VP1	586	14aa	mRNA_30cpc_SN	1
-----SSSTDPATGDVHAM_-----	X10626	AAV1-VP1	586	14aa	mRNA_30cpc_Ctx	1
-----SSSTDPATGDVHAM_-----	X10626	AAV6-VP1	586	14aa	mRNA_30cpc_Ctx	1
-----SSTDPATGDVHAMG_-----	X10606	AAV1-VP1	587	14aa	mRNA_30cpc_SN	3
-----SSTDPATGDVHAMG_-----	X10606	AAV6-VP1	587	14aa	mRNA_30cpc_SN	3
-----SSTDPATGDVHAMG_-----	X10606	AAV1-VP1	587	14aa	mRNA_30cpc_Th	1
-----SSTDPATGDVHAMG_-----	X10606	AAV6-VP1	587	14aa	mRNA_30cpc_Th	1
-----SSTDPATGDVHAMG_-----	X10606	AAV1-VP1	587	14aa	mRNA_3cpc_Th	1
-----SSTDPATGDVHAMG_-----	X10606	AAV6-VP1	587	14aa	mRNA_3cpc_Th	1
-----SSTDPATGDVHAMG_-----	X10606	AAV1-VP1	587	14aa	mRNA_30cpc_Ctx	2
-----SSTDPATGDVHAMG_-----	X10606	AAV6-VP1	587	14aa	mRNA_30cpc_Ctx	2
-----STD PATGDVHAMGA_-----	X10423	AAV1-VP1	588	14aa	mRNA_30cpc_Th	1
-----STD PATGDVHAMGA_-----	X10423	AAV6-VP1	588	14aa	mRNA_30cpc_Th	1
-----STD PATGDVHAMGA_-----	X10423	AAV1-VP1	588	14aa	mRNA_30cpc_Ctx	1
-----STD PATGDVHAMGA_-----	X10423	AAV6-VP1	588	14aa	mRNA_30cpc_Ctx	1
__TVAVNLQSSSTDPA_-----	X9258	AAV1-VP1	579	14aa	mRNA_30cpc_Ctx	1
__TVAVNLQSSSTDPA_-----	X9258	AAV6-VP1	579	14aa	mRNA_30cpc_Ctx	1
__VAVNLQSSSTDPAT_-----	X59016	AAV1-VP1	580	14aaA5	mRNA_3cpc_Th	1
__VAVNLQSSSTDPAT_-----	X59016	AAV6-VP1	580	14aaA5	mRNA_3cpc_Th	1

Peptide REPEQGEATRSEFQ from NT3 with cluster number 6572

Peptide REPEQGEATRSEFQ from NT3 with cluster number 6572



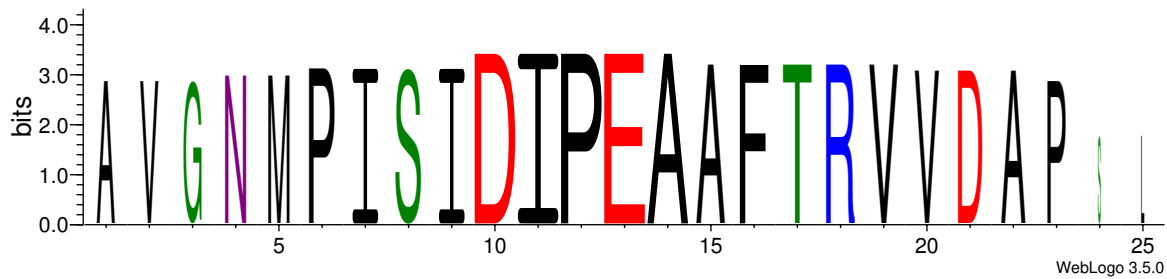
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6572	REPEQGEATRSEFQ	27	5	6	6	7	0	1

cluster_id	sequence	alignment	sum	mRNA_30cpc_Ctx	mRNA_30cpc_Th	mRNA_30cpc_SN
6572	REPEQGEATRSEFQ	REPEQGEATRSEFQ_____	9	2	2	2
6572	EQGEATRSEFQPMIATDELLR	___EQGEATRSEFQPMIATDELLR	5	1	1	2
6572	PEQGEATRSEFQPM	__PEQGEATRSEFQPM_____	4	0	0	0
6572	EPEQGEATRSEFQP	__EPEQGEATRSEFQP_____	3	0	0	2
6572	SEFQPMIATDELL	_____SEFQPMIATDELL_	2	0	1	0
6572	RSEFQPMIATDELL	_____RSEFQPMIATDELL_	2	1	1	0
6572	TRSEFQPMIATDE	_____TRSEFQPMIATDE__	1	1	0	0
6572	EQGEATRSEFQPMI	___EQGEATRSEFQPMI_____	1	0	1	0

alignment	LUThrs	GeneName	start	structure	Group	Score
_EPEQGEATRSEFQP_____	X37862	NT3	53	14aa	mRNA_30cpc_SN	2
_EPEQGEATRSEFQP_____	X37862	NT3	53	14aa	mRNA_30cpc_Th_4wks	1
___EQGEATRSEFQPMI_____	X55039	NT3	55	14aaA5	mRNA_30cpc_Th	1
___EQGEATRSEFQPMIATDELLR	X37743	NT3	55	22aa	mRNA_30cpc_SN	2
___EQGEATRSEFQPMIATDELLR	X37743	NT3	55	22aa	mRNA_30cpc_Th	1
___EQGEATRSEFQPMIATDELLR	X37743	NT3	55	22aa	mRNA_3cpc_Th	1
___EQGEATRSEFQPMIATDELLR	X37743	NT3	55	22aa	mRNA_30cpc_Ctx	1
__PEQGEATRSEFQPM_____	X23116	NT3	54	14aa	mRNA_3cpc_SN	1
__PEQGEATRSEFQPM_____	X23116	NT3	54	14aa	mRNA_3cpc_Th	3
REPEQGEATRSEFQ_____	X26899	NT3	52	14aa	mRNA_30cpc_SN	2
REPEQGEATRSEFQ_____	X26899	NT3	52	14aa	mRNA_30cpc_Th	2
REPEQGEATRSEFQ_____	X26899	NT3	52	14aa	mRNA_3cpc_Th	2
REPEQGEATRSEFQ_____	X26899	NT3	52	14aa	mRNA_30cpc_Ctx	2
REPEQGEATRSEFQ_____	X26899	NT3	52	14aa	mRNA_30cpc_Th_4wks	1
_____RSEFQPMIATDELL__	X25281	NT3	61	14aa	mRNA_30cpc_Th	1
_____RSEFQPMIATDELL__	X25281	NT3	61	14aa	mRNA_30cpc_Ctx	1
_____SEFQPMIATDELL_	X12761	NT3	62	14aa	mRNA_30cpc_Th	1
_____SEFQPMIATDELL_	X12761	NT3	62	14aa	mRNA_3cpc_Th	1
_____TRSEFQPMIATDE__	X7524	NT3	60	14aa	mRNA_30cpc_Ctx	1

Peptide DIPEAAFTRVVDAP from CHIKV-Sp-1 with cluster number 4298

Peptide DIPEAAFTRVVDAP from CHIKV-Sp-1 with cluster number 4298



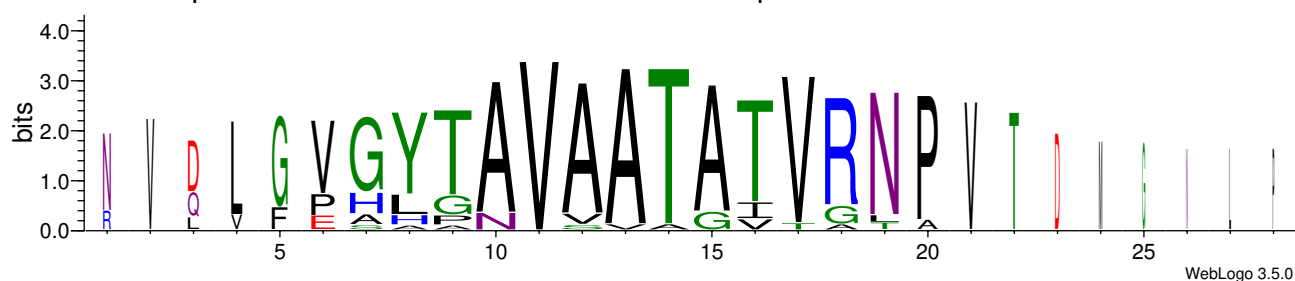
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4298	DIPEAAFTRVVDAP	27	9	11	3	4	0	0

cluster_id	sequence	alignment	sum	mRNA_30cpc_Ctx	mRNA_30cpc_Th	mRNA_30cpc_SN
4298	DIPEAAFTRVVDAP	-----DIPEAAFTRVVDAP--	10	4	4	1
4298	AVGNMPISIDIPEA	AVGNMPISIDIPEA-----	8	3	3	1
4298	AVGNMPISIDIPEAAFTRVDA	AVGNMPISIDIPEAAFTRVDA---	4	1	1	1
4298	PISIDIPEAAFTRV	-----PISIDIPEAAFTRV-----	3	0	2	0
4298	NMPISIDIPEAAFTRVVDAPSL	---NMPISIDIPEAAFTRVVDAPSL	2	1	1	0

alignment	LUTnrs	GeneName	start	structure	Group	Score
AVGNMPISIDIPEA-----	X56814	CHIKV-Sp-1	1081	14aaA5	mRNA_30cpc_SN	1
AVGNMPISIDIPEA-----	X44622	CHIKV-Sp-1	1081	14aa	mRNA_30cpc_Th	1
AVGNMPISIDIPEA-----	X56814	CHIKV-Sp-1	1081	14aaA5	mRNA_30cpc_Th	2
AVGNMPISIDIPEA-----	X56814	CHIKV-Sp-1	1081	14aaA5	mRNA_3cpc_Th	1
AVGNMPISIDIPEA-----	X44622	CHIKV-Sp-1	1081	14aa	mRNA_30cpc_Ctx	1
AVGNMPISIDIPEA-----	X56814	CHIKV-Sp-1	1081	14aaA5	mRNA_30cpc_Ctx	2
AVGNMPISIDIPEAAFTRVDA---	X44623	CHIKV-Sp-1	1081	22aa	mRNA_30cpc_SN	1
AVGNMPISIDIPEAAFTRVDA---	X44623	CHIKV-Sp-1	1081	22aa	mRNA_30cpc_Th	1
AVGNMPISIDIPEAAFTRVDA---	X44623	CHIKV-Sp-1	1081	22aa	mRNA_3cpc_Th	1
AVGNMPISIDIPEAAFTRVDA---	X44623	CHIKV-Sp-1	1081	22aa	mRNA_30cpc_Ctx	1
-----DIPEAAFTRVVDAP--	X34522	CHIKV-Sp-1	1090	14aa	mRNA_30cpc_SN	1
-----DIPEAAFTRVVDAP--	X34522	CHIKV-Sp-1	1090	14aa	mRNA_30cpc_Th	4
-----DIPEAAFTRVVDAP--	X34522	CHIKV-Sp-1	1090	14aa	mRNA_3cpc_Th	1
-----DIPEAAFTRVVDAP--	X34522	CHIKV-Sp-1	1090	14aa	mRNA_30cpc_Ctx	4
___NMPISIDIPEAAFTRVVDAPSL	X975	CHIKV-Sp-1	1084	22aa	mRNA_30cpc_Th	1
___NMPISIDIPEAAFTRVVDAPSL	X975	CHIKV-Sp-1	1084	22aa	mRNA_30cpc_Ctx	1
----PISIDIPEAAFTRV-----	X21409	CHIKV-Sp-1	1086	14aa	mRNA_30cpc_Th	2
----PISIDIPEAAFTRV-----	X21409	CHIKV-Sp-1	1086	14aa	mRNA_3cpc_Th	1

Peptide VGYTAVAATATVRN from HSV-2-pUL19 with cluster number 6505

Peptide VGYTAVAATATVRN from HSV-2-pUL19 with cluster number 6505

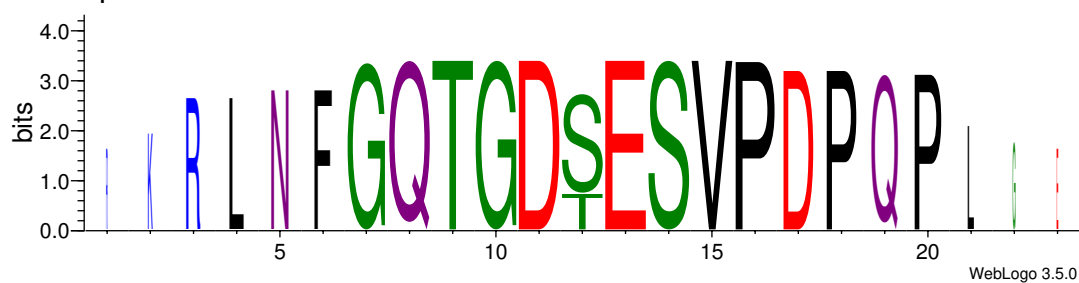


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6505	VGYTAVAATATVRN	26	7	7	6	6	0	0

cluster_id	sequence	alignment	sum	mRNA_30cpc_Ctx	mRNA_30cpc_Th	mRNA_30cpc_SN
6505	VGYTAVAATATVRN	_____VGYTAVAATATVRN_____	5	1	2	1
6505	GYTAVAATATVRNP	_____GYTAVAATATVRNP_____	3	1	1	1
6505	YTAVAATATVRNPV	_____YTAVAATATVRNPV_____	2	0	0	1
6505	QLFEAHPNVAATAV	__QLFEAHPNVAATAV_____	2	0	1	0
6505	NVDLGVGYTAVAATATVRNPVT	NVDLGVGYTAVAATATVRNPVT_____	2	1	1	0
6505	NVDLGVGYTAVAAT	NVDLGVGYTAVAAT_____	2	0	1	0
6505	GPHLGAVAATGIVG	___GPHLGAVAATGIVG_____	2	1	0	1
6505	TAVAATATVRNPVT	_____TAVAATATVRNPVT_____	1	0	0	1
6505	SAANVSVAATTATP	_____SAANVSVAATTATP_____	1	1	0	0
6505	RVLVGPHLGAVAAT	RVLVGPHLGAVAAT_____	1	0	1	0
6505	HLGAVAATGIVGLA	_____HLGAVAATGIVGLA_____	1	0	0	0
6505	GYTAVAATATVRNPVTDGMGNLP	_____GYTAVAATATVRNPVTDGMGNLP_____	1	1	0	0
6505	GVGYTAVVATATVR	_____GVGYTAVVATATVR_____	1	0	0	0
6505	AVVATATVRNPVTD	_____AVVATATVRNPVTD_____	1	1	0	0
6505	AATATVRNPVTDGM	_____AATATVRNPVTDGM_____	1	0	0	1

Peptide GQTGDSESVDPDPQP from AAV1-VP1 with cluster number 6326

Peptide GQTGDSESVDPDPQP from AAV1-VP1 with cluster number 6326



cluster_id	main_sequence	sum	mRNA_30cpc_Ctx	mRNA_30cpc_Th	mRNA_30cpc_SN	mRNA_3cpc_Th	mRNA_3cpc_Ctx	mRNA_3cpc_SN
6326	GQTGDSESVDPDPQP	26	6	6	5	4	2	1

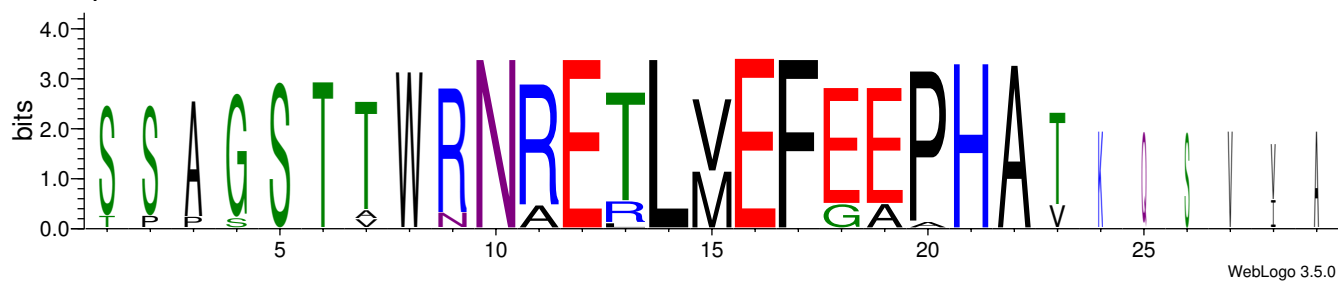
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6326	GQTGDSESVDPDPQP	_____GQTGDSESVDPDPQP____	13	2	2	2
6326	RLNFGQTGDTEVP	__RLNFGQTGDTEVP_____	6	2	1	3
6326	QTGDSESVDPQPPL	_____QTGDSESVDPQPPL__	2	0	1	0
6326	RKRLNFGQTGDSESVDPQPPLG	RKRLNFGQTGDSESVDPQPPLG_	1	1	0	0
6326	NFGQTGDTEVPDP	____NFGQTGDTEVPDP_____	1	0	0	0
6326	NFGQTGDSEVPDP	____NFGQTGDSEVPDP_____	1	0	1	0
6326	KRLNFGQTGDSESVDPQPPLGE	_KRLNFGQTGDSESVDPQPPLGE	1	0	1	0
6326	KRLNFGQTGDSESV	_KRLNFGQTGDSESV_____	1	1	0	0

alignment	LUThrs	GeneName	start	structure	Group	Score
-----GQTGDSESVDPDPQP---	X62390	AAV1-VP1	174	14aa	mRNA_30cpc_SN	2
-----GQTGDSESVDPDPQP---	X62390	AAV6-VP1	174	14aa	mRNA_30cpc_SN	2
-----GQTGDSESVDPDPQP---	X62390	AAV8-VP1	175	14aa	mRNA_30cpc_SN	2
-----GQTGDSESVDPDPQP---	X62390	AAV9-VP1	174	14aa	mRNA_30cpc_SN	2
-----GQTGDSESVDPDPQP---	X62390	AAV1-VP1	174	14aa	mRNA_3cpc_SN	1
-----GQTGDSESVDPDPQP---	X62390	AAV6-VP1	174	14aa	mRNA_3cpc_SN	1
-----GQTGDSESVDPDPQP---	X62390	AAV8-VP1	175	14aa	mRNA_3cpc_SN	1
-----GQTGDSESVDPDPQP---	X62390	AAV9-VP1	174	14aa	mRNA_3cpc_SN	1
-----GQTGDSESVDPDPQP---	X62390	AAV1-VP1	174	14aa	mRNA_30cpc_Th	2
-----GQTGDSESVDPDPQP---	X62390	AAV6-VP1	174	14aa	mRNA_30cpc_Th	2
-----GQTGDSESVDPDPQP---	X62390	AAV8-VP1	175	14aa	mRNA_30cpc_Th	2
-----GQTGDSESVDPDPQP---	X62390	AAV9-VP1	174	14aa	mRNA_30cpc_Th	2
-----GQTGDSESVDPDPQP---	X62390	AAV1-VP1	174	14aa	mRNA_3cpc_Th	4
-----GQTGDSESVDPDPQP---	X62390	AAV6-VP1	174	14aa	mRNA_3cpc_Th	4
-----GQTGDSESVDPDPQP---	X62390	AAV8-VP1	175	14aa	mRNA_3cpc_Th	4
-----GQTGDSESVDPDPQP---	X62390	AAV9-VP1	174	14aa	mRNA_3cpc_Th	4
-----GQTGDSESVDPDPQP---	X62390	AAV1-VP1	174	14aa	mRNA_30cpc_Ctx	2
-----GQTGDSESVDPDPQP---	X62390	AAV6-VP1	174	14aa	mRNA_30cpc_Ctx	2
-----GQTGDSESVDPDPQP---	X62390	AAV8-VP1	175	14aa	mRNA_30cpc_Ctx	2
-----GQTGDSESVDPDPQP---	X62390	AAV9-VP1	174	14aa	mRNA_30cpc_Ctx	2
-----GQTGDSESVDPDPQP---	X62390	AAV1-VP1	174	14aa	mRNA_3cpc_Ctx	2
-----GQTGDSESVDPDPQP---	X62390	AAV6-VP1	174	14aa	mRNA_3cpc_Ctx	2
-----GQTGDSESVDPDPQP---	X62390	AAV8-VP1	175	14aa	mRNA_3cpc_Ctx	2
-----GQTGDSESVDPDPQP---	X62390	AAV9-VP1	174	14aa	mRNA_3cpc_Ctx	2
_KRLNFGQTGDSESV-----	X4104	AAV1-VP1	169	14aa	mRNA_30cpc_Ctx	1
_KRLNFGQTGDSESV-----	X4104	AAV6-VP1	169	14aa	mRNA_30cpc_Ctx	1
_KRLNFGQTGDSESV-----	X4104	AAV8-VP1	170	14aa	mRNA_30cpc_Ctx	1
_KRLNFGQTGDSESV-----	X4104	AAV9-VP1	169	14aa	mRNA_30cpc_Ctx	1
_KRLNFGQTGDSESVDPDPQPLGE	X4103	AAV1-VP1	169	22aa	mRNA_30cpc_Th	1
_KRLNFGQTGDSESVDPDPQPLGE	X4103	AAV6-VP1	169	22aa	mRNA_30cpc_Th	1
_KRLNFGQTGDSESVDPDPQPLGE	X4103	AAV8-VP1	170	22aa	mRNA_30cpc_Th	1
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___NFGQTGDSESVDPDP_____	X2978	AAV6-VP1	172	14aa	mRNA_30cpc_Th	1
___NFGQTGDSESVDPDP_____	X2978	AAV8-VP1	173	14aa	mRNA_30cpc_Th	1
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___NFGQTGDTESVDPDP_____	X2976	AAV6-VP1	172	14aa	mRNA_30cpc_Ctx_4wks	1
___NFGQTGDTESVDPDP_____	X2976	AAV8-VP1	173	14aa	mRNA_30cpc_Ctx_4wks	1
___NFGQTGDTESVDPDP_____	X2976	AAV9-VP1	172	14aa	mRNA_30cpc_Ctx_4wks	1
-----QTGDSESVDPDPQPL__	X18701	AAV1-VP1	175	14aa	mRNA_30cpc_Th	1
-----QTGDSESVDPDPQPL__	X18701	AAV6-VP1	175	14aa	mRNA_30cpc_Th	1
-----QTGDSESVDPDPQPL__	X18701	AAV8-VP1	176	14aa	mRNA_30cpc_Th	1
-----QTGDSESVDPDPQPL__	X18701	AAV9-VP1	175	14aa	mRNA_30cpc_Th	1
-----QTGDSESVDPDPQPL__	X18701	AAV1-VP1	175	14aa	mRNA_30cpc_Th_4wks	1
-----QTGDSESVDPDPQPL__	X18701	AAV6-VP1	175	14aa	mRNA_30cpc_Th_4wks	1
-----QTGDSESVDPDPQPL__	X18701	AAV8-VP1	176	14aa	mRNA_30cpc_Th_4wks	1

alignment	LUThrs	GeneName	start	structure	Group	Score
_____QTGDSESVDPDPQPL__	X18701	AAV9-VP1	175	14aa	mRNA_30cpc_Th_4wks	1
RKRLNFGQTGDSESVDPDPQPLG_	X24884	AAV1-VP1	168	22aa	mRNA_30cpc_Ctx	1
RKRLNFGQTGDSESVDPDPQPLG_	X24884	AAV6-VP1	168	22aa	mRNA_30cpc_Ctx	1
RKRLNFGQTGDSESVDPDPQPLG_	X24884	AAV8-VP1	169	22aa	mRNA_30cpc_Ctx	1
RKRLNFGQTGDSESVDPDPQPLG_	X24884	AAV9-VP1	168	22aa	mRNA_30cpc_Ctx	1
__RLNFGQTGDATESVP_____	X26310	AAV1-VP1	170	14aa	mRNA_30cpc_SN	3
__RLNFGQTGDATESVP_____	X26310	AAV6-VP1	170	14aa	mRNA_30cpc_SN	3
__RLNFGQTGDATESVP_____	X26310	AAV8-VP1	171	14aa	mRNA_30cpc_SN	3
__RLNFGQTGDATESVP_____	X26310	AAV9-VP1	170	14aa	mRNA_30cpc_SN	3
__RLNFGQTGDATESVP_____	X26310	AAV1-VP1	170	14aa	mRNA_30cpc_Th	1
__RLNFGQTGDATESVP_____	X26310	AAV6-VP1	170	14aa	mRNA_30cpc_Th	1
__RLNFGQTGDATESVP_____	X26310	AAV8-VP1	171	14aa	mRNA_30cpc_Th	1
__RLNFGQTGDATESVP_____	X26310	AAV9-VP1	170	14aa	mRNA_30cpc_Th	1
__RLNFGQTGDATESVP_____	X26310	AAV1-VP1	170	14aa	mRNA_30cpc_Ctx	2
__RLNFGQTGDATESVP_____	X26310	AAV6-VP1	170	14aa	mRNA_30cpc_Ctx	2
__RLNFGQTGDATESVP_____	X26310	AAV8-VP1	171	14aa	mRNA_30cpc_Ctx	2
__RLNFGQTGDATESVP_____	X26310	AAV9-VP1	170	14aa	mRNA_30cpc_Ctx	2

Peptide SSAGSTTWRNRETLMEFEEPHA from WNV-E-AZ10-918 with cluster number 5667

Peptide SSAGSTTWRNRETLMEFEEPHA from WNV-E-AZ10-918 with cluster number 5667



cluster_id	main_sequence	sum	mRNA_30cpc_Ctx	mRNA_30cpc_Th	mRNA_30cpc_SN	mRNA_3cpc_Th	mRNA_3cpc_Ctx	mRNA_3cpc_SN
5667	SSAGSTTWRNRETLMEFEEPHA	26	7	8	4	6	0	0

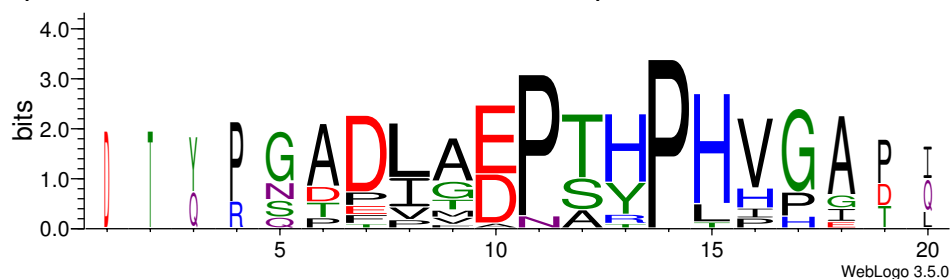
cluster_id	sequence	alignment	sum	mRNA_30cpc_Ctx	mRNA_30cpc_Th	mRNA_30cpc_SN
5667	SSAGSTTWRNRETLMEFEEPHA	SSAGSTTWRNRETLMEFEEPHA_____	9	3	3	2
5667	NRETLVEFEEPHAT	_____NRETLVEFEEPHAT	5	2	1	1
5667	WRNRETLVEFEEPHATKQSVVA	_____WRNRETLVEFEEPHATKQSVVA	2	1	1	0
5667	NAERLVEFGAPHAV	_____NAERLVEFGAPHAV	2	0	1	0
5667	GSTTWRNRETLVEF	___GSTTWRNRETLVEF_____	2	1	1	0
5667	WNAERLVEFGAPH	_____WNAERLVEFGAPH	1	0	0	0
5667	VWRNRETLMEFEET	_____VWRNRETLMEFEET	1	0	1	0
5667	TPPSSTAWRNRELLMEFEEAHA	TPPSSTAWRNRELLMEFEEAHA_____	1	0	0	0
5667	NNAERLVEFGAPHA	_____NNAERLVEFGAPHA	1	0	0	0
5667	EFEETHATKQSVIA	_____EFEETHATKQSVIA	1	0	0	1
5667	AGSTTWRNRETLVE	__AGSTTWRNRETLVE_____	1	0	0	0

alignment	LUThrs	GeneName	start	structure	Group	Score
__AGSTTWRNRETLVE_____	X43988	WNV-E-AZ10-918	228	14aa	mRNA_3cpc_Th	1
__AGSTTWRNRETLVE_____	X43988	WNV-E-ArD76104	224	14aa	mRNA_3cpc_Th	1
__AGSTTWRNRETLVE_____	X43988	WNV-E-H-442	228	14aa	mRNA_3cpc_Th	1
_____EFEEPHATKQSVIA	X39715	JEV-E-BN19	241	14aa	mRNA_30cpc_SN	1
_____EFEEPHATKQSVIA	X39715	JEV-E-KE-093	241	14aa	mRNA_30cpc_SN	1
_____EFEEPHATKQSVIA	X39715	JEV-E-SA14-5-3	241	14aa	mRNA_30cpc_SN	1
_____EFEEPHATKQSVIA	X39715	JEV-E-ThCMAR4492	241	14aa	mRNA_30cpc_SN	1
_____EFEEPHATKQSVIA	X39715	WNV-E-AZ10-918	241	14aa	mRNA_30cpc_SN	1
_____EFEEPHATKQSVIA	X39715	WNV-E-ArD76104	237	14aa	mRNA_30cpc_SN	1
_____EFEEPHATKQSVIA	X39715	WNV-E-H-442	241	14aa	mRNA_30cpc_SN	1
__GSTTWRNRETLVEF_____	X61736	WNV-E-AZ10-918	229	14aa	mRNA_30cpc_Th	1
__GSTTWRNRETLVEF_____	X61736	WNV-E-ArD76104	225	14aa	mRNA_30cpc_Th	1
__GSTTWRNRETLVEF_____	X61736	WNV-E-H-442	229	14aa	mRNA_30cpc_Th	1
__GSTTWRNRETLVEF_____	X61736	WNV-E-AZ10-918	229	14aa	mRNA_30cpc_Ctx	1
__GSTTWRNRETLVEF_____	X61736	WNV-E-ArD76104	225	14aa	mRNA_30cpc_Ctx	1
__GSTTWRNRETLVEF_____	X61736	WNV-E-H-442	229	14aa	mRNA_30cpc_Ctx	1
_____NAERLVEFGAPHAV_____	X77107	TBEV-E-4387-B7	237	14aaG4S	mRNA_30cpc_Th	1
_____NAERLVEFGAPHAV_____	X77107	TBEV-E-80	237	14aaG4S	mRNA_30cpc_Th	1
_____NAERLVEFGAPHAV_____	X77107	TBEV-E-Simo-9	193	14aaG4S	mRNA_30cpc_Th	1
_____NAERLVEFGAPHAV_____	X77107	TBEV-E-4387-B7	237	14aaG4S	mRNA_3cpc_Th	1
_____NAERLVEFGAPHAV_____	X77107	TBEV-E-80	237	14aaG4S	mRNA_3cpc_Th	1
_____NAERLVEFGAPHAV_____	X77107	TBEV-E-Simo-9	193	14aaG4S	mRNA_3cpc_Th	1
_____NNAERLVEFGAPHA_____	X193	TBEV-E-4387-B7	236	14aa	mRNA_3cpc_Th	1
_____NNAERLVEFGAPHA_____	X193	TBEV-E-80	236	14aa	mRNA_3cpc_Th	1
_____NNAERLVEFGAPHA_____	X193	TBEV-E-Simo-9	192	14aa	mRNA_3cpc_Th	1
_____NRETLVEFEEPHAT_____	X1499	WNV-E-AZ10-918	235	14aa	mRNA_30cpc_SN	1
_____NRETLVEFEEPHAT_____	X1499	WNV-E-ArD76104	231	14aa	mRNA_30cpc_SN	1
_____NRETLVEFEEPHAT_____	X1499	WNV-E-H-442	235	14aa	mRNA_30cpc_SN	1
_____NRETLVEFEEPHAT_____	X1499	WNV-E-AZ10-918	235	14aa	mRNA_30cpc_Th	1
_____NRETLVEFEEPHAT_____	X1499	WNV-E-ArD76104	231	14aa	mRNA_30cpc_Th	1
_____NRETLVEFEEPHAT_____	X1499	WNV-E-H-442	235	14aa	mRNA_30cpc_Th	1
_____NRETLVEFEEPHAT_____	X1499	WNV-E-AZ10-918	235	14aa	mRNA_3cpc_Th	1
_____NRETLVEFEEPHAT_____	X1499	WNV-E-ArD76104	231	14aa	mRNA_3cpc_Th	1
_____NRETLVEFEEPHAT_____	X1499	WNV-E-H-442	235	14aa	mRNA_3cpc_Th	1
_____NRETLVEFEEPHAT_____	X1499	WNV-E-AZ10-918	235	14aa	mRNA_30cpc_Ctx	2
_____NRETLVEFEEPHAT_____	X1499	WNV-E-ArD76104	231	14aa	mRNA_30cpc_Ctx	2
_____NRETLVEFEEPHAT_____	X1499	WNV-E-H-442	235	14aa	mRNA_30cpc_Ctx	2
SSAGSTTWRNRETLMEFEEPHA_____	X10815	WNV-E-AZ10-918	226	22aa	mRNA_30cpc_SN	2
SSAGSTTWRNRETLMEFEEPHA_____	X10815	WNV-E-ArD76104	222	22aa	mRNA_30cpc_SN	2
SSAGSTTWRNRETLMEFEEPHA_____	X10815	WNV-E-H-442	226	22aa	mRNA_30cpc_SN	2
SSAGSTTWRNRETLMEFEEPHA_____	X10815	WNV-E-AZ10-918	226	22aa	mRNA_30cpc_Th	3
SSAGSTTWRNRETLMEFEEPHA_____	X10815	WNV-E-ArD76104	222	22aa	mRNA_30cpc_Th	3
SSAGSTTWRNRETLMEFEEPHA_____	X10815	WNV-E-H-442	226	22aa	mRNA_30cpc_Th	3
SSAGSTTWRNRETLMEFEEPHA_____	X10815	WNV-E-AZ10-918	226	22aa	mRNA_3cpc_Th	1
SSAGSTTWRNRETLMEFEEPHA_____	X10815	WNV-E-ArD76104	222	22aa	mRNA_3cpc_Th	1
SSAGSTTWRNRETLMEFEEPHA_____	X10815	WNV-E-H-442	226	22aa	mRNA_3cpc_Th	1
SSAGSTTWRNRETLMEFEEPHA_____	X10815	WNV-E-AZ10-918	226	22aa	mRNA_30cpc_Ctx	3

alignment	LUThrs	GeneName	start	structure	Group	Score
SSAGSTTWRNRETLMEFEEPHA_____	X10815	WNV-E-ArD76104	222	22aa	mRNA_30cpc_Ctx	3
SSAGSTTWRNRETLMEFEEPHA_____	X10815	WNV-E-H-442	226	22aa	mRNA_30cpc_Ctx	3
TPPSSTAWRNRELLMEFEEAHA_____	X7244	JEV-E-BN19	226	22aa	mRNA_3cpc_Th	1
TPPSSTAWRNRELLMEFEEAHA_____	X7244	JEV-E-KE-093	226	22aa	mRNA_3cpc_Th	1
TPPSSTAWRNRELLMEFEEAHA_____	X7244	JEV-E-SA14-5-3	226	22aa	mRNA_3cpc_Th	1
TPPSSTAWRNRELLMEFEEAHA_____	X7244	JEV-E-ThCMAr4492	226	22aa	mRNA_3cpc_Th	1
_____VWRNRETLMEFEEP_____	X59279	WNV-E-AZ10-918	232	14aaA5	mRNA_30cpc_Th	1
_____VWRNRETLMEFEEP_____	X59279	WNV-E-ArD76104	228	14aaA5	mRNA_30cpc_Th	1
_____VWRNRETLMEFEEP_____	X59279	WNV-E-H-442	232	14aaA5	mRNA_30cpc_Th	1
_____WNAERLVEFGAPH_____	X60239	TBEV-E-4387-B7	235	14aaA5	mRNA_30cpc_Ctx_4wks	1
_____WNAERLVEFGAPH_____	X60239	TBEV-E-80	235	14aaA5	mRNA_30cpc_Ctx_4wks	1
_____WNAERLVEFGAPH_____	X60239	TBEV-E-Simo-9	191	14aaA5	mRNA_30cpc_Ctx_4wks	1
_____WRNRETLVEFEEPHATKQSVVA	X73771	JEV-E-BN19	233	22aa	mRNA_30cpc_Th	1
_____WRNRETLVEFEEPHATKQSVVA	X73771	JEV-E-KE-093	233	22aa	mRNA_30cpc_Th	1
_____WRNRETLVEFEEPHATKQSVVA	X73771	JEV-E-SA14-5-3	233	22aa	mRNA_30cpc_Th	1
_____WRNRETLVEFEEPHATKQSVVA	X73771	JEV-E-ThCMAr4492	233	22aa	mRNA_30cpc_Th	1
_____WRNRETLVEFEEPHATKQSVVA	X73771	WNV-E-AZ10-918	233	22aa	mRNA_30cpc_Th	1
_____WRNRETLVEFEEPHATKQSVVA	X73771	WNV-E-ArD76104	229	22aa	mRNA_30cpc_Th	1
_____WRNRETLVEFEEPHATKQSVVA	X73771	WNV-E-H-442	233	22aa	mRNA_30cpc_Th	1
_____WRNRETLVEFEEPHATKQSVVA	X73771	JEV-E-BN19	233	22aa	mRNA_30cpc_Ctx	1
_____WRNRETLVEFEEPHATKQSVVA	X73771	JEV-E-KE-093	233	22aa	mRNA_30cpc_Ctx	1
_____WRNRETLVEFEEPHATKQSVVA	X73771	JEV-E-SA14-5-3	233	22aa	mRNA_30cpc_Ctx	1
_____WRNRETLVEFEEPHATKQSVVA	X73771	JEV-E-ThCMAr4492	233	22aa	mRNA_30cpc_Ctx	1
_____WRNRETLVEFEEPHATKQSVVA	X73771	WNV-E-AZ10-918	233	22aa	mRNA_30cpc_Ctx	1
_____WRNRETLVEFEEPHATKQSVVA	X73771	WNV-E-ArD76104	229	22aa	mRNA_30cpc_Ctx	1
_____WRNRETLVEFEEPHATKQSVVA	X73771	WNV-E-H-442	233	22aa	mRNA_30cpc_Ctx	1

Peptide GADLAEPTHPHVGA from HSV-1-pUS8 with cluster number 6545

Peptide GADLAEPTHPHVGA from HSV-1-pUS8 with cluster number 6



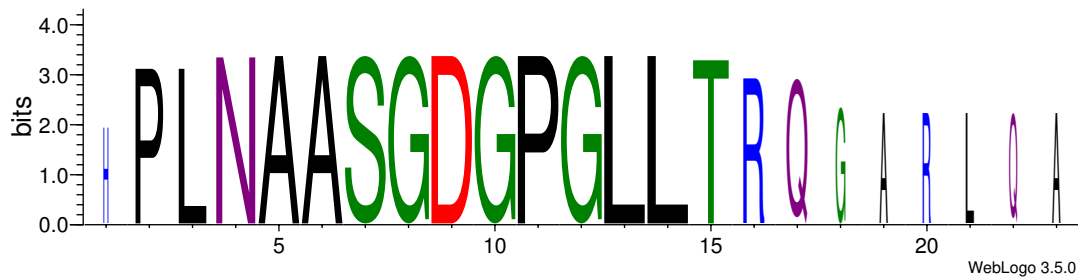
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6545	GADLAEPTHPHVGA	25	7	11	3	3	0	1

cluster_id	sequence	alignment	sum	mRNA_30cpc_Ctx	mRNA_30cpc_Th	mRNA_30cpc_SN
6545	GADLAEPTHPHVGA	___GADLAEPTHPHVGA__	9	2	3	3
6545	PSDPVTDPAHPLHP	___PSDPVTDPAHPLHP___	3	1	2	0
6545	DTYPNTDIGDPSYP	DTYPNTDIGDPSYP_____	3	1	1	0
6545	ADLAEPTHPHVGAP	_____ADLAEPTHPHVGAP_	3	1	2	0
6545	QRQPEPVEPTRPHV	__QRQPEPVEPTRPHV_____	2	1	0	0
6545	FIMDNSYPHPHGTQ	_____FIMDNSYPHPHGTQ	2	1	1	0
6545	DIGDPSYPHIGIDI	_____DIGDPSYPHIGIDI	2	0	2	0
6545	TLFAPATPTHPEPL	_____TLFAPATPTHPEPL	1	0	0	0

alignment	LUThrs	GeneName	start	structure	Group	Score
_____ADLAEPTHPHVGAP_	X42993	HSV-1-pUS8	395	14aa	mRNA_30cpc_Th	2
_____ADLAEPTHPHVGAP_	X42993	HSV-1-pUS8	395	14aa	mRNA_30cpc_Ctx	1
_____DIGDPSYPHIGIDI	X54246	ConA	16	14aaA5	mRNA_30cpc_Th	2
DTYPNTDIGDPSYP_____	X54139	ConA	10	14aaA5	mRNA_30cpc_Th	1
DTYPNTDIGDPSYP_____	X54139	ConA	10	14aaA5	mRNA_3cpc_Th	1
DTYPNTDIGDPSYP_____	X54139	ConA	10	14aaA5	mRNA_30cpc_Ctx	1
_____FIMDNSYPHPHGTQ	X60618	HSV-2-pUL34	34	14aaA5	mRNA_30cpc_Th	1
_____FIMDNSYPHPHGTQ	X60618	HSV-2-pUL34	34	14aaA5	mRNA_30cpc_Ctx	1
___GADLAEPTHPHVGA__	X57800	HSV-1-pUS8	394	14aaA5	mRNA_30cpc_SN	3
___GADLAEPTHPHVGA__	X57800	HSV-1-pUS8	394	14aaA5	mRNA_30cpc_Th	3
___GADLAEPTHPHVGA__	X57800	HSV-1-pUS8	394	14aaA5	mRNA_3cpc_Th	1
___GADLAEPTHPHVGA__	X57800	HSV-1-pUS8	394	14aaA5	mRNA_30cpc_Ctx	2
___PSDPVTDPAHPLHP___	X21252	HSV-1-pUL19	854	14aa	mRNA_30cpc_Th	2
___PSDPVTDPAHPLHP___	X21252	HSV-2-pUL19	854	14aa	mRNA_30cpc_Th	2
___PSDPVTDPAHPLHP___	X21252	HSV-1-pUL19	854	14aa	mRNA_30cpc_Ctx	1
___PSDPVTDPAHPLHP___	X21252	HSV-2-pUL19	854	14aa	mRNA_30cpc_Ctx	1
__QRQPEPVEPTRPHV_____	X19366	HSV-2-pUS8	387	14aa	mRNA_3cpc_SN	1
__QRQPEPVEPTRPHV_____	X19366	HSV-2-pUS8	387	14aa	mRNA_30cpc_Ctx	1
_____TLFAPATPTHPEPL	X7989	HSV-1-pUL36	688	14aa	mRNA_3cpc_Th	1

Peptide PLNAASGDGPGLLT from HSV-1-pUL36 with cluster number 6524

Peptide PLNAASGDGPGLLT from HSV-1-pUL36 with cluster number 6524



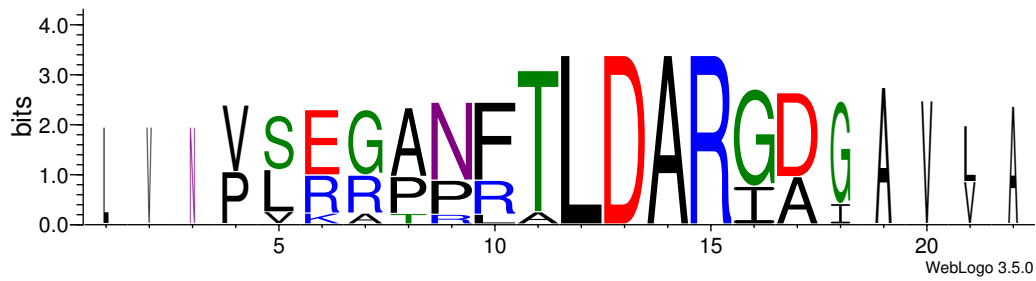
cluster_id	main_sequence	sum	mRNA_30cpc_Ctx	mRNA_30cpc_Th	mRNA_30cpc_SN	mRNA_3cpc_Th	mRNA_3cpc_Ctx	mRNA_3cpc_SN
6524	PLNAASGDGPGLLT	25	8	4	4	8	0	0

cluster_id	sequence	alignment	sum	mRNA_30cpc_Ctx	mRNA_30cpc_Th	mRNA_30cpc_SN
6524	PLNAASGDGPGLLT	_PLNAASGDGPGLLT_	9	2	2	1
6524	NAASGDGPGLLTRQ	__NAASGDGPGLLTRQ__	7	3	1	1
6524	PLNAASGDGPGLLTRQGARLQA	_PLNAASGDGPGLLTRQGARLQA	5	1	1	1
6524	HPLNAASGDGPGLL	HPLNAASGDGPGLL	3	2	0	0
6524	AASGDGPGLLTRQG	___AASGDGPGLLTRQG___	1	0	0	1

alignment	LUThrs	GeneName	start	structure	Group	Score
___AASGDGPGLLTRQG___	X43464	HSV-1-pUL36	1696	14aa	mRNA_30cpc_SN	1
HPLNAASGDGPGLL	X17539	HSV-1-pUL36	1692	14aa	mRNA_3cpc_Th	1
HPLNAASGDGPGLL	X17539	HSV-1-pUL36	1692	14aa	mRNA_30cpc_Ctx	2
__NAASGDGPGLLTRQ__	X2210	HSV-1-pUL36	1695	14aa	mRNA_30cpc_SN	1
__NAASGDGPGLLTRQ__	X2210	HSV-1-pUL36	1695	14aa	mRNA_30cpc_Th	1
__NAASGDGPGLLTRQ__	X2210	HSV-1-pUL36	1695	14aa	mRNA_3cpc_Th	1
__NAASGDGPGLLTRQ__	X2210	HSV-1-pUL36	1695	14aa	mRNA_30cpc_Ctx	3
__NAASGDGPGLLTRQ__	X2210	HSV-1-pUL36	1695	14aa	mRNA_30cpc_Th_4wks	1
PLNAASGDGPGLLT	X51083	HSV-1-pUL36	1693	14aaA5	mRNA_30cpc_SN	1
PLNAASGDGPGLLT	X51083	HSV-1-pUL36	1693	14aaA5	mRNA_30cpc_Th	2
PLNAASGDGPGLLT	X22543	HSV-1-pUL36	1693	14aa	mRNA_3cpc_Th	4
PLNAASGDGPGLLT	X51083	HSV-1-pUL36	1693	14aaA5	mRNA_30cpc_Ctx	2
_PLNAASGDGPGLLTRQGARLQA	X22542	HSV-1-pUL36	1693	22aa	mRNA_30cpc_SN	1
_PLNAASGDGPGLLTRQGARLQA	X22542	HSV-1-pUL36	1693	22aa	mRNA_30cpc_Th	1
_PLNAASGDGPGLLTRQGARLQA	X22542	HSV-1-pUL36	1693	22aa	mRNA_3cpc_Th	2
_PLNAASGDGPGLLTRQGARLQA	X22542	HSV-1-pUL36	1693	22aa	mRNA_30cpc_Ctx	1

Peptide PLRRPPRTLDARIA from NRTN with cluster number 4948

Peptide PLRRPPRTLDARIA from NRTN with cluster number 4948



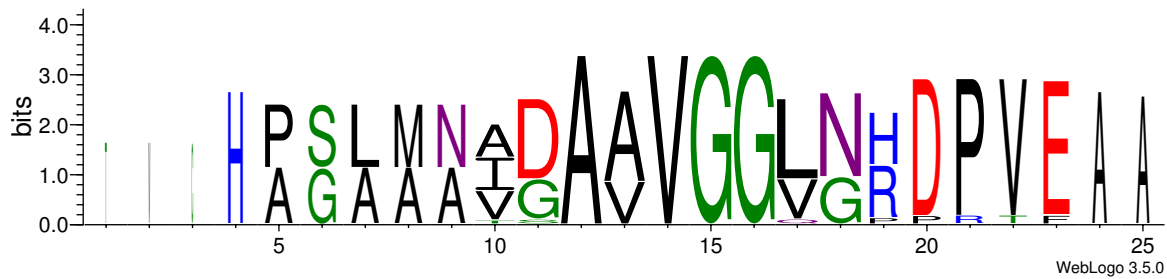
cluster_id	main_sequence	sum	mRNA_30cpc_Ctx	mRNA_30cpc_Th	mRNA_30cpc_SN	mRNA_3cpc_Th	mRNA_3cpc_Ctx	mRNA_3cpc_SN
4948	PLRRPPRTLDARIA	25	11	5	7	2	0	0

cluster_id	sequence	alignment	sum	mRNA_30cpc_Ctx	mRNA_30cpc_Th	mRNA_30cpc_SN
4948	PLRRPPRTLDARIA	___PLRRPPRTLDARIA_____	7	2	2	2
4948	VSEGANFTLDARGD	___VSEGANFTLDARGD_____	6	2	2	2
4948	NFTLDARGDGAVLA	____NFTLDARGDGAVLA_____	3	2	0	1
4948	LVNVSEGANFTLDARGDGAVVA	LVNVSEGANFTLDARGDGAVVA	3	3	0	0
4948	EGANFTLDARGDGA	____EGANFTLDARGDGA_____	3	1	0	2
4948	VKATRLALDARGAI	____VKATRLALDARGAI_____	2	1	1	0
4948	ANFTLDARGDGAVL	____ANFTLDARGDGAVL_____	1	0	0	0

alignment	LUThrs	GeneName	start	structure	Group	Score
____ANFTLDARGDGAVL_	X39958	PRV-Becker-gE	92	14aa	mRNA_3cpc_Th	1
____ANFTLDARGDGAVL_	X39958	PRV-TJ-gE	93	14aa	mRNA_3cpc_Th	1
____EGANFTLDARGDGA_	X39108	PRV-Becker-gE	90	14aa	mRNA_30cpc_SN	2
____EGANFTLDARGDGA_	X39108	PRV-TJ-gE	91	14aa	mRNA_30cpc_SN	2
____EGANFTLDARGDGA_	X39108	PRV-Becker-gE	90	14aa	mRNA_30cpc_Ctx	1
____EGANFTLDARGDGA_	X39108	PRV-TJ-gE	91	14aa	mRNA_30cpc_Ctx	1
LVNVSEGANFTLDARGDGAVVA	X32748	PRV-Becker-gE	85	22aa	mRNA_30cpc_Ctx	3
LVNVSEGANFTLDARGDGAVVA	X32748	PRV-TJ-gE	86	22aa	mRNA_30cpc_Ctx	3
____NFTLDARGDGAVLA	X2902	PRV-Becker-gE	93	14aa	mRNA_30cpc_SN	1
____NFTLDARGDGAVLA	X2902	PRV-TJ-gE	94	14aa	mRNA_30cpc_SN	1
____NFTLDARGDGAVLA	X2902	PRV-Becker-gE	93	14aa	mRNA_30cpc_Ctx	2
____NFTLDARGDGAVLA	X2902	PRV-TJ-gE	94	14aa	mRNA_30cpc_Ctx	2
___PLRRPPRTLDARIA_____	X82406	NRTN	16	14aaG4S	mRNA_30cpc_SN	2
___PLRRPPRTLDARIA_____	X82406	NRTN	16	14aaG4S	mRNA_30cpc_Th	2
___PLRRPPRTLDARIA_____	X82406	NRTN	16	14aaG4S	mRNA_3cpc_Th	1
___PLRRPPRTLDARIA_____	X82406	NRTN	16	14aaG4S	mRNA_30cpc_Ctx	2
___VKATRLALDARGAI_____	X65897	HSV-1-pUL36	1203	14aa	mRNA_30cpc_Th	1
___VKATRLALDARGAI_____	X65897	HSV-1-pUL36	1203	14aa	mRNA_30cpc_Ctx	1
___VSEGANFTLDARGD_____	X58402	PRV-Becker-gE	88	14aaA5	mRNA_30cpc_SN	2
___VSEGANFTLDARGD_____	X58402	PRV-TJ-gE	89	14aaA5	mRNA_30cpc_SN	2
___VSEGANFTLDARGD_____	X58402	PRV-Becker-gE	88	14aaA5	mRNA_30cpc_Th	2
___VSEGANFTLDARGD_____	X58402	PRV-TJ-gE	89	14aaA5	mRNA_30cpc_Th	2
___VSEGANFTLDARGD_____	X58402	PRV-Becker-gE	88	14aaA5	mRNA_30cpc_Ctx	2
___VSEGANFTLDARGD_____	X58402	PRV-TJ-gE	89	14aaA5	mRNA_30cpc_Ctx	2

Peptide AGAAAAGAVVGGLG from PrPc with cluster number 4468

Peptide AGAAAAGAVVGGLG from PrPc with cluster number 4468



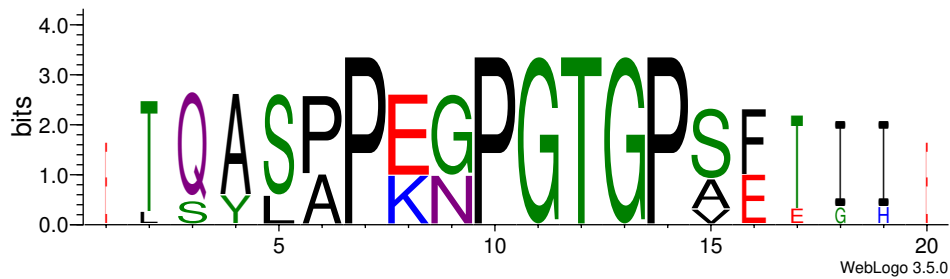
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4468	AGAAAAGAVVGGLG	25	7	7	4	5	0	0

cluster_id	sequence	alignment	sum	mRNA_30cpc_Ctx	mRNA_30cpc_Th	mRNA_30cpc_SN
4468	HPSLMNIDAAVGGVNHPVEAA	___HPSLMNIDAAVGGVNHPVEAA	8	2	2	2
4468	AGAAAAGAVVGGLG	___AGAAAAGAVVGGLG_____	8	3	2	2
4468	VDAAVGGLNRDPVE	_____VDAAVGGLNRDPVE__	6	2	2	0
4468	TVCHPSLMNVDAAVGGLNRDPV	TVCHPSLMNVDAAVGGLNRDPV__	1	0	0	0
4468	TSAAVGGQPPRTF	_____TSAAVGGQPPRTF__	1	0	0	0
4468	DAAVGGLNRDPVEA	_____DAAVGGLNRDPVEA_	1	0	1	0

alignment	LUThrs	GeneName	start	structure	Group	Score
___AGAAAAGAVVGGLG_____	X44210	PrPc	113	14aa	mRNA_30cpc_SN	2
___AGAAAAGAVVGGLG_____	X44210	PrPc	113	14aa	mRNA_30cpc_Th	2
___AGAAAAGAVVGGLG_____	X44210	PrPc	113	14aa	mRNA_3cpc_Th	1
___AGAAAAGAVVGGLG_____	X44210	PrPc	113	14aa	mRNA_30cpc_Ctx	3
_____DAAVGGLNRDPVEA_	X35979	HSV-1-pUL19	470	14aa	mRNA_30cpc_Th	1
___HPSLMNIDAAVGGVNHPVEAA	X17497	HSV-2-pUL19	463	22aa	mRNA_30cpc_SN	2
___HPSLMNIDAAVGGVNHPVEAA	X17497	HSV-2-pUL19	463	22aa	mRNA_30cpc_Th	2
___HPSLMNIDAAVGGVNHPVEAA	X17497	HSV-2-pUL19	463	22aa	mRNA_3cpc_Th	1
___HPSLMNIDAAVGGVNHPVEAA	X17497	HSV-2-pUL19	463	22aa	mRNA_30cpc_Ctx	2
___HPSLMNIDAAVGGVNHPVEAA	X17497	HSV-2-pUL19	463	22aa	mRNA_30cpc_Th_4wks	1
_____TSAAVGGQPPRTF__	X6424	HSV-2-pUL44	301	14aa	mRNA_3cpc_Th	1
TVCHPSLMNVDAAVGGLNRDPV__	X9324	HSV-1-pUL19	460	22aa	mRNA_3cpc_Th	1
TVCHPSLMNVDAAVGGLNRDPV__	X9324	HSV-2-pUL19	460	22aa	mRNA_3cpc_Th	1
_____VDAAVGGLNRDPVE__	X68179	HSV-1-pUL19	469	14aa	mRNA_30cpc_Th	1
_____VDAAVGGLNRDPVE__	X58843	HSV-1-pUL19	469	14aaA5	mRNA_30cpc_Th	1
_____VDAAVGGLNRDPVE__	X68179	HSV-1-pUL19	469	14aa	mRNA_3cpc_Th	1
_____VDAAVGGLNRDPVE__	X68179	HSV-1-pUL19	469	14aa	mRNA_30cpc_Ctx	1
_____VDAAVGGLNRDPVE__	X58843	HSV-1-pUL19	469	14aaA5	mRNA_30cpc_Ctx	1
_____VDAAVGGLNRDPVE__	X68179	HSV-1-pUL19	469	14aa	mRNA_30cpc_Th_4wks	1

Peptide TQASPPEGPGTGPS from Tau with cluster number 6588

Peptide TQASPPEGPGTGPS from Tau with cluster number 6588



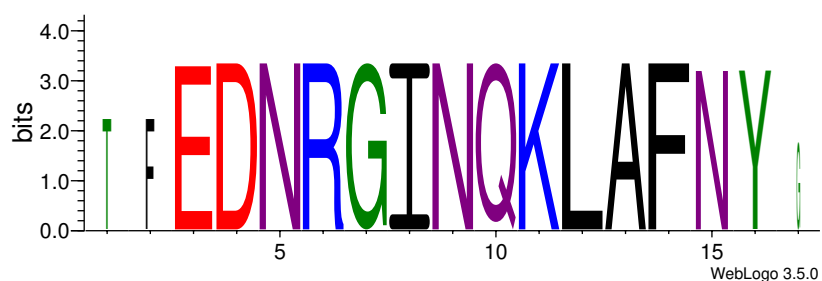
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6588	TQASPPEGPGTGPS	24	5	7	2	8	2	0

cluster_id	sequence	alignment	sum	mRNA_30cpc_Ctx	mRNA_30cpc_Th	mRNA_30cpc_SN
6588	TQASPPEGPGTGPS	_TQASPPEGPGTGPS_	8	2	1	0
6588	QASPPEGPGTGPSE	_QASPPEGPGTGPSE_	5	1	2	1
6588	APKNPGTGPAFTII	____APKNPGTGPAFTII_	5	0	0	1
6588	SYLAPKNPGTGPVF	_SYLAPKNPGTGPVF_	2	1	1	0
6588	YLAPKNPGTGPVFT	___YLAPKNPGTGPVFT__	1	0	1	0
6588	PEGPGTGPSEEGHE	____PEGPGTGPSEEGHE	1	0	1	0
6588	LSYLAPKNPGTGPA	_LSYLAPKNPGTGPA_	1	1	0	0
6588	ETQASPPEGPGTGP	ETQASPPEGPGTGP_	1	0	1	0

alignment	LUThrs	GeneName	start	structure	Group	Score
____APKNPGTGPAFTII_	X41530	VSV-Indiana-G	322	14aa	mRNA_30cpc_SN	1
____APKNPGTGPAFTII_	X41530	VSV-Orsay-G	306	14aa	mRNA_30cpc_SN	1
____APKNPGTGPAFTII_	X41530	VSV-Indiana-G	322	14aa	mRNA_3cpc_Th	3
____APKNPGTGPAFTII_	X41530	VSV-Orsay-G	306	14aa	mRNA_3cpc_Th	3
____APKNPGTGPAFTII_	X41530	VSV-Indiana-G	322	14aa	mRNA_3cpc_Ctx	1
____APKNPGTGPAFTII_	X41530	VSV-Orsay-G	306	14aa	mRNA_3cpc_Ctx	1
ETQASPPEGPGTGP_	X54884	Tau	274	14aaA5	mRNA_30cpc_Th	1
LSYLAPKNPGTGPA	X29458	VSV-Indiana-G	318	14aa	mRNA_30cpc_Ctx	1
LSYLAPKNPGTGPA	X29458	VSV-Orsay-G	302	14aa	mRNA_30cpc_Ctx	1
____PEGPGTGPSEEGHE	X23236	Tau	280	14aa	mRNA_30cpc_Th	1
QASPPEGPGTGPSE	X19837	Tau	276	14aa	mRNA_30cpc_SN	1
QASPPEGPGTGPSE	X19837	Tau	276	14aa	mRNA_30cpc_Th	2
QASPPEGPGTGPSE	X19837	Tau	276	14aa	mRNA_3cpc_Th	1
QASPPEGPGTGPSE	X19837	Tau	276	14aa	mRNA_30cpc_Ctx	1
SYLAPKNPGTGPVF	X13801	VSV-Indiana-G	319	14aa	mRNA_30cpc_Th	1
SYLAPKNPGTGPVF	X13801	VSV-Orsay-G	303	14aa	mRNA_30cpc_Th	1
SYLAPKNPGTGPVF	X13801	VSV-Indiana-G	319	14aa	mRNA_30cpc_Ctx	1
SYLAPKNPGTGPVF	X13801	VSV-Orsay-G	303	14aa	mRNA_30cpc_Ctx	1
TQASPPEGPGTGPS	X7067	Tau	275	14aa	mRNA_30cpc_Th	1
TQASPPEGPGTGPS	X7067	Tau	275	14aa	mRNA_3cpc_Th	4
TQASPPEGPGTGPS	X7067	Tau	275	14aa	mRNA_30cpc_Ctx	2
TQASPPEGPGTGPS	X7067	Tau	275	14aa	mRNA_3cpc_Ctx	1
___YLAPKNPGTGPVFT__	X90947	VSV-Indiana-G	320	14aaG4S	mRNA_30cpc_Th	1
___YLAPKNPGTGPVFT__	X90947	VSV-Orsay-G	304	14aaG4S	mRNA_30cpc_Th	1

Peptide EDNRGINQKLAIFY from BoNT-E-Hc with cluster number 5696

ide EDNRGINQKLAIFY from BoNT-E-Hc with cluster numb



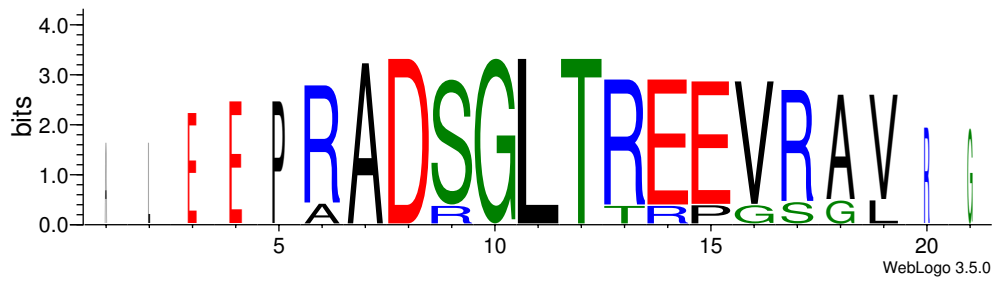
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5696	EDNRGINQKLAIFY	24	3	3	3	7	5	3

cluster_id	sequence	alignment	sum	mRNA_30cpc_Ctx	mRNA_30cpc_Th	mRNA_30cpc_SN
5696	EDNRGINQKLAIFY	__EDNRGINQKLAIFY_	17	3	3	3
5696	TFEDNRGINQKLAF	TFEDNRGINQKLAF___	5	0	0	0
5696	DNRGINQKLAIFYG	___DNRGINQKLAIFYG	2	0	0	0

alignment	LUThrs	GeneName	start	structure	Group	Score
___DNRGINQKLAIFYG	X33773	BoNT-E-Hc	185	14aa	mRNA_3cpc_Th	1
___DNRGINQKLAIFYG	X33773	BoNT-E-Hc	185	14aa	mRNA_3cpc_Ctx	1
__EDNRGINQKLAIFY_	X38325	BoNT-E-Hc	184	14aa	mRNA_30cpc_SN	3
__EDNRGINQKLAIFY_	X38325	BoNT-E-Hc	184	14aa	mRNA_3cpc_SN	2
__EDNRGINQKLAIFY_	X38325	BoNT-E-Hc	184	14aa	mRNA_30cpc_Th	3
__EDNRGINQKLAIFY_	X38325	BoNT-E-Hc	184	14aa	mRNA_3cpc_Th	4
__EDNRGINQKLAIFY_	X38325	BoNT-E-Hc	184	14aa	mRNA_30cpc_Ctx	3
__EDNRGINQKLAIFY_	X38325	BoNT-E-Hc	184	14aa	mRNA_3cpc_Ctx	2
TFEDNRGINQKLAF___	X9739	BoNT-E-Hc	182	14aa	mRNA_3cpc_SN	1
TFEDNRGINQKLAF___	X9739	BoNT-E-Hc	182	14aa	mRNA_3cpc_Th	2
TFEDNRGINQKLAF___	X9739	BoNT-E-Hc	182	14aa	mRNA_3cpc_Ctx	2

Peptide RADSGLTREEVRVAV from HSV-1-pUL21 with cluster number 6508

Peptide RADSGLTREEVRVAV from HSV-1-pUL21 with cluster number 6508



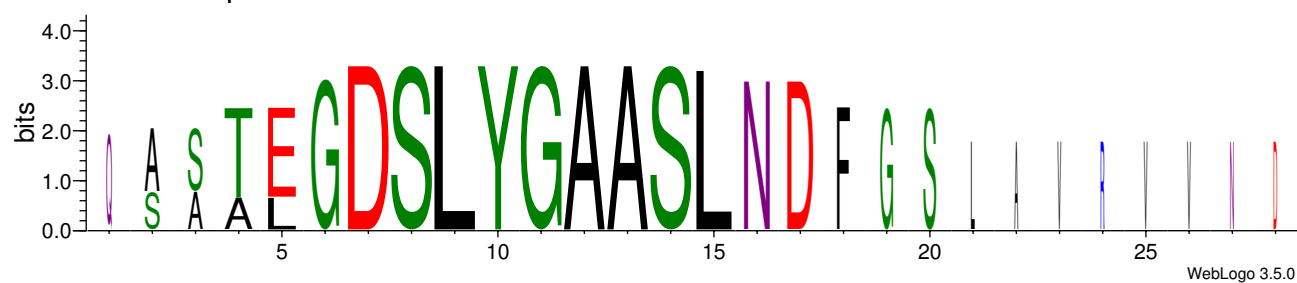
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6508	RADSGLTREEVRVAV	23	7	6	5	4	1	0

cluster_id	sequence	alignment	sum	mRNA_30cpc_Ctx	mRNA_30cpc_Th	mRNA_30cpc_SN
6508	RADSGLTREEVRVAV	_____RADSGLTREEVRVAV__	10	3	2	4
6508	EEPRADSGLTREEV	__EEPRADSGLTREEV_____	4	1	2	0
6508	DSGLTREEVRAVRG	_____DSGLTREEVRAVRG	3	2	1	0
6508	AADRGLTTRPGSGL	_____AADRGLTTRPGSGL__	3	0	0	0
6508	EPRADSGLTREEVR	__EPRADSGLTREEVR_____	2	0	1	1
6508	ALEEPRADSGLTRE	ALEEPRADSGLTRE_____	1	1	0	0

alignment	LUThrs	GeneName	start	structure	Group	Score
_____AADRGLTTRPGSGL__	X43680	APP	645	14aa	mRNA_3cpc_Th	2
_____AADRGLTTRPGSGL__	X43680	APP	645	14aa	mRNA_3cpc_Ctx	1
ALEEPRADSGLTRE_____	X42589	HSV-1-pUL21	297	14aa	mRNA_30cpc_Ctx	1
_____DSGLTREEVRAVRG	X54198	HSV-1-pUL21	304	14aaA5	mRNA_30cpc_Th	1
_____DSGLTREEVRAVRG	X54198	HSV-1-pUL21	304	14aaA5	mRNA_30cpc_Ctx	2
__EEPRADSGLTREEV_____	X38554	HSV-1-pUL21	299	14aa	mRNA_30cpc_Th	2
__EEPRADSGLTREEV_____	X38554	HSV-1-pUL21	299	14aa	mRNA_3cpc_Th	1
__EEPRADSGLTREEV_____	X38554	HSV-1-pUL21	299	14aa	mRNA_30cpc_Ctx	1
__EPRADSGLTREEVR_____	X37827	HSV-1-pUL21	300	14aa	mRNA_30cpc_SN	1
__EPRADSGLTREEVR_____	X37827	HSV-1-pUL21	300	14aa	mRNA_30cpc_Th	1
_____RADSGLTREEVRVAV__	X27207	HSV-1-pUL21	302	14aa	mRNA_30cpc_SN	4
_____RADSGLTREEVRVAV__	X27207	HSV-1-pUL21	302	14aa	mRNA_30cpc_Th	2
_____RADSGLTREEVRVAV__	X27207	HSV-1-pUL21	302	14aa	mRNA_3cpc_Th	1
_____RADSGLTREEVRVAV__	X27207	HSV-1-pUL21	302	14aa	mRNA_30cpc_Ctx	3

Peptide TEGDSLYGAASLND from PV1-VP1 with cluster number 6606

Peptide TEGDSLYGAASLND from PV1-VP1 with cluster number 6606



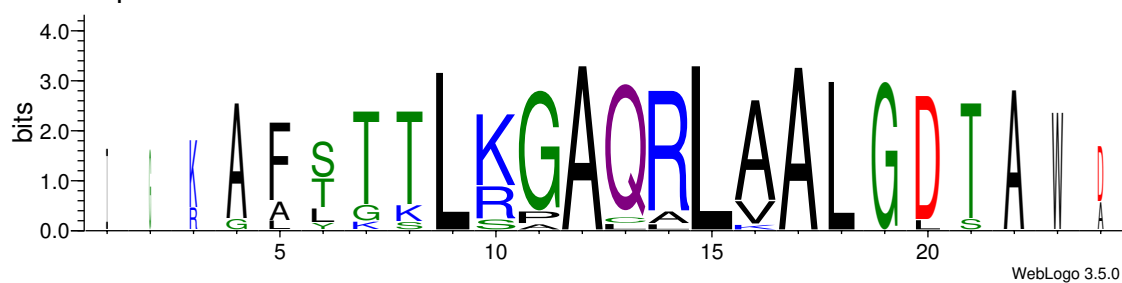
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6606	TEGDSLYGAASLND	22	4	8	3	4	0	0

cluster_id	sequence	alignment	sum	mRNA_30cpc_Ctx	mRNA_30cpc_Th	mRNA_30cpc_SN
6606	TEGDSLYGAASLND	___TEGDSLYGAASLND_____	6	1	3	1
6606	DSLYGAASLNDFGS	_____DSLYGAASLNDFGS_____	5	1	2	1
6606	ASTEGDSLYGAASL	_ASTEGDSLYGAASL_____	4	1	1	1
6606	QSAALGDSLYGAAS	QSAALGDSLYGAAS_____	2	1	1	0
6606	DSLYGAASLNDFGSLAVRVVND	_____DSLYGAASLNDFGSLAVRVVND_____	2	0	0	0
6606	SAALGDSLYGAASL	_SAALGDSLYGAASL_____	1	0	1	0
6606	QASTEGDSLYGAAS	QASTEGDSLYGAAS_____	1	0	0	0
6606	ALGDSLYGAASLND	___ALGDSLYGAASLND_____	1	0	0	0

alignment	LUThrs	GeneName	start	structure	Group	Score
___ALGDSLYGAASLND_____	X42697	PV1-VP1	223	14aa	mRNA_30cpc_Th_4wks	1
___ALGDSLYGAASLND_____	X42697	PV2-VP1	223	14aa	mRNA_30cpc_Th_4wks	1
_ASTEGLSGLYGAASL_____	X40576	PV2-VP1	221	14aa	mRNA_30cpc_SN	1
_ASTEGLSGLYGAASL_____	X40576	PV2-VP1	221	14aa	mRNA_30cpc_Th	1
_ASTEGLSGLYGAASL_____	X40576	PV2-VP1	221	14aa	mRNA_3cpc_Th	1
_ASTEGLSGLYGAASL_____	X40576	PV2-VP1	221	14aa	mRNA_30cpc_Ctx	1
_____DSLYGAASLNDFGS_____	X54181	PV1-VP1	226	14aaA5	mRNA_30cpc_SN	1
_____DSLYGAASLNDFGS_____	X54181	PV2-VP1	226	14aaA5	mRNA_30cpc_SN	1
_____DSLYGAASLNDFGS_____	X54181	PV1-VP1	226	14aaA5	mRNA_30cpc_Th	2
_____DSLYGAASLNDFGS_____	X54181	PV2-VP1	226	14aaA5	mRNA_30cpc_Th	2
_____DSLYGAASLNDFGS_____	X54181	PV1-VP1	226	14aaA5	mRNA_3cpc_Th	1
_____DSLYGAASLNDFGS_____	X54181	PV2-VP1	226	14aaA5	mRNA_3cpc_Th	1
_____DSLYGAASLNDFGS_____	X54181	PV1-VP1	226	14aaA5	mRNA_30cpc_Ctx	1
_____DSLYGAASLNDFGS_____	X54181	PV2-VP1	226	14aaA5	mRNA_30cpc_Ctx	1
_____DSLYGAASLNDFGSLAVRVVND_____	X34338	PV1-VP1	226	22aa	mRNA_30cpc_Th_4wks	1
_____DSLYGAASLNDFGSLAVRVVND_____	X34338	PV2-VP1	226	22aa	mRNA_30cpc_Th_4wks	1
_____DSLYGAASLNDFGSLAVRVVND_____	X34338	PV1-VP1	226	22aa	mRNA_30cpc_Ctx_4wks	1
_____DSLYGAASLNDFGSLAVRVVND_____	X34338	PV2-VP1	226	22aa	mRNA_30cpc_Ctx_4wks	1
QASTEGLSGLYGAAS_____	X19836	PV2-VP1	220	14aa	mRNA_3cpc_Th	1
QSAALGDSLYGAAS_____	X81431	PV1-VP1	220	14aaG4S	mRNA_30cpc_Th	1
QSAALGDSLYGAAS_____	X81431	PV1-VP1	220	14aaG4S	mRNA_30cpc_Ctx	1
_SAALGDSLYGAASL_____	X13020	PV1-VP1	221	14aa	mRNA_30cpc_Th	1
___TEGLSGLYGAASLND_____	X78705	PV1-VP1	223	14aaG4S	mRNA_30cpc_SN	1
___TEGLSGLYGAASLND_____	X78705	PV2-VP1	223	14aaG4S	mRNA_30cpc_SN	1
___TEGLSGLYGAASLND_____	X8350	PV1-VP1	223	14aa	mRNA_30cpc_Th	2
___TEGLSGLYGAASLND_____	X78705	PV1-VP1	223	14aaG4S	mRNA_30cpc_Th	1
___TEGLSGLYGAASLND_____	X8350	PV2-VP1	223	14aa	mRNA_30cpc_Th	2
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Peptide AFSTTLKGAQRLAA from JEV-E-BN19 with cluster number 6560

Peptide AFSTTLKGAQRLAA from JEV-E-BN19 with cluster number 6560



cluster_id	main_sequence	sum	mRNA_30cpc_Ctx	mRNA_30cpc_Th	mRNA_30cpc_SN	mRNA_3cpc_Th	mRNA_3cpc_Ctx	mRNA_3cpc_SN
6560	AFSTTLKGAQRLAA	22	6	5	6	2	0	0

cluster_id	sequence	alignment	sum	mRNA_30cpc_Ctx	mRNA_30cpc_Th	mRNA_30cpc_SN
6560	AFSTTLKGAQRLAA	__AFSTTLKGAQRLAA_____	5	1	1	2
6560	RGAQRLAALGDTAW	_____RGAQRLAALGDTAW_	3	2	1	0
6560	TTLKGAQRLVALGD	_____TTLKGAQRLVALGD___	2	1	1	0
6560	LKGAQRLVALGDTA	_____LKGAQRLVALGDTA__	2	0	1	1
6560	KAFTTTLKGAQRLAALGDTAWD	__KAFTTTLKGAQRLAALGDTAWD	2	1	1	0
6560	AALGKLSPAQALAA	___AALGKLSPAQALAA_____	2	1	0	1
6560	TTTLRGAQRLAALG	_____TTTLRGAQRLAALG____	1	0	0	0
6560	RGLYKSLKGACRLK	__RGLYKSLKGACRLK_____	1	0	0	1
6560	LRGAQRLAALGDTA	_____LRGAQRLAALGDTA__	1	0	0	0
6560	LKGAQRLAALGDTA	_____LKGAQRLAALGDTA__	1	0	0	1
6560	IGKAFTTTTLRGAQRLAALGDTA	IGKAFTTTTLRGAQRLAALGDTA__	1	0	0	0
6560	AALLLAALGLSAWA	_____AALLLAALGLSAWA_____	1	0	0	0

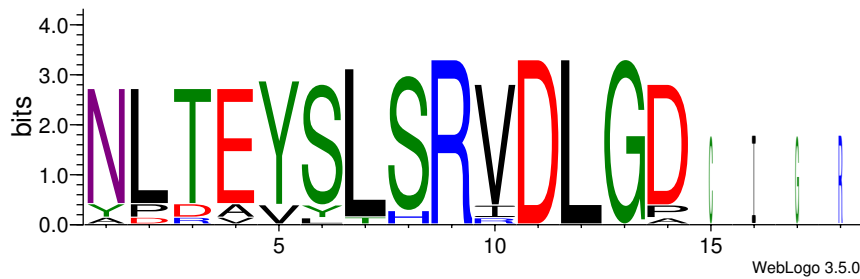
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__AALGKLSPAQALAA_____	X43641	HSV-1-pUL36	2209	14aa	mRNA_30cpc_SN	1
__AALGKLSPAQALAA_____	X43641	HSV-1-pUL36	2209	14aa	mRNA_30cpc_Ctx	1
_____AALLLAALGLSAWA	X87849	HSV-2-pUS8	421	14aaG4S	mRNA_30cpc_SN_4wks	1
__AFSTTLKGAQRLAA_____	X56956	JEV-E-BN19	406	14aaA5	mRNA_30cpc_SN	2
__AFSTTLKGAQRLAA_____	X56956	JEV-E-KE-093	406	14aaA5	mRNA_30cpc_SN	2
__AFSTTLKGAQRLAA_____	X56956	JEV-E-SA14-5-3	406	14aaA5	mRNA_30cpc_SN	2
__AFSTTLKGAQRLAA_____	X56956	JEV-E-ThCMAR4492	406	14aaA5	mRNA_30cpc_SN	2
__AFSTTLKGAQRLAA_____	X56956	WNV-E-AZ10-918	407	14aaA5	mRNA_30cpc_SN	2
__AFSTTLKGAQRLAA_____	X56956	WNV-E-ArD76104	403	14aaA5	mRNA_30cpc_SN	2
__AFSTTLKGAQRLAA_____	X56956	WNV-E-H-442	407	14aaA5	mRNA_30cpc_SN	2
__AFSTTLKGAQRLAA_____	X56956	JEV-E-BN19	406	14aaA5	mRNA_30cpc_Th	1
__AFSTTLKGAQRLAA_____	X56956	JEV-E-KE-093	406	14aaA5	mRNA_30cpc_Th	1
__AFSTTLKGAQRLAA_____	X56956	JEV-E-SA14-5-3	406	14aaA5	mRNA_30cpc_Th	1
__AFSTTLKGAQRLAA_____	X56956	JEV-E-ThCMAR4492	406	14aaA5	mRNA_30cpc_Th	1
__AFSTTLKGAQRLAA_____	X56956	WNV-E-AZ10-918	407	14aaA5	mRNA_30cpc_Th	1
__AFSTTLKGAQRLAA_____	X56956	WNV-E-ArD76104	403	14aaA5	mRNA_30cpc_Th	1
__AFSTTLKGAQRLAA_____	X56956	WNV-E-H-442	407	14aaA5	mRNA_30cpc_Th	1
__AFSTTLKGAQRLAA_____	X56956	JEV-E-BN19	406	14aaA5	mRNA_3cpc_Th	1
__AFSTTLKGAQRLAA_____	X56956	JEV-E-KE-093	406	14aaA5	mRNA_3cpc_Th	1
__AFSTTLKGAQRLAA_____	X56956	JEV-E-SA14-5-3	406	14aaA5	mRNA_3cpc_Th	1
__AFSTTLKGAQRLAA_____	X56956	JEV-E-ThCMAR4492	406	14aaA5	mRNA_3cpc_Th	1
__AFSTTLKGAQRLAA_____	X56956	WNV-E-AZ10-918	407	14aaA5	mRNA_3cpc_Th	1
__AFSTTLKGAQRLAA_____	X56956	WNV-E-ArD76104	403	14aaA5	mRNA_3cpc_Th	1
__AFSTTLKGAQRLAA_____	X56956	WNV-E-H-442	407	14aaA5	mRNA_3cpc_Th	1
__AFSTTLKGAQRLAA_____	X56956	JEV-E-BN19	406	14aaA5	mRNA_30cpc_Ctx	1
__AFSTTLKGAQRLAA_____	X56956	JEV-E-KE-093	406	14aaA5	mRNA_30cpc_Ctx	1
__AFSTTLKGAQRLAA_____	X56956	JEV-E-SA14-5-3	406	14aaA5	mRNA_30cpc_Ctx	1
__AFSTTLKGAQRLAA_____	X56956	JEV-E-ThCMAR4492	406	14aaA5	mRNA_30cpc_Ctx	1
__AFSTTLKGAQRLAA_____	X56956	WNV-E-AZ10-918	407	14aaA5	mRNA_30cpc_Ctx	1
__AFSTTLKGAQRLAA_____	X56956	WNV-E-ArD76104	403	14aaA5	mRNA_30cpc_Ctx	1
__AFSTTLKGAQRLAA_____	X56956	WNV-E-H-442	407	14aaA5	mRNA_30cpc_Ctx	1
IGKAFTTTLRGAQRLAALGDTA__	X16394	JEV-E-KE-093	403	22aa	mRNA_30cpc_SN_4wks	1
IGKAFTTTLRGAQRLAALGDTA__	X16394	JEV-E-SA14-5-3	403	22aa	mRNA_30cpc_SN_4wks	1
IGKAFTTTLRGAQRLAALGDTA__	X16394	JEV-E-ThCMAR4492	403	22aa	mRNA_30cpc_SN_4wks	1
IGKAFTTTLRGAQRLAALGDTA__	X16394	WNV-E-AZ10-918	404	22aa	mRNA_30cpc_SN_4wks	1
IGKAFTTTLRGAQRLAALGDTA__	X16394	WNV-E-ArD76104	400	22aa	mRNA_30cpc_SN_4wks	1
IGKAFTTTLRGAQRLAALGDTA__	X16394	WNV-E-H-442	404	22aa	mRNA_30cpc_SN_4wks	1
__KAFTTTLKGAQRLAALGDTAWD	X4852	JEV-E-BN19	405	22aa	mRNA_30cpc_Th	1
__KAFTTTLKGAQRLAALGDTAWD	X4852	JEV-E-KE-093	405	22aa	mRNA_30cpc_Th	1
__KAFTTTLKGAQRLAALGDTAWD	X4852	JEV-E-SA14-5-3	405	22aa	mRNA_30cpc_Th	1
__KAFTTTLKGAQRLAALGDTAWD	X4852	JEV-E-ThCMAR4492	405	22aa	mRNA_30cpc_Th	1
__KAFTTTLKGAQRLAALGDTAWD	X4852	WNV-E-AZ10-918	406	22aa	mRNA_30cpc_Th	1
__KAFTTTLKGAQRLAALGDTAWD	X4852	WNV-E-ArD76104	402	22aa	mRNA_30cpc_Th	1
__KAFTTTLKGAQRLAALGDTAWD	X4852	WNV-E-H-442	406	22aa	mRNA_30cpc_Th	1
__KAFTTTLKGAQRLAALGDTAWD	X4852	JEV-E-BN19	405	22aa	mRNA_30cpc_Ctx	1
__KAFTTTLKGAQRLAALGDTAWD	X4852	JEV-E-KE-093	405	22aa	mRNA_30cpc_Ctx	1
__KAFTTTLKGAQRLAALGDTAWD	X4852	JEV-E-SA14-5-3	405	22aa	mRNA_30cpc_Ctx	1

alignment	LUThrs	GeneName	start	structure	Group	Score
__KAFTTTTLKGAQRLAALGDTAWD	X4852	JEV-E-ThCMAr4492	405	22aa	mRNA_30cpc_Ctx	1
__KAFTTTTLKGAQRLAALGDTAWD	X4852	WNV-E-AZ10-918	406	22aa	mRNA_30cpc_Ctx	1
__KAFTTTTLKGAQRLAALGDTAWD	X4852	WNV-E-ArD76104	402	22aa	mRNA_30cpc_Ctx	1
__KAFTTTTLKGAQRLAALGDTAWD	X4852	WNV-E-H-442	406	22aa	mRNA_30cpc_Ctx	1
_____LKGAQRLAALGDTA__	X52696	JEV-E-BN19	411	14aaA5	mRNA_30cpc_SN	1
_____LKGAQRLAALGDTA__	X52696	JEV-E-KE-093	411	14aaA5	mRNA_30cpc_SN	1
_____LKGAQRLAALGDTA__	X52696	JEV-E-SA14-5-3	411	14aaA5	mRNA_30cpc_SN	1
_____LKGAQRLAALGDTA__	X52696	JEV-E-ThCMAr4492	411	14aaA5	mRNA_30cpc_SN	1
_____LKGAQRLAALGDTA__	X52696	WNV-E-AZ10-918	412	14aaA5	mRNA_30cpc_SN	1
_____LKGAQRLAALGDTA__	X52696	WNV-E-ArD76104	408	14aaA5	mRNA_30cpc_SN	1
_____LKGAQRLAALGDTA__	X52696	WNV-E-H-442	412	14aaA5	mRNA_30cpc_SN	1
_____LKGAQRLVALGDTA__	X28723	JEV-E-BN19	411	14aa	mRNA_30cpc_SN	1
_____LKGAQRLVALGDTA__	X28723	JEV-E-KE-093	411	14aa	mRNA_30cpc_SN	1
_____LKGAQRLVALGDTA__	X28723	JEV-E-SA14-5-3	411	14aa	mRNA_30cpc_SN	1
_____LKGAQRLVALGDTA__	X28723	JEV-E-ThCMAr4492	411	14aa	mRNA_30cpc_SN	1
_____LKGAQRLVALGDTA__	X28723	WNV-E-AZ10-918	412	14aa	mRNA_30cpc_SN	1
_____LKGAQRLVALGDTA__	X28723	JEV-E-BN19	411	14aa	mRNA_30cpc_Th	1
_____LKGAQRLVALGDTA__	X28723	JEV-E-KE-093	411	14aa	mRNA_30cpc_Th	1
_____LKGAQRLVALGDTA__	X28723	JEV-E-SA14-5-3	411	14aa	mRNA_30cpc_Th	1
_____LKGAQRLVALGDTA__	X28723	JEV-E-ThCMAr4492	411	14aa	mRNA_30cpc_Th	1
_____LKGAQRLVALGDTA__	X28723	WNV-E-AZ10-918	412	14aa	mRNA_30cpc_Th	1
_____LRGAQRLAALGDTA__	X30701	JEV-E-KE-093	411	14aa	mRNA_30cpc_Th_4wks	1
_____LRGAQRLAALGDTA__	X30701	JEV-E-SA14-5-3	411	14aa	mRNA_30cpc_Th_4wks	1
_____LRGAQRLAALGDTA__	X30701	JEV-E-ThCMAr4492	411	14aa	mRNA_30cpc_Th_4wks	1
_____LRGAQRLAALGDTA__	X30701	WNV-E-AZ10-918	412	14aa	mRNA_30cpc_Th_4wks	1
_____LRGAQRLAALGDTA__	X30701	WNV-E-ArD76104	408	14aa	mRNA_30cpc_Th_4wks	1
_____LRGAQRLAALGDTA__	X30701	WNV-E-H-442	412	14aa	mRNA_30cpc_Th_4wks	1
_____RGAQRLAALGDTAW_	X52373	JEV-E-KE-093	412	14aaA5	mRNA_30cpc_Th	1
_____RGAQRLAALGDTAW_	X52373	JEV-E-SA14-5-3	412	14aaA5	mRNA_30cpc_Th	1
_____RGAQRLAALGDTAW_	X52373	JEV-E-ThCMAr4492	412	14aaA5	mRNA_30cpc_Th	1
_____RGAQRLAALGDTAW_	X52373	WNV-E-AZ10-918	413	14aaA5	mRNA_30cpc_Th	1
_____RGAQRLAALGDTAW_	X52373	WNV-E-ArD76104	409	14aaA5	mRNA_30cpc_Th	1
_____RGAQRLAALGDTAW_	X52373	WNV-E-H-442	413	14aaA5	mRNA_30cpc_Th	1
_____RGAQRLAALGDTAW_	X52373	JEV-E-KE-093	412	14aaA5	mRNA_30cpc_Ctx	2
_____RGAQRLAALGDTAW_	X52373	JEV-E-SA14-5-3	412	14aaA5	mRNA_30cpc_Ctx	2
_____RGAQRLAALGDTAW_	X52373	JEV-E-ThCMAr4492	412	14aaA5	mRNA_30cpc_Ctx	2
_____RGAQRLAALGDTAW_	X52373	WNV-E-AZ10-918	413	14aaA5	mRNA_30cpc_Ctx	2
_____RGAQRLAALGDTAW_	X52373	WNV-E-ArD76104	409	14aaA5	mRNA_30cpc_Ctx	2
_____RGAQRLAALGDTAW_	X52373	WNV-E-H-442	413	14aaA5	mRNA_30cpc_Ctx	2
__RGLYKSLKGACRLK_____	X83658	RV-G-B19	213	14aaG4S	mRNA_30cpc_SN	1
__RGLYKSLKGACRLK_____	X83658	RV-G-B2c	213	14aaG4S	mRNA_30cpc_SN	1
__RGLYKSLKGACRLK_____	X83658	RV-G-N2c	232	14aaG4S	mRNA_30cpc_SN	1
__RGLYKSLKGACRLK_____	X83658	RV-G-PV	213	14aaG4S	mRNA_30cpc_SN	1
_____TTLKGAQRLVALGD____	X6060	JEV-E-BN19	409	14aa	mRNA_30cpc_Th	1
_____TTLKGAQRLVALGD____	X6060	JEV-E-KE-093	409	14aa	mRNA_30cpc_Th	1
_____TTLKGAQRLVALGD____	X6060	JEV-E-SA14-5-3	409	14aa	mRNA_30cpc_Th	1
_____TTLKGAQRLVALGD____	X6060	JEV-E-ThCMAr4492	409	14aa	mRNA_30cpc_Th	1

alignment	LUThrs	GeneName	start	structure	Group	Score
-----TTLKGAQRLVALGD----	X6060	WNV-E-AZ10-918	410	14aa	mRNA_30cpc_Th	1
-----TTLKGAQRLVALGD----	X6060	JEV-E-BN19	409	14aa	mRNA_30cpc_Ctx	1
-----TTLKGAQRLVALGD----	X6060	JEV-E-KE-093	409	14aa	mRNA_30cpc_Ctx	1
-----TTLKGAQRLVALGD----	X6060	JEV-E-SA14-5-3	409	14aa	mRNA_30cpc_Ctx	1
-----TTLKGAQRLVALGD----	X6060	JEV-E-ThCMAr4492	409	14aa	mRNA_30cpc_Ctx	1
-----TTLKGAQRLVALGD----	X6060	WNV-E-AZ10-918	410	14aa	mRNA_30cpc_Ctx	1
-----TTTLRGAQRLAALG-----	X5938	JEV-E-KE-093	408	14aa	mRNA_3cpc_Th	1
-----TTTLRGAQRLAALG-----	X5938	JEV-E-SA14-5-3	408	14aa	mRNA_3cpc_Th	1
-----TTTLRGAQRLAALG-----	X5938	JEV-E-ThCMAr4492	408	14aa	mRNA_3cpc_Th	1
-----TTTLRGAQRLAALG-----	X5938	WNV-E-AZ10-918	409	14aa	mRNA_3cpc_Th	1
-----TTTLRGAQRLAALG-----	X5938	WNV-E-ArD76104	405	14aa	mRNA_3cpc_Th	1
-----TTTLRGAQRLAALG-----	X5938	WNV-E-H-442	409	14aa	mRNA_3cpc_Th	1

Peptide NLTEYSLSRVDLGD from HSV-1-pUL27 with cluster number 4641

Peptide NLTEYSLSRVDLGD from HSV-1-pUL27 with cluster number 4641



cluster_id	main_sequence	sum	mRNA_30cpc_Ctx	mRNA_30cpc_Th	mRNA_30cpc_SN	mRNA_3cpc_Th	mRNA_3cpc_Ctx	mRNA_3cpc_SN
4641	NLTEYSLSRVDLGD	22	6	7	4	3	1	1

cluster_id	sequence	alignment	sum	mRNA_30cpc_Ctx	mRNA_30cpc_Th	mRNA_30cpc_SN
4641	NLTEYSLSRVDLGD	NLTEYSLSRVDLGD_	17	4	4	4
4641	YLSRVLDGDCIGR	_YLSRVLDGDCIGR	2	1	1	0
4641	YPDAVYLHRIDLGP	YPDAVYLHRIDLGP_	2	1	1	0
4641	ADRVVLTSTRDLGA	ADRVVLTSTRDLGA_	1	0	1	0

alignment	LUThrs	GeneName	start	structure	Group	Score
ADRVVLTSTRDLGA_	X42971	HSV-1-pUL37	980	14aa	mRNA_30cpc_Th	1
NLTEYSLSRVDLGD_	X1574	HSV-1-pUL27	398	14aa	mRNA_30cpc_SN	4
NLTEYSLSRVDLGD_	X1574	HSV-2-pUL27	393	14aa	mRNA_30cpc_SN	4
NLTEYSLSRVDLGD_	X1574	HSV-1-pUL27	398	14aa	mRNA_3cpc_SN	1
NLTEYSLSRVDLGD_	X1574	HSV-2-pUL27	393	14aa	mRNA_3cpc_SN	1
NLTEYSLSRVDLGD_	X1574	HSV-1-pUL27	398	14aa	mRNA_30cpc_Th	4
NLTEYSLSRVDLGD_	X1574	HSV-2-pUL27	393	14aa	mRNA_30cpc_Th	4
NLTEYSLSRVDLGD_	X1574	HSV-1-pUL27	398	14aa	mRNA_3cpc_Th	3
NLTEYSLSRVDLGD_	X1574	HSV-2-pUL27	393	14aa	mRNA_3cpc_Th	3
NLTEYSLSRVDLGD_	X1574	HSV-1-pUL27	398	14aa	mRNA_30cpc_Ctx	4
NLTEYSLSRVDLGD_	X1574	HSV-2-pUL27	393	14aa	mRNA_30cpc_Ctx	4
NLTEYSLSRVDLGD_	X1574	HSV-1-pUL27	398	14aa	mRNA_3cpc_Ctx	1
NLTEYSLSRVDLGD_	X1574	HSV-2-pUL27	393	14aa	mRNA_3cpc_Ctx	1
YPDAVYLHRIDLGP_	X70922	MV-F-CAM-70	440	14aa	mRNA_30cpc_Th	1
YPDAVYLHRIDLGP_	X70922	MV-F-Edmonston	440	14aa	mRNA_30cpc_Th	1
YPDAVYLHRIDLGP_	X70922	MV-F-Halle	440	14aa	mRNA_30cpc_Th	1
YPDAVYLHRIDLGP_	X70922	MV-F-CAM-70	440	14aa	mRNA_30cpc_Ctx	1
YPDAVYLHRIDLGP_	X70922	MV-F-Edmonston	440	14aa	mRNA_30cpc_Ctx	1
YPDAVYLHRIDLGP_	X70922	MV-F-Halle	440	14aa	mRNA_30cpc_Ctx	1
_YLSRVLDGDCIGR	X90770	HSV-1-pUL27	402	14aaG4S	mRNA_30cpc_Th	1
_YLSRVLDGDCIGR	X90770	HSV-2-pUL27	397	14aaG4S	mRNA_30cpc_Th	1
_YLSRVLDGDCIGR	X90770	HSV-1-pUL27	402	14aaG4S	mRNA_30cpc_Ctx	1
_YLSRVLDGDCIGR	X90770	HSV-2-pUL27	397	14aaG4S	mRNA_30cpc_Ctx	1

Peptide SALLPVGQPSHAPSVHLAAATQ from HSV-1-pUL37 with cluster number 6535

Peptide SALLPVGQPSHAPSVHLAAATQ from HSV-1-pUL37 with cluster number 6535



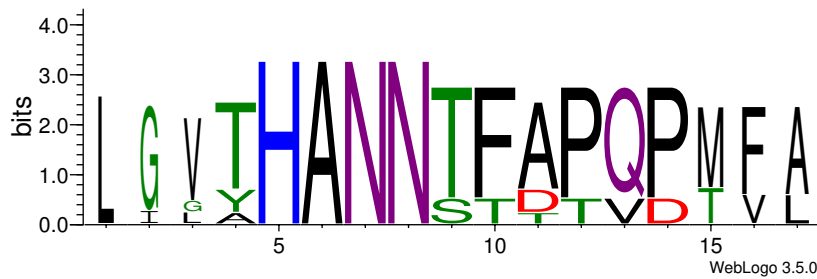
cluster_id	main_sequence	sum	mRNA_30cpc_Ctx	mRNA_30cpc_Th	mRNA_30cpc_SN	mRNA_3cpc_Th	mRNA_3cpc_Ctx	mRNA_3cpc_SN
6535	SALLPVGQPSHAPSVHLAAATQ	21	5	3	2	4	3	2

cluster_id	sequence	alignment	sum	mRNA_30cpc_Ctx	mRNA_30cpc_Th	mRNA_30cpc_SN
6535	SALLPVGQPSHAPSVHLAAATQ	-----SALLPVGQPSHAPSVHLAAATQ	15	2	2	2
6535	VSATAMAPSVDPSEA	-----VSATAMAPSVDPSEA---	2	1	1	0
6535	TPATPLSALLPVGQPSHAPSVH	TPATPLSALLPVGQPSHAPSVH-----	1	1	0	0
6535	SATAMAPSVDPSEAE	-----SATAMAPSVDPSEAE--	1	1	0	0
6535	QPSHAPSVHLAAAT	-----QPSHAPSVHLAAAT_	1	0	0	0
6535	GQPSHAPSVHLAAA	-----GQPSHAPSVHLAAA__	1	0	0	0

alignment	LUTnrs	GeneName	start	structure	Group	Score
-----GQPSHAPSVHLAAA__	X88609	HSV-1-pUL37	586	14aaG4S	mRNA_30cpc_SN_4wks	1
-----QPSHAPSVHLAAAT_	X19194	HSV-1-pUL37	587	14aa	mRNA_3cpc_Th_4wks	1
-----SALLPVGQPSHAPSVHLAAATQ	X12949	HSV-1-pUL37	580	22aa	mRNA_30cpc_SN	2
-----SALLPVGQPSHAPSVHLAAATQ	X12949	HSV-1-pUL37	580	22aa	mRNA_3cpc_SN	2
-----SALLPVGQPSHAPSVHLAAATQ	X12949	HSV-1-pUL37	580	22aa	mRNA_30cpc_Th	2
-----SALLPVGQPSHAPSVHLAAATQ	X12949	HSV-1-pUL37	580	22aa	mRNA_3cpc_Th	4
-----SALLPVGQPSHAPSVHLAAATQ	X12949	HSV-1-pUL37	580	22aa	mRNA_30cpc_Ctx	2
-----SALLPVGQPSHAPSVHLAAATQ	X12949	HSV-1-pUL37	580	22aa	mRNA_3cpc_Ctx	3
-----SATAMAPSVDPSEAE--	X48604	HSV-2-pUS4	367	14aaA5	mRNA_30cpc_Ctx	1
TPATPLSALLPVGQPSHAPSVH-----	X7369	HSV-1-pUL37	574	22aa	mRNA_30cpc_Ctx	1
-----VSATAMAPSVDPSEA---	X66460	HSV-2-pUS4	366	14aa	mRNA_30cpc_Th	1
-----VSATAMAPSVDPSEA---	X66460	HSV-2-pUS4	366	14aa	mRNA_30cpc_Ctx	1

Peptide THANNTFAPQPMFA from HSV-2-pUL34 with cluster number 5849

le THANNTFAPQPMFA from HSV-2-pUL34 with cluster num



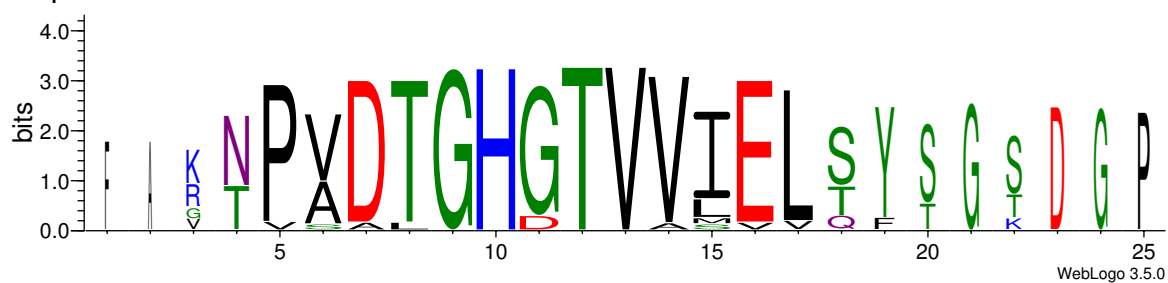
cluster_id	main_sequence	sum	mRNA_30cpc_Ctx	mRNA_30cpc_Th	mRNA_30cpc_SN	mRNA_3cpc_Th	mRNA_3cpc_Ctx	mRNA_3cpc_SN
5849	THANNTFAPQPMFA	21	9	6	3	2	0	0

cluster_id	sequence	alignment	sum	mRNA_30cpc_Ctx	mRNA_30cpc_Th	mRNA_30cpc_SN
5849	THANNTFAPQPMFA	___THANNTFAPQPMFA	8	3	2	1
5849	LGVTHANNTFAPQP	LGVTHANNTFAPQP___	7	3	2	1
5849	YHANNSTDTVDTVL	___YHANNSTDTVDTVL	3	1	1	1
5849	LGLAHANNTFTPQP	LGLAHANNTFTPQP___	1	0	1	0
5849	IGYHANNSTDTVDT	_IGYHANNSTDTVDT__	1	1	0	0
5849	AHANNTFTPQPMFA	___AHANNTFTPQPMFA	1	1	0	0

alignment	LUThrs	GeneName	start	structure	Group	Score
___AHANNTFTPQPMFA	X87271	HSV-1-pUL35	67	14aaG4S	mRNA_30cpc_Ctx	1
_IGYHANNSTDTVDT__	X16551	H1N1-HA	22	14aa	mRNA_30cpc_Ctx	1
_IGYHANNSTDTVDT__	X16551	H2N2-HA	20	14aa	mRNA_30cpc_Ctx	1
_IGYHANNSTDTVDT__	X16551	H5N1-HA	21	14aa	mRNA_30cpc_Ctx	1
LGLAHANNTFTPQP___	X53701	HSV-1-pUL35	64	14aaA5	mRNA_30cpc_Th	1
LGVTHANNTFAPQP___	X53736	HSV-2-pUL34	64	14aaA5	mRNA_30cpc_SN	1
LGVTHANNTFAPQP___	X53736	HSV-2-pUL34	64	14aaA5	mRNA_30cpc_Th	2
LGVTHANNTFAPQP___	X53736	HSV-2-pUL34	64	14aaA5	mRNA_3cpc_Th	1
LGVTHANNTFAPQP___	X53736	HSV-2-pUL34	64	14aaA5	mRNA_30cpc_Ctx	3
___THANNTFAPQPMFA	X47029	HSV-2-pUL34	67	14aaA5	mRNA_30cpc_SN	1
___THANNTFAPQPMFA	X47029	HSV-2-pUL34	67	14aaA5	mRNA_30cpc_Th	2
___THANNTFAPQPMFA	X47029	HSV-2-pUL34	67	14aaA5	mRNA_3cpc_Th	1
___THANNTFAPQPMFA	X6900	HSV-2-pUL34	67	14aa	mRNA_30cpc_Ctx	1
___THANNTFAPQPMFA	X47029	HSV-2-pUL34	67	14aaA5	mRNA_30cpc_Ctx	2
___THANNTFAPQPMFA	X6900	HSV-2-pUL34	67	14aa	mRNA_30cpc_SN_4wks	1
___YHANNSTDTVDTVL	X70760	H1N1-HA	24	14aa	mRNA_30cpc_SN	1
___YHANNSTDTVDTVL	X70760	H1N1-HA	24	14aa	mRNA_30cpc_Th	1
___YHANNSTDTVDTVL	X70760	H1N1-HA	24	14aa	mRNA_30cpc_Ctx	1

Peptide NPVDTGHGTVVIELSYSGSDGP from JEV-E-BN19 with cluster number 5703

: Peptide NPVDTGHGTVVIELSYSGSDGP from JEV-E-BN19 with cluster number 5703



cluster_id	main_sequence	sum	mRNA_30cpc_Ctx	mRNA_30cpc_Th	mRNA_30cpc_SN	mRNA_3cpc_Th	mRNA_3cpc_Ctx	mRNA_3cpc_SN
5703	NPVDTGHGTVVIELSYSGSDGP	21	7	7	4	2	0	0

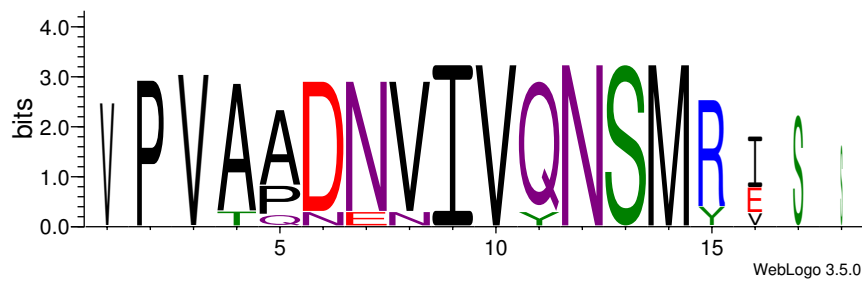
cluster_id	sequence	alignment	sum	mRNA_30cpc_Ctx	mRNA_30cpc_Th	mRNA_30cpc_SN
5703	NPVDTGHGTVVIELSYSGSDGP	__NPVDTGHGTVVIELSYSGSDGP	5	2	1	1
5703	PVDTGHGTVVIELS	___PVDTGHGTVVIELS_____	3	1	1	1
5703	KNPVDTGHGTVVIE	__KNPVDTGHGTVVIE_____	3	1	1	1
5703	FARTPADTGHGTVV	FARTPADTGHGTVV_____	2	1	1	0
5703	ADTGHGTVVIELTY	_____ADTGHGTVVIELTY_____	2	1	1	0
5703	VTVSALGHDTVASV	__VTVSALGHDTVASV_____	1	0	0	0
5703	TVVLELQYTGTDGP	_____TVVLELQYTGTDGP_____	1	0	0	0
5703	TPADTGHGTVVLEL	___TPADTGHGTVVLEL_____	1	0	1	0
5703	PADTGHGTVVIELT	_____PADTGHGTVVIELT_____	1	0	0	1
5703	GTPADTGHGTVVLELQYTGKDG	__GTPADTGHGTVVLELQYTGKDG_	1	0	1	0
5703	GHDTVVMEVTFSGT	_____GHDTVVMEVTFSGT___	1	1	0	0

alignment	LUThrs	GeneName	start	structure	Group	Score
___ADTGHGTVVIELTY_____	X42866	JEV-E-BN19	315	14aa	mRNA_30cpc_Th	1
___ADTGHGTVVIELTY_____	X42866	JEV-E-KE-093	315	14aa	mRNA_30cpc_Th	1
___ADTGHGTVVIELTY_____	X42866	JEV-E-SA14-5-3	315	14aa	mRNA_30cpc_Th	1
___ADTGHGTVVIELTY_____	X42866	JEV-E-ThCMAR4492	315	14aa	mRNA_30cpc_Th	1
___ADTGHGTVVIELTY_____	X42866	JEV-E-BN19	315	14aa	mRNA_30cpc_Ctx	1
___ADTGHGTVVIELTY_____	X42866	JEV-E-KE-093	315	14aa	mRNA_30cpc_Ctx	1
___ADTGHGTVVIELTY_____	X42866	JEV-E-SA14-5-3	315	14aa	mRNA_30cpc_Ctx	1
___ADTGHGTVVIELTY_____	X42866	JEV-E-ThCMAR4492	315	14aa	mRNA_30cpc_Ctx	1
FARTPADTGHGTVV_____	X75795	JEV-E-BN19	310	14aa	mRNA_30cpc_Th	1
FARTPADTGHGTVV_____	X75795	JEV-E-KE-093	310	14aa	mRNA_30cpc_Th	1
FARTPADTGHGTVV_____	X75795	JEV-E-ThCMAR4492	310	14aa	mRNA_30cpc_Th	1
FARTPADTGHGTVV_____	X75795	WNV-E-ArD76104	307	14aa	mRNA_30cpc_Th	1
FARTPADTGHGTVV_____	X75795	WNV-E-H-442	311	14aa	mRNA_30cpc_Th	1
FARTPADTGHGTVV_____	X75795	JEV-E-BN19	310	14aa	mRNA_30cpc_Ctx	1
FARTPADTGHGTVV_____	X75795	JEV-E-KE-093	310	14aa	mRNA_30cpc_Ctx	1
FARTPADTGHGTVV_____	X75795	JEV-E-ThCMAR4492	310	14aa	mRNA_30cpc_Ctx	1
FARTPADTGHGTVV_____	X75795	WNV-E-ArD76104	307	14aa	mRNA_30cpc_Ctx	1
FARTPADTGHGTVV_____	X75795	WNV-E-H-442	311	14aa	mRNA_30cpc_Ctx	1
_____GHDTVMEVTFSGT___	X88580	TBEV-E-4387-B7	322	14aaG4S	mRNA_30cpc_Ctx	1
_____GHDTVMEVTFSGT___	X88580	TBEV-E-80	322	14aaG4S	mRNA_30cpc_Ctx	1
_____GHDTVMEVTFSGT___	X88580	TBEV-E-Simo-9	278	14aaG4S	mRNA_30cpc_Ctx	1
__GTPADTGHGTVVLELQYTGKDG_	X61554	WNV-E-AZ10-918	313	22aa	mRNA_30cpc_Th	1
__GTPADTGHGTVVLELQYTGKDG_	X61554	WNV-E-ArD76104	309	22aa	mRNA_30cpc_Th	1
__GTPADTGHGTVVLELQYTGKDG_	X61554	WNV-E-H-442	313	22aa	mRNA_30cpc_Th	1
__KNPVDTGHGTVVIE_____	X3052	JEV-E-BN19	312	14aa	mRNA_30cpc_SN	1
__KNPVDTGHGTVVIE_____	X3052	JEV-E-KE-093	312	14aa	mRNA_30cpc_SN	1
__KNPVDTGHGTVVIE_____	X3052	JEV-E-SA14-5-3	312	14aa	mRNA_30cpc_SN	1
__KNPVDTGHGTVVIE_____	X3052	JEV-E-ThCMAR4492	312	14aa	mRNA_30cpc_SN	1
__KNPVDTGHGTVVIE_____	X3052	JEV-E-BN19	312	14aa	mRNA_30cpc_Th	1
__KNPVDTGHGTVVIE_____	X3052	JEV-E-KE-093	312	14aa	mRNA_30cpc_Th	1
__KNPVDTGHGTVVIE_____	X3052	JEV-E-SA14-5-3	312	14aa	mRNA_30cpc_Th	1
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__KNPVDTGHGTVVIE_____	X3052	JEV-E-BN19	312	14aa	mRNA_30cpc_Ctx	1
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__KNPVDTGHGTVVIE_____	X3052	JEV-E-ThCMAR4492	312	14aa	mRNA_30cpc_Ctx	1
___NPVDTGHGTVVIELSYSGSDGP	X1377	JEV-E-BN19	313	22aa	mRNA_30cpc_SN	1
___NPVDTGHGTVVIELSYSGSDGP	X1377	JEV-E-KE-093	313	22aa	mRNA_30cpc_SN	1
___NPVDTGHGTVVIELSYSGSDGP	X1377	JEV-E-SA14-5-3	313	22aa	mRNA_30cpc_SN	1
___NPVDTGHGTVVIELSYSGSDGP	X1377	JEV-E-ThCMAR4492	313	22aa	mRNA_30cpc_SN	1
___NPVDTGHGTVVIELSYSGSDGP	X1377	JEV-E-BN19	313	22aa	mRNA_30cpc_Th	1
___NPVDTGHGTVVIELSYSGSDGP	X1377	JEV-E-KE-093	313	22aa	mRNA_30cpc_Th	1
___NPVDTGHGTVVIELSYSGSDGP	X1377	JEV-E-SA14-5-3	313	22aa	mRNA_30cpc_Th	1
___NPVDTGHGTVVIELSYSGSDGP	X1377	JEV-E-ThCMAR4492	313	22aa	mRNA_30cpc_Th	1
___NPVDTGHGTVVIELSYSGSDGP	X1377	JEV-E-BN19	313	22aa	mRNA_3cpc_Th	1
___NPVDTGHGTVVIELSYSGSDGP	X1377	JEV-E-KE-093	313	22aa	mRNA_3cpc_Th	1
___NPVDTGHGTVVIELSYSGSDGP	X1377	JEV-E-SA14-5-3	313	22aa	mRNA_3cpc_Th	1

alignment	LUThrs	GeneName	start	structure	Group	Score
___NPVDTGHGTVVIELSYSGSDGP	X1377	JEV-E-ThCMAr4492	313	22aa	mRNA_3cpc_Th	1
___NPVDTGHGTVVIELSYSGSDGP	X1377	JEV-E-BN19	313	22aa	mRNA_30cpc_Ctx	2
___NPVDTGHGTVVIELSYSGSDGP	X1377	JEV-E-KE-093	313	22aa	mRNA_30cpc_Ctx	2
___NPVDTGHGTVVIELSYSGSDGP	X1377	JEV-E-SA14-5-3	313	22aa	mRNA_30cpc_Ctx	2
___NPVDTGHGTVVIELSYSGSDGP	X1377	JEV-E-ThCMAr4492	313	22aa	mRNA_30cpc_Ctx	2
___PADTGHGTVVIELT_____	X23538	JEV-E-BN19	314	14aa	mRNA_30cpc_SN	1
___PADTGHGTVVIELT_____	X23538	JEV-E-KE-093	314	14aa	mRNA_30cpc_SN	1
___PADTGHGTVVIELT_____	X23538	JEV-E-SA14-5-3	314	14aa	mRNA_30cpc_SN	1
___PADTGHGTVVIELT_____	X23538	JEV-E-ThCMAr4492	314	14aa	mRNA_30cpc_SN	1
___PVDTGHGTVVIELS_____	X24219	JEV-E-BN19	314	14aa	mRNA_30cpc_SN	1
___PVDTGHGTVVIELS_____	X24219	JEV-E-KE-093	314	14aa	mRNA_30cpc_SN	1
___PVDTGHGTVVIELS_____	X24219	JEV-E-SA14-5-3	314	14aa	mRNA_30cpc_SN	1
___PVDTGHGTVVIELS_____	X24219	JEV-E-ThCMAr4492	314	14aa	mRNA_30cpc_SN	1
___PVDTGHGTVVIELS_____	X24219	JEV-E-BN19	314	14aa	mRNA_30cpc_Th	1
___PVDTGHGTVVIELS_____	X24219	JEV-E-KE-093	314	14aa	mRNA_30cpc_Th	1
___PVDTGHGTVVIELS_____	X24219	JEV-E-SA14-5-3	314	14aa	mRNA_30cpc_Th	1
___PVDTGHGTVVIELS_____	X24219	JEV-E-ThCMAr4492	314	14aa	mRNA_30cpc_Th	1
___PVDTGHGTVVIELS_____	X24219	JEV-E-BN19	314	14aa	mRNA_30cpc_Ctx	1
___PVDTGHGTVVIELS_____	X24219	JEV-E-KE-093	314	14aa	mRNA_30cpc_Ctx	1
___PVDTGHGTVVIELS_____	X24219	JEV-E-SA14-5-3	314	14aa	mRNA_30cpc_Ctx	1
___PVDTGHGTVVIELS_____	X24219	JEV-E-ThCMAr4492	314	14aa	mRNA_30cpc_Ctx	1
___TPADTGHGTVVLEL_____	X7384	JEV-E-BN19	313	14aa	mRNA_30cpc_Th	1
___TPADTGHGTVVLEL_____	X7384	JEV-E-KE-093	313	14aa	mRNA_30cpc_Th	1
___TPADTGHGTVVLEL_____	X7384	JEV-E-ThCMAr4492	313	14aa	mRNA_30cpc_Th	1
___TPADTGHGTVVLEL_____	X7384	WNV-E-AZ10-918	314	14aa	mRNA_30cpc_Th	1
___TPADTGHGTVVLEL_____	X7384	WNV-E-ArD76104	310	14aa	mRNA_30cpc_Th	1
___TPADTGHGTVVLEL_____	X7384	WNV-E-H-442	314	14aa	mRNA_30cpc_Th	1
_____TVVLELQYTGTGDP	X47672	WNV-E-AZ10-918	322	14aaA5	mRNA_30cpc_Th_4wks	1
_____TVVLELQYTGTGDP	X47672	WNV-E-ArD76104	318	14aaA5	mRNA_30cpc_Th_4wks	1
_____TVVLELQYTGTGDP	X47672	WNV-E-H-442	322	14aaA5	mRNA_30cpc_Th_4wks	1
__VTVSALGHDTVASV_____	X66203	TMEV-VP-DQ401688.1	131	14aa	mRNA_3cpc_Th	1
__VTVSALGHDTVASV_____	X66203	TMEV-VP1-M20301.1	129	14aa	mRNA_3cpc_Th	1

Peptide PVAADNVIVQNSMR from HSV-1-pUL27 with cluster number 6514

ide PVAADNVIVQNSMR from HSV-1-pUL27 with cluster numb



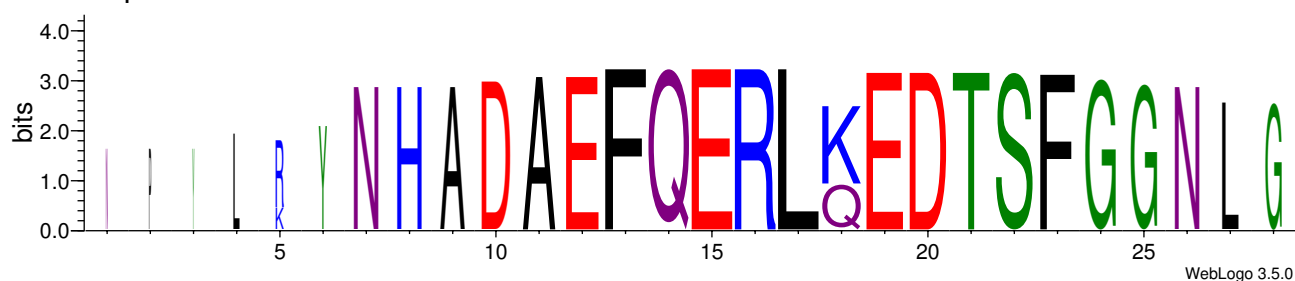
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6514	PVAADNVIVQNSMR	20	7	3	7	3	0	0

cluster_id	sequence	alignment	sum	mRNA_30cpc_Ctx	mRNA_30cpc_Th	mRNA_30cpc_SN
6514	PVAADNVIVQNSMR	_PVAADNVIVQNSMR_	6	1	0	3
6514	VPVAPDNVIVQNSM	VPVAPDNVIVQNSM_	4	2	1	1
6514	VPVAADNVIVQNSM	VPVAADNVIVQNSM_	3	1	1	1
6514	AADNVIVQNSMRIS	___AADNVIVQNSMRIS_	3	1	0	1
6514	VTQENIVYNSMYE	__VTQENIVYNSMYE__	2	1	1	0
6514	APDNVIVQNSMRVS	___APDNVIVQNSMRVS_	1	1	0	0
6514	ADNVIVQNSMRISS	____ADNVIVQNSMRISS	1	0	0	1

alignment	LUThrs	GeneName	start	structure	Group	Score
___AADNVIVQNSMRIS_	X43663	HSV-1-pUL27	577	14aa	mRNA_30cpc_SN	1
___AADNVIVQNSMRIS_	X43663	HSV-2-pUL27	574	14aa	mRNA_30cpc_SN	1
___AADNVIVQNSMRIS_	X56566	HSV-1-pUL27	577	14aaA5	mRNA_3cpc_Th	1
___AADNVIVQNSMRIS_	X56566	HSV-2-pUL27	574	14aaA5	mRNA_3cpc_Th	1
___AADNVIVQNSMRIS_	X43663	HSV-1-pUL27	577	14aa	mRNA_30cpc_Ctx	1
___AADNVIVQNSMRIS_	X43663	HSV-2-pUL27	574	14aa	mRNA_30cpc_Ctx	1
___ADNVIVQNSMRISS	X42837	HSV-1-pUL27	578	14aa	mRNA_30cpc_SN	1
___ADNVIVQNSMRISS	X42837	HSV-2-pUL27	575	14aa	mRNA_30cpc_SN	1
___APDNVIVQNSMRVS_	X41804	HSV-1-pUL27	577	14aa	mRNA_30cpc_Ctx	1
___APDNVIVQNSMRVS_	X41804	HSV-2-pUL27	574	14aa	mRNA_30cpc_Ctx	1
PVAADNVIVQNSMR	X24296	HSV-1-pUL27	575	14aa	mRNA_30cpc_SN	3
PVAADNVIVQNSMR	X24296	HSV-2-pUL27	572	14aa	mRNA_30cpc_SN	3
PVAADNVIVQNSMR	X24296	HSV-1-pUL27	575	14aa	mRNA_3cpc_Th	2
PVAADNVIVQNSMR	X24296	HSV-2-pUL27	572	14aa	mRNA_3cpc_Th	2
PVAADNVIVQNSMR	X24296	HSV-1-pUL27	575	14aa	mRNA_30cpc_Ctx	1
PVAADNVIVQNSMR	X24296	HSV-2-pUL27	572	14aa	mRNA_30cpc_Ctx	1
VPVAADNVIVQNSM_	X67321	HSV-1-pUL27	574	14aa	mRNA_30cpc_SN	1
VPVAADNVIVQNSM_	X67321	HSV-2-pUL27	571	14aa	mRNA_30cpc_SN	1
VPVAADNVIVQNSM_	X67321	HSV-1-pUL27	574	14aa	mRNA_30cpc_Th	1
VPVAADNVIVQNSM_	X67321	HSV-2-pUL27	571	14aa	mRNA_30cpc_Th	1
VPVAADNVIVQNSM_	X67321	HSV-1-pUL27	574	14aa	mRNA_30cpc_Ctx	1
VPVAADNVIVQNSM_	X67321	HSV-2-pUL27	571	14aa	mRNA_30cpc_Ctx	1
VPVAPDNVIVQNSM_	X67319	HSV-1-pUL27	574	14aa	mRNA_30cpc_SN	1
VPVAPDNVIVQNSM_	X67319	HSV-2-pUL27	571	14aa	mRNA_30cpc_SN	1
VPVAPDNVIVQNSM_	X67319	HSV-1-pUL27	574	14aa	mRNA_30cpc_Th	1
VPVAPDNVIVQNSM_	X67319	HSV-2-pUL27	571	14aa	mRNA_30cpc_Th	1
VPVAPDNVIVQNSM_	X67319	HSV-1-pUL27	574	14aa	mRNA_30cpc_Ctx	2
VPVAPDNVIVQNSM_	X67319	HSV-2-pUL27	571	14aa	mRNA_30cpc_Ctx	2
__VTQENIVYNSMYE__	X66040	BoNT-C-Hc	63	14aa	mRNA_30cpc_Th	1
__VTQENIVYNSMYE__	X66040	BoNT-C-Hc	63	14aa	mRNA_30cpc_Ctx	1

Peptide NHADAEFQERLKEDTSFGGNLG from AAV1-VP1 with cluster number 4159

Peptide NHADAEFQERLKEDTSFGGNLG from AAV1-VP1 with cluster number 4159



cluster_id	main_sequence	sum	mRNA_30cpc_Ctx	mRNA_30cpc_Th	mRNA_30cpc_SN	mRNA_3cpc_Th	mRNA_3cpc_Ctx	mRNA_3cpc_SN
4159	NHADAEFQERLKEDTSFGGNLG	20	8	4	4	2	0	0

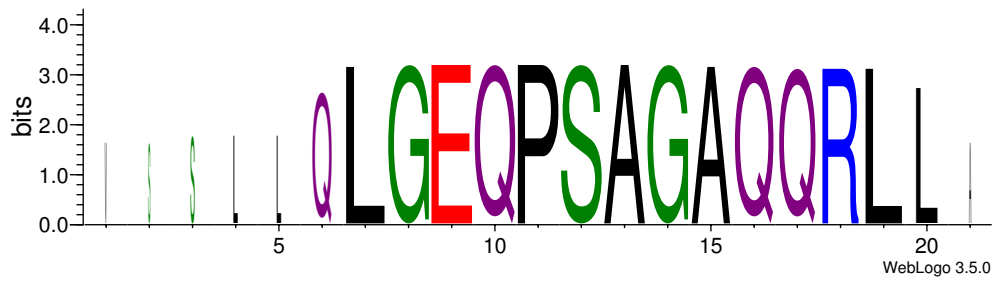
cluster_id	sequence	alignment	sum	mRNA_30cpc_Ctx	mRNA_30cpc_Th	mRNA_30cpc_SN
4159	NHADAEFQERLKEDTSFGGNLG	_____NHADAEFQERLKEDTSFGGNLG	8	2	2	3
4159	FQERLQEDTSFGGN	_____FQERLQEDTSFGGN__	4	2	0	1
4159	AEFQERLKEDTSFG	_____AEFQERLKEDTSFG_	2	0	1	0
4159	RYNHADAEFQERLQ	___RYNHADAEFQERLQ_____	1	1	0	0
4159	NPYLRYNHADAEFQERLQEDTS	NPYLRYNHADAEFQERLQEDTS_	1	0	0	0
4159	LRYNHADAEFQERL	___LRYNHADAEFQERL_____	1	1	0	0
4159	LKYNHADAEFQERLKEDTSFGG	___LKYNHADAEFQERLKEDTSFGG_	1	0	1	0
4159	DAEFQERLQEDTSF	_____DAEFQERLQEDTSF_____	1	1	0	0
4159	DAEFQERLKEDTSF	_____DAEFQERLKEDTSF_____	1	1	0	0

alignment	LUThrs	GeneName	start	structure	Group	Score
-----AEFQERLKEDTSFG-----	X43336	AAV1-VP1	98	14aa	mRNA_30cpc_Th	1
-----AEFQERLKEDTSFG-----	X43336	AAV6-VP1	98	14aa	mRNA_30cpc_Th	1
-----AEFQERLKEDTSFG-----	X43336	AAV8-VP1	98	14aa	mRNA_30cpc_Th	1
-----AEFQERLKEDTSFG-----	X43336	AAV9-VP1	98	14aa	mRNA_30cpc_Th	1
-----AEFQERLKEDTSFG-----	X43336	AAV1-VP1	98	14aa	mRNA_30cpc_Th_4wks	1
-----AEFQERLKEDTSFG-----	X43336	AAV6-VP1	98	14aa	mRNA_30cpc_Th_4wks	1
-----AEFQERLKEDTSFG-----	X43336	AAV8-VP1	98	14aa	mRNA_30cpc_Th_4wks	1
-----AEFQERLKEDTSFG-----	X43336	AAV9-VP1	98	14aa	mRNA_30cpc_Th_4wks	1
-----DAEFQERLKEDTSF-----	X35932	AAV1-VP1	97	14aa	mRNA_30cpc_Ctx	1
-----DAEFQERLKEDTSF-----	X35932	AAV6-VP1	97	14aa	mRNA_30cpc_Ctx	1
-----DAEFQERLKEDTSF-----	X35932	AAV8-VP1	97	14aa	mRNA_30cpc_Ctx	1
-----DAEFQERLKEDTSF-----	X35932	AAV9-VP1	97	14aa	mRNA_30cpc_Ctx	1
-----DAEFQERLQEDTSF-----	X35934	AAV1-VP1	97	14aa	mRNA_30cpc_Ctx	1
-----DAEFQERLQEDTSF-----	X35934	AAV6-VP1	97	14aa	mRNA_30cpc_Ctx	1
-----DAEFQERLQEDTSF-----	X35934	AAV8-VP1	97	14aa	mRNA_30cpc_Ctx	1
-----DAEFQERLQEDTSF-----	X35934	AAV9-VP1	97	14aa	mRNA_30cpc_Ctx	1
-----FQERLQEDTSFGGN-----	X75117	AAV1-VP1	100	14aa	mRNA_30cpc_SN	1
-----FQERLQEDTSFGGN-----	X75117	AAV6-VP1	100	14aa	mRNA_30cpc_SN	1
-----FQERLQEDTSFGGN-----	X75117	AAV8-VP1	100	14aa	mRNA_30cpc_SN	1
-----FQERLQEDTSFGGN-----	X75117	AAV9-VP1	100	14aa	mRNA_30cpc_SN	1
-----FQERLQEDTSFGGN-----	X75117	AAV1-VP1	100	14aa	mRNA_30cpc_Ctx	1
-----FQERLQEDTSFGGN-----	X60663	AAV1-VP1	100	14aaA5	mRNA_30cpc_Ctx	1
-----FQERLQEDTSFGGN-----	X75117	AAV6-VP1	100	14aa	mRNA_30cpc_Ctx	1
-----FQERLQEDTSFGGN-----	X60663	AAV6-VP1	100	14aaA5	mRNA_30cpc_Ctx	1
-----FQERLQEDTSFGGN-----	X75117	AAV8-VP1	100	14aa	mRNA_30cpc_Ctx	1
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-----FQERLQEDTSFGGN-----	X75117	AAV9-VP1	100	14aa	mRNA_30cpc_Ctx	1
-----FQERLQEDTSFGGN-----	X60663	AAV9-VP1	100	14aaA5	mRNA_30cpc_Ctx	1
-----FQERLQEDTSFGGN-----	X75117	AAV1-VP1	100	14aa	mRNA_30cpc_SN_4wks	1
-----FQERLQEDTSFGGN-----	X75117	AAV6-VP1	100	14aa	mRNA_30cpc_SN_4wks	1
-----FQERLQEDTSFGGN-----	X75117	AAV8-VP1	100	14aa	mRNA_30cpc_SN_4wks	1
-----FQERLQEDTSFGGN-----	X75117	AAV9-VP1	100	14aa	mRNA_30cpc_SN_4wks	1
___LKYNHADAEFQERLKEDTSFGG___	X28745	AAV1-VP1	91	22aa	mRNA_30cpc_Th	1
___LKYNHADAEFQERLKEDTSFGG___	X28745	AAV6-VP1	91	22aa	mRNA_30cpc_Th	1
___LKYNHADAEFQERLKEDTSFGG___	X28745	AAV8-VP1	91	22aa	mRNA_30cpc_Th	1
___LKYNHADAEFQERLKEDTSFGG___	X28745	AAV9-VP1	91	22aa	mRNA_30cpc_Th	1
___LRYNHADAEFQERL_____	X53240	AAV1-VP1	91	14aaA5	mRNA_30cpc_Ctx	1
___LRYNHADAEFQERL_____	X53240	AAV6-VP1	91	14aaA5	mRNA_30cpc_Ctx	1
___LRYNHADAEFQERL_____	X53240	AAV8-VP1	91	14aaA5	mRNA_30cpc_Ctx	1
___LRYNHADAEFQERL_____	X53240	AAV9-VP1	91	14aaA5	mRNA_30cpc_Ctx	1
-----NHADAEFQERLKEDTSFGGNLTG	X1081	AAV1-VP1	94	22aa	mRNA_30cpc_SN	3
-----NHADAEFQERLKEDTSFGGNLTG	X1081	AAV6-VP1	94	22aa	mRNA_30cpc_SN	3
-----NHADAEFQERLKEDTSFGGNLTG	X1081	AAV8-VP1	94	22aa	mRNA_30cpc_SN	3
-----NHADAEFQERLKEDTSFGGNLTG	X1081	AAV9-VP1	94	22aa	mRNA_30cpc_SN	3
-----NHADAEFQERLKEDTSFGGNLTG	X1081	AAV1-VP1	94	22aa	mRNA_30cpc_Th	2
-----NHADAEFQERLKEDTSFGGNLTG	X1081	AAV6-VP1	94	22aa	mRNA_30cpc_Th	2
-----NHADAEFQERLKEDTSFGGNLTG	X1081	AAV8-VP1	94	22aa	mRNA_30cpc_Th	2

alignment	LUThrs	GeneName	start	structure	Group	Score
_____NHADAEFQERLKEDTSFGGNLG	X1081	AAV9-VP1	94	22aa	mRNA_30cpc_Th	2
_____NHADAEFQERLKEDTSFGGNLG	X1081	AAV1-VP1	94	22aa	mRNA_3cpc_Th	1
_____NHADAEFQERLKEDTSFGGNLG	X1081	AAV6-VP1	94	22aa	mRNA_3cpc_Th	1
_____NHADAEFQERLKEDTSFGGNLG	X1081	AAV8-VP1	94	22aa	mRNA_3cpc_Th	1
_____NHADAEFQERLKEDTSFGGNLG	X1081	AAV9-VP1	94	22aa	mRNA_3cpc_Th	1
_____NHADAEFQERLKEDTSFGGNLG	X1081	AAV1-VP1	94	22aa	mRNA_30cpc_Ctx	2
_____NHADAEFQERLKEDTSFGGNLG	X1081	AAV6-VP1	94	22aa	mRNA_30cpc_Ctx	2
_____NHADAEFQERLKEDTSFGGNLG	X1081	AAV8-VP1	94	22aa	mRNA_30cpc_Ctx	2
_____NHADAEFQERLKEDTSFGGNLG	X1081	AAV9-VP1	94	22aa	mRNA_30cpc_Ctx	2
NPYLRYNHADAEFQERLQEDTS_____	X1397	AAV1-VP1	88	22aa	mRNA_3cpc_Th	1
NPYLRYNHADAEFQERLQEDTS_____	X1397	AAV6-VP1	88	22aa	mRNA_3cpc_Th	1
NPYLRYNHADAEFQERLQEDTS_____	X1397	AAV8-VP1	88	22aa	mRNA_3cpc_Th	1
NPYLRYNHADAEFQERLQEDTS_____	X1397	AAV9-VP1	88	22aa	mRNA_3cpc_Th	1
____RYNHADAEFQERLQ_____	X27918	AAV1-VP1	92	14aa	mRNA_30cpc_Ctx	1
____RYNHADAEFQERLQ_____	X27918	AAV6-VP1	92	14aa	mRNA_30cpc_Ctx	1
____RYNHADAEFQERLQ_____	X27918	AAV8-VP1	92	14aa	mRNA_30cpc_Ctx	1
____RYNHADAEFQERLQ_____	X27918	AAV9-VP1	92	14aa	mRNA_30cpc_Ctx	1

Peptide LGEQPSAGAQQRLL from HSV-1-pUL37 with cluster number 6530

Peptide LGEQPSAGAQQRLL from HSV-1-pUL37 with cluster number 6530



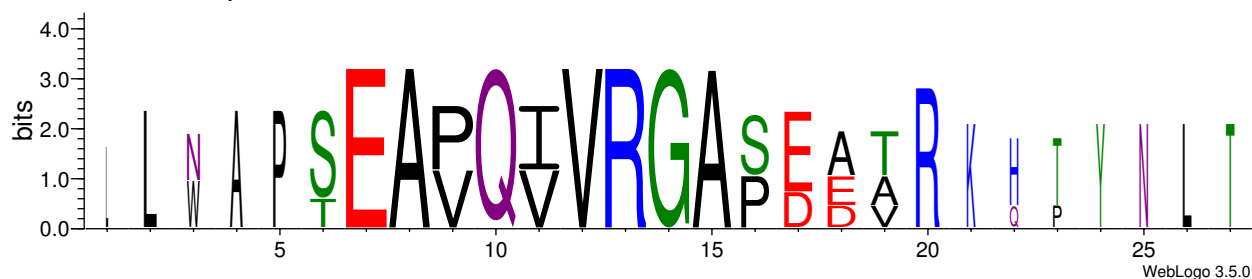
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6530	LGEQPSAGAQQRLL	19	5	2	4	6	2	0

cluster_id	sequence	alignment	sum	mRNA_30cpc_Ctx	mRNA_30cpc_Th	mRNA_30cpc_SN
6530	LGEQPSAGAQQRLL	_____LGEQPSAGAQQRLL_	9	1	0	1
6530	QLGEQPSAGAQQRL	_____QLGEQPSAGAQQRL__	7	2	2	2
6530	VSSLLQLGEQPSAG	VSSLLQLGEQPSAG_____	1	1	0	0
6530	SLLQLGEQPSAGAQ	__SLLQLGEQPSAGAQ_____	1	0	0	1
6530	GEQPSAGAQQRLLA	_____GEQPSAGAQQRLLA	1	1	0	0

alignment	LUThrs	GeneName	start	structure	Group	Score
_____GEQPSAGAQQRLLA	X63808	HSV-1-pUL37	380	14aa	mRNA_30cpc_Ctx	1
_____LGEQPSAGAQQRLL_	X32561	HSV-1-pUL37	379	14aa	mRNA_30cpc_SN	1
_____LGEQPSAGAQQRLL_	X32561	HSV-1-pUL37	379	14aa	mRNA_3cpc_Th	5
_____LGEQPSAGAQQRLL_	X32561	HSV-1-pUL37	379	14aa	mRNA_30cpc_Ctx	1
_____LGEQPSAGAQQRLL_	X32561	HSV-1-pUL37	379	14aa	mRNA_3cpc_Ctx	2
_____QLGEQPSAGAQQRL__	X19616	HSV-1-pUL37	378	14aa	mRNA_30cpc_SN	2
_____QLGEQPSAGAQQRL__	X19616	HSV-1-pUL37	378	14aa	mRNA_30cpc_Th	2
_____QLGEQPSAGAQQRL__	X19616	HSV-1-pUL37	378	14aa	mRNA_3cpc_Th	1
_____QLGEQPSAGAQQRL__	X19616	HSV-1-pUL37	378	14aa	mRNA_30cpc_Ctx	2
__SLLQLGEQPSAGAQ_____	X12207	HSV-1-pUL37	375	14aa	mRNA_30cpc_SN	1
VSSLLQLGEQPSAG_____	X66331	HSV-1-pUL37	373	14aa	mRNA_30cpc_Ctx	1

Peptide EAVQVVRGAPEATR from BV-G with cluster number 6490

Peptide EAVQVVRGAPEATR from BV-G with cluster number 6490



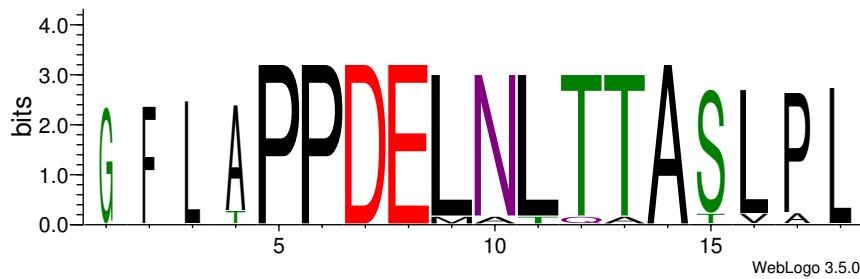
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6490	EAVQVVRGAPEATR	19	6	2	5	3	1	0

cluster_id	sequence	alignment	sum	mRNA_30cpc_Ctx	mRNA_30cpc_Th	mRNA_30cpc_SN
6490	EAVQVVRGAPEATR	_____EAVQVVRGAPEATR_____	6	1	0	1
6490	SEAPQIVRGASDEARKHTYNLT	_____SEAPQIVRGASDEARKHTYNLT	3	2	1	0
6490	LWAPTEAVQVVRGA	____LWAPTEAVQVVRGA_____	3	1	1	1
6490	SEAPQIVRGASEDV	_____SEAPQIVRGASEDV_____	2	0	0	1
6490	LNAPSEAPQIVRGA	____LNAPSEAPQIVRGA_____	2	1	0	1
6490	SEAPQIVRGASEDVRKQPYNLT	_____SEAPQIVRGASEDVRKQPYNLT	1	1	0	0
6490	LLNAPSEAPQIVRG	____LLNAPSEAPQIVRG_____	1	0	0	1
6490	EAPQIVRGASDEAR	_____EAPQIVRGASDEAR_____	1	0	0	0

alignment	LUThrs	GeneName	start	structure	Group	Score
_____EAPQIVRGASDEAR_____	X38813	HSV-1-pUS6	101	14aa	mRNA_3cpc_Th_4wks	1
_____EAPQIVRGASDEAR_____	X38813	HSV-2-pUS6	101	14aa	mRNA_3cpc_Th_4wks	1
_____EAVQVVRGAPEATR_____	X38953	BV-G	100	14aa	mRNA_30cpc_SN	1
_____EAVQVVRGAPEATR_____	X38953	BV-G	100	14aa	mRNA_3cpc_Th	3
_____EAVQVVRGAPEATR_____	X38953	BV-G	100	14aa	mRNA_30cpc_Ctx	1
_____EAVQVVRGAPEATR_____	X38953	BV-G	100	14aa	mRNA_3cpc_Ctx	1
LLNAPSEAPQIVRG_____	X30779	HSV-1-pUS6	95	14aa	mRNA_30cpc_SN	1
LLNAPSEAPQIVRG_____	X30779	HSV-2-pUS6	95	14aa	mRNA_30cpc_SN	1
____LNAPSEAPQIVRGA_____	X28462	HSV-1-pUS6	96	14aa	mRNA_30cpc_SN	1
____LNAPSEAPQIVRGA_____	X28462	HSV-2-pUS6	96	14aa	mRNA_30cpc_SN	1
____LNAPSEAPQIVRGA_____	X28462	HSV-1-pUS6	96	14aa	mRNA_30cpc_Ctx	1
____LNAPSEAPQIVRGA_____	X28462	HSV-2-pUS6	96	14aa	mRNA_30cpc_Ctx	1
____LWAPTEAVQVVRGA_____	X33474	BV-G	95	14aa	mRNA_30cpc_SN	1
____LWAPTEAVQVVRGA_____	X33474	BV-G	95	14aa	mRNA_30cpc_Th	1
____LWAPTEAVQVVRGA_____	X33474	BV-G	95	14aa	mRNA_30cpc_Ctx	1
_____SEAPQIVRGASDEARKHTYNLT	X12720	HSV-1-pUS6	100	22aa	mRNA_30cpc_Th	1
_____SEAPQIVRGASDEARKHTYNLT	X12720	HSV-2-pUS6	100	22aa	mRNA_30cpc_Th	1
_____SEAPQIVRGASDEARKHTYNLT	X12720	HSV-1-pUS6	100	22aa	mRNA_30cpc_Ctx	2
_____SEAPQIVRGASDEARKHTYNLT	X12720	HSV-2-pUS6	100	22aa	mRNA_30cpc_Ctx	2
_____SEAPQIVRGASEDV_____	X12723	HSV-1-pUS6	100	14aa	mRNA_30cpc_SN	1
_____SEAPQIVRGASEDV_____	X12723	HSV-2-pUS6	100	14aa	mRNA_30cpc_SN	1
_____SEAPQIVRGASEDV_____	X12723	HSV-1-pUS6	100	14aa	mRNA_30cpc_SN_4wks	1
_____SEAPQIVRGASEDV_____	X12723	HSV-2-pUS6	100	14aa	mRNA_30cpc_SN_4wks	1
_____SEAPQIVRGASEDVRKQPYNLT	X12722	HSV-1-pUS6	100	22aa	mRNA_30cpc_Ctx	1
_____SEAPQIVRGASEDVRKQPYNLT	X12722	HSV-2-pUS6	100	22aa	mRNA_30cpc_Ctx	1

Peptide PPDELNLTTASLPL from HSV-1-pUL22 with cluster number 6466

Peptide PPDELNLTTASLPL from HSV-1-pUL22 with cluster number 6466



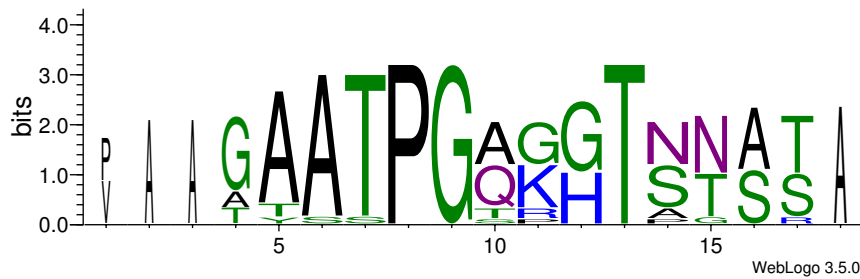
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6466	PPDELNLTTASLPL	19	3	4	3	5	2	1

cluster_id	sequence	alignment	sum	mRNA_30cpc_Ctx	mRNA_30cpc_Th	mRNA_30cpc_SN
6466	PPDELNLTTASLPL	___PPDELNLTTASLPL	10	1	1	1
6466	GFLAPPDELNLTTA	GFLAPPDELNLTTA___	6	1	2	2
6466	TPPDEMATQAATVA	___TPPDEMATQAATVA_	1	0	0	0
6466	LAPPDELNLTTASL	__LAPPDELNLTTASL__	1	0	1	0
6466	APPDELNLTTASLP	___APPDELNLTTASLP_	1	1	0	0

alignment	LUThrs	GeneName	start	structure	Group	Score
___APPDELNLTTASLP_	X41723	HSV-1-pUL22	67	14aa	mRNA_30cpc_Ctx	1
___APPDELNLTTASLP_	X41723	HSV-2-pUL22	67	14aa	mRNA_30cpc_Ctx	1
GFLAPPDELNLTTA___	X58146	HSV-1-pUL22	64	14aaA5	mRNA_30cpc_SN	2
GFLAPPDELNLTTA___	X58146	HSV-2-pUL22	65	14aaA5	mRNA_30cpc_SN	2
GFLAPPDELNLTTA___	X58146	HSV-1-pUL22	64	14aaA5	mRNA_30cpc_Th	2
GFLAPPDELNLTTA___	X58146	HSV-2-pUL22	65	14aaA5	mRNA_30cpc_Th	2
GFLAPPDELNLTTA___	X58146	HSV-1-pUL22	64	14aaA5	mRNA_3cpc_Th	1
GFLAPPDELNLTTA___	X58146	HSV-2-pUL22	65	14aaA5	mRNA_3cpc_Th	1
GFLAPPDELNLTTA___	X58146	HSV-1-pUL22	64	14aaA5	mRNA_30cpc_Ctx	1
GFLAPPDELNLTTA___	X58146	HSV-2-pUL22	65	14aaA5	mRNA_30cpc_Ctx	1
__LAPPDELNLTTASL__	X31924	HSV-1-pUL22	66	14aa	mRNA_30cpc_Th	1
__LAPPDELNLTTASL__	X31924	HSV-2-pUL22	66	14aa	mRNA_30cpc_Th	1
___PPDELNLTTASLPL	X22100	HSV-1-pUL22	68	14aa	mRNA_30cpc_SN	1
___PPDELNLTTASLPL	X22100	HSV-2-pUL22	68	14aa	mRNA_30cpc_SN	1
___PPDELNLTTASLPL	X22100	HSV-1-pUL22	68	14aa	mRNA_3cpc_SN	1
___PPDELNLTTASLPL	X22100	HSV-2-pUL22	68	14aa	mRNA_3cpc_SN	1
___PPDELNLTTASLPL	X22100	HSV-1-pUL22	68	14aa	mRNA_30cpc_Th	1
___PPDELNLTTASLPL	X22100	HSV-2-pUL22	68	14aa	mRNA_30cpc_Th	1
___PPDELNLTTASLPL	X22100	HSV-1-pUL22	68	14aa	mRNA_3cpc_Th	4
___PPDELNLTTASLPL	X22100	HSV-2-pUL22	68	14aa	mRNA_3cpc_Th	4
___PPDELNLTTASLPL	X22100	HSV-1-pUL22	68	14aa	mRNA_30cpc_Ctx	1
___PPDELNLTTASLPL	X22100	HSV-2-pUL22	68	14aa	mRNA_30cpc_Ctx	1
___PPDELNLTTASLPL	X22100	HSV-1-pUL22	68	14aa	mRNA_3cpc_Ctx	2
___PPDELNLTTASLPL	X22100	HSV-2-pUL22	68	14aa	mRNA_3cpc_Ctx	2
___TPPDEMATQAATVA_	X47136	HSV-2-pUS4	388	14aaA5	mRNA_30cpc_Th_4wks	1

Peptide GAATPGQKGTSNAT from Tau with cluster number 5325

Peptide GAATPGQKGTSNAT from Tau with cluster number 53



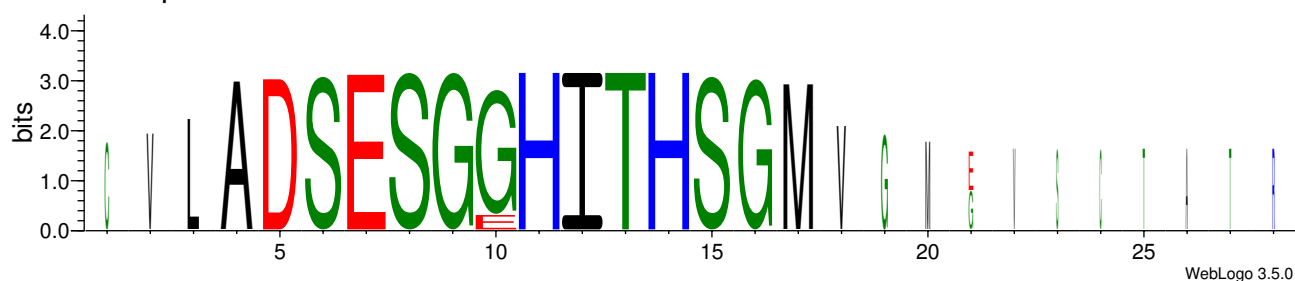
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5325	GAATPGQKGTSNAT	19	5	4	5	4	1	0

cluster_id	sequence	alignment	sum	mRNA_30cpc_Ctx	mRNA_30cpc_Th	mRNA_30cpc_SN
5325	GAATPGQKGTSNAT	___GAATPGQKGTSNAT_	8	2	2	2
5325	AATPGAGHTNTSSA	____AATPGAGHTNTSSA	6	2	1	2
5325	VAATTATPGTRGTA	VAATTATPGTRGTA_____	2	1	0	1
5325	PAAAAATPGAGHTN	PAAAAATPGAGHTN_____	2	0	0	0
5325	GYSSPGSPGTPGSR	___GYSSPGSPGTPGSR_	1	0	1	0

alignment	LUThrs	GeneName	start	structure	Group	Score
____AATPGAGHTNTSSA	X43412	HSV-2-pUS4	428	14aa	mRNA_30cpc_SN	2
____AATPGAGHTNTSSA	X43412	HSV-2-pUS4	428	14aa	mRNA_30cpc_Th	1
____AATPGAGHTNTSSA	X43412	HSV-2-pUS4	428	14aa	mRNA_3cpc_Th	1
____AATPGAGHTNTSSA	X43412	HSV-2-pUS4	428	14aa	mRNA_30cpc_Ctx	2
___GAATPGQKGTSNAT_	X64244	Tau	401	14aa	mRNA_30cpc_SN	2
___GAATPGQKGTSNAT_	X64244	Tau	401	14aa	mRNA_30cpc_Th	2
___GAATPGQKGTSNAT_	X64244	Tau	401	14aa	mRNA_3cpc_Th	2
___GAATPGQKGTSNAT_	X64244	Tau	401	14aa	mRNA_30cpc_Ctx	2
___GYSSPGSPGTPGSR_	X65114	Tau	441	14aa	mRNA_30cpc_Th	1
PAAAAATPGAGHTN_____	X23623	HSV-2-pUS4	424	14aa	mRNA_3cpc_Th	1
PAAAAATPGAGHTN_____	X23623	HSV-2-pUS4	424	14aa	mRNA_3cpc_Ctx	1
VAATTATPGTRGTA_____	X68744	HSV-2-pUS4	515	14aa	mRNA_30cpc_SN	1
VAATTATPGTRGTA_____	X68744	HSV-2-pUS4	515	14aa	mRNA_30cpc_Ctx	1

Peptide ADSESGGHITHSGM from MV-H-Edmonston with cluster number 6564

Peptide ADSESGGHITHSGM from MV-H-Edmonston with cluster number 6564



cluster_id	main_sequence	sum	mRNA_30cpc_Ctx	mRNA_30cpc_Th	mRNA_30cpc_SN	mRNA_3cpc_Th	mRNA_3cpc_Ctx	mRNA_3cpc_SN
6564	ADSESGGHITHSGM	18	4	1	4	5	3	0

cluster_id	sequence	alignment	sum	mRNA_30cpc_Ctx	mRNA_30cpc_Th	mRNA_30cpc_SN
6564	ADSESGGHITHSGM	___ADSESGGHITHSGM_____	9	2	0	0
6564	LADSESGGHITHSG	__LADSESGGHITHSG_____	2	1	0	1
6564	CVLADSESGGHITH	CVLADSESGGHITH_____	2	1	0	1
6564	VLADSESGGHITHS	_VLADSESGGHITHS_____	1	0	0	0
6564	SGEHITHSGMVGME	_____SGEHITHSGMVGME_____	1	0	0	0
6564	SESGGHITHSGMVG	_____SESGGHITHSGMVG_____	1	0	0	1
6564	ESGGHITHSGMVGMGVSCTATR	_____ESGGHITHSGMVGMGVSCTATR	1	0	0	1
6564	DSESGEHITHSGMV	____DSESGEHITHSGMV_____	1	0	1	0

alignment	LUThrs	GeneName	start	structure	Group	Score
___ADSESGGHITHSGM_____	X42886	MV-H-Edmonston	586	14aa	mRNA_3cpc_Th	1
___ADSESGGHITHSGM_____	X56376	MV-H-Edmonston	586	14aaA5	mRNA_3cpc_Th	3
___ADSESGGHITHSGM_____	X42886	MV-H-Halle	586	14aa	mRNA_3cpc_Th	1
___ADSESGGHITHSGM_____	X56376	MV-H-Halle	586	14aaA5	mRNA_3cpc_Th	3
___ADSESGGHITHSGM_____	X42886	MV-H-MVi-Illinois.USA-50.99	586	14aa	mRNA_3cpc_Th	1
___ADSESGGHITHSGM_____	X56376	MV-H-MVi-Illinois.USA-50.99	586	14aaA5	mRNA_3cpc_Th	3
___ADSESGGHITHSGM_____	X42886	MV-H-MVi-Texas.USA-28.99	586	14aa	mRNA_3cpc_Th	1
___ADSESGGHITHSGM_____	X56376	MV-H-MVi-Texas.USA-28.99	586	14aaA5	mRNA_3cpc_Th	3
___ADSESGGHITHSGM_____	X42886	MV-H-Edmonston	586	14aa	mRNA_30cpc_Ctx	2
___ADSESGGHITHSGM_____	X42886	MV-H-Halle	586	14aa	mRNA_30cpc_Ctx	2
___ADSESGGHITHSGM_____	X42886	MV-H-MVi-Illinois.USA-50.99	586	14aa	mRNA_30cpc_Ctx	2
___ADSESGGHITHSGM_____	X42886	MV-H-MVi-Texas.USA-28.99	586	14aa	mRNA_30cpc_Ctx	2
___ADSESGGHITHSGM_____	X42886	MV-H-Edmonston	586	14aa	mRNA_3cpc_Ctx	1
___ADSESGGHITHSGM_____	X56376	MV-H-Edmonston	586	14aaA5	mRNA_3cpc_Ctx	2
___ADSESGGHITHSGM_____	X42886	MV-H-Halle	586	14aa	mRNA_3cpc_Ctx	1
___ADSESGGHITHSGM_____	X56376	MV-H-Halle	586	14aaA5	mRNA_3cpc_Ctx	2
___ADSESGGHITHSGM_____	X42886	MV-H-MVi-Illinois.USA-50.99	586	14aa	mRNA_3cpc_Ctx	1
___ADSESGGHITHSGM_____	X56376	MV-H-MVi-Illinois.USA-50.99	586	14aaA5	mRNA_3cpc_Ctx	2
___ADSESGGHITHSGM_____	X42886	MV-H-MVi-Texas.USA-28.99	586	14aa	mRNA_3cpc_Ctx	1
___ADSESGGHITHSGM_____	X56376	MV-H-MVi-Texas.USA-28.99	586	14aaA5	mRNA_3cpc_Ctx	2
CVLADSESGGHITH_____	X60184	MV-H-CAM-70	583	14aaA5	mRNA_30cpc_SN	1
CVLADSESGGHITH_____	X60184	MV-H-Edmonston	583	14aaA5	mRNA_30cpc_SN	1
CVLADSESGGHITH_____	X60184	MV-H-Halle	583	14aaA5	mRNA_30cpc_SN	1
CVLADSESGGHITH_____	X60184	MV-H-MVi-Illinois.USA-50.99	583	14aaA5	mRNA_30cpc_SN	1
CVLADSESGGHITH_____	X60184	MV-H-MVi-Texas.USA-28.99	583	14aaA5	mRNA_30cpc_SN	1
CVLADSESGGHITH_____	X60184	MV-H-CAM-70	583	14aaA5	mRNA_30cpc_Ctx	1
CVLADSESGGHITH_____	X60184	MV-H-Edmonston	583	14aaA5	mRNA_30cpc_Ctx	1
CVLADSESGGHITH_____	X60184	MV-H-Halle	583	14aaA5	mRNA_30cpc_Ctx	1
CVLADSESGGHITH_____	X60184	MV-H-MVi-Illinois.USA-50.99	583	14aaA5	mRNA_30cpc_Ctx	1
CVLADSESGGHITH_____	X60184	MV-H-MVi-Texas.USA-28.99	583	14aaA5	mRNA_30cpc_Ctx	1
___DSESGEHITHSGMV_____	X34363	MV-H-CAM-70	587	14aa	mRNA_30cpc_Th	1
___DSESGEHITHSGMV_____	X34363	MV-H-Edmonston	587	14aa	mRNA_30cpc_Th	1
___DSESGEHITHSGMV_____	X34363	MV-H-Halle	587	14aa	mRNA_30cpc_Th	1
___DSESGEHITHSGMV_____	X34363	MV-H-MVi-Illinois.USA-50.99	587	14aa	mRNA_30cpc_Th	1
___DSESGEHITHSGMV_____	X34363	MV-H-MVi-Texas.USA-28.99	587	14aa	mRNA_30cpc_Th	1
___ESGGHITHSGMVGMGVSTATR	X37360	MV-H-CAM-70	589	22aa	mRNA_30cpc_SN	1
___ESGGHITHSGMVGMGVSTATR	X37360	MV-H-Edmonston	589	22aa	mRNA_30cpc_SN	1
___ESGGHITHSGMVGMGVSTATR	X37360	MV-H-Halle	589	22aa	mRNA_30cpc_SN	1
___ESGGHITHSGMVGMGVSTATR	X37360	MV-H-MVi-Illinois.USA-50.99	589	22aa	mRNA_30cpc_SN	1
___ESGGHITHSGMVGMGVSTATR	X37360	MV-H-MVi-Texas.USA-28.99	589	22aa	mRNA_30cpc_SN	1
___LADSESGGHITHSG_____	X32033	MV-H-CAM-70	585	14aa	mRNA_30cpc_SN	1
___LADSESGGHITHSG_____	X32033	MV-H-Edmonston	585	14aa	mRNA_30cpc_SN	1
___LADSESGGHITHSG_____	X32033	MV-H-Halle	585	14aa	mRNA_30cpc_SN	1
___LADSESGGHITHSG_____	X32033	MV-H-MVi-Illinois.USA-50.99	585	14aa	mRNA_30cpc_SN	1
___LADSESGGHITHSG_____	X32033	MV-H-MVi-Texas.USA-28.99	585	14aa	mRNA_30cpc_SN	1
___LADSESGGHITHSG_____	X32033	MV-H-CAM-70	585	14aa	mRNA_30cpc_Ctx	1
___LADSESGGHITHSG_____	X32033	MV-H-Edmonston	585	14aa	mRNA_30cpc_Ctx	1

alignment	LUThrs	GeneName	start	structure	Group	Score
__LADSESGGHITHSG_____	X32033	MV-H-Halle	585	14aa	mRNA_30cpc_Ctx	1
__LADSESGGHITHSG_____	X32033	MV-H-MVi-Illinois.USA-50.99	585	14aa	mRNA_30cpc_Ctx	1
__LADSESGGHITHSG_____	X32033	MV-H-MVi-Texas.USA-28.99	585	14aa	mRNA_30cpc_Ctx	1
____SESOGGHITHSGMVG_____	X12642	MV-H-CAM-70	588	14aa	mRNA_30cpc_SN	1
____SESOGGHITHSGMVG_____	X12642	MV-H-Edmonston	588	14aa	mRNA_30cpc_SN	1
____SESOGGHITHSGMVG_____	X12642	MV-H-Halle	588	14aa	mRNA_30cpc_SN	1
____SESOGGHITHSGMVG_____	X12642	MV-H-MVi-Illinois.USA-50.99	588	14aa	mRNA_30cpc_SN	1
____SESOGGHITHSGMVG_____	X12642	MV-H-MVi-Texas.USA-28.99	588	14aa	mRNA_30cpc_SN	1
____SGEHITHSGMVGME_____	X13283	MV-H-CAM-70	590	14aa	mRNA_30cpc_SN_4wks	1
____SGEHITHSGMVGME_____	X13283	MV-H-Edmonston	590	14aa	mRNA_30cpc_SN_4wks	1
____SGEHITHSGMVGME_____	X13283	MV-H-Halle	590	14aa	mRNA_30cpc_SN_4wks	1
____SGEHITHSGMVGME_____	X13283	MV-H-MVi-Illinois.USA-50.99	590	14aa	mRNA_30cpc_SN_4wks	1
____SGEHITHSGMVGME_____	X13283	MV-H-MVi-Texas.USA-28.99	590	14aa	mRNA_30cpc_SN_4wks	1
_VLADSESGGHITHS_____	X67898	MV-H-CAM-70	584	14aa	mRNA_3cpc_Th	1
_VLADSESGGHITHS_____	X67898	MV-H-Edmonston	584	14aa	mRNA_3cpc_Th	1
_VLADSESGGHITHS_____	X67898	MV-H-Halle	584	14aa	mRNA_3cpc_Th	1
_VLADSESGGHITHS_____	X67898	MV-H-MVi-Illinois.USA-50.99	584	14aa	mRNA_3cpc_Th	1
_VLADSESGGHITHS_____	X67898	MV-H-MVi-Texas.USA-28.99	584	14aa	mRNA_3cpc_Th	1

Peptide VLAASATDEDPFLA from HSV-1-pUL36 with cluster number 6526

Peptide VLAASATDEDPFLA from HSV-1-pUL36 with cluster number 6526



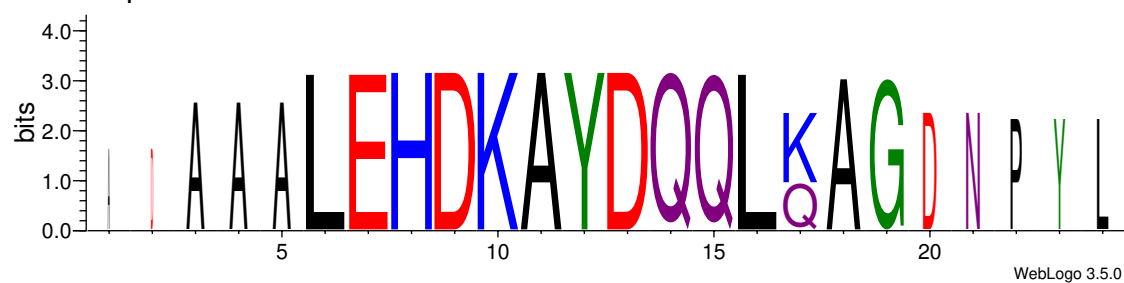
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6526	VLAASATDEDPFLA	18	4	1	5	5	2	1

cluster_id	sequence	alignment	sum	mRNA_30cpc_Ctx	mRNA_30cpc_Th	mRNA_30cpc_SN
6526	VRFGSEATEELPF	VRFGSEATEELPF----	7	2	1	3
6526	VLAASATDEDPFLA	--VLAASATDEDPFLA--	7	0	0	0
6526	RFVGSEATEELPFV	_RFVGSEATEELPFV___	2	1	0	1
6526	AASATDEDPFLARA	----AASATDEDPFLARA	2	1	0	1

alignment	LUThrs	GeneName	start	structure	Group	Score
----AASATDEDPFLARA	X43462	HSV-1-pUL36	2456	14aa	mRNA_30cpc_SN	1
----AASATDEDPFLARA	X43462	HSV-1-pUL36	2456	14aa	mRNA_30cpc_Ctx	1
_RFVGSEATEELPFV___	X28294	HSV-1-pUL36	2435	14aa	mRNA_30cpc_SN	1
_RFVGSEATEELPFV___	X28294	HSV-1-pUL36	2435	14aa	mRNA_30cpc_Ctx	1
--VLAASATDEDPFLA--	X67903	HSV-1-pUL36	2454	14aa	mRNA_3cpc_SN	1
--VLAASATDEDPFLA--	X67903	HSV-1-pUL36	2454	14aa	mRNA_3cpc_Th	4
--VLAASATDEDPFLA--	X67903	HSV-1-pUL36	2454	14aa	mRNA_3cpc_Ctx	2
VRFGSEATEELPF----	X58700	HSV-1-pUL36	2434	14aaA5	mRNA_30cpc_SN	1
VRFGSEATEELPF----	X89990	HSV-1-pUL36	2434	14aaG4S	mRNA_30cpc_SN	2
VRFGSEATEELPF----	X89990	HSV-1-pUL36	2434	14aaG4S	mRNA_30cpc_Th	1
VRFGSEATEELPF----	X89990	HSV-1-pUL36	2434	14aaG4S	mRNA_3cpc_Th	1
VRFGSEATEELPF----	X89990	HSV-1-pUL36	2434	14aaG4S	mRNA_30cpc_Ctx	2

Peptide LEHDKAYDQQLKAG from AAV1-VP1 with cluster number 6474

Peptide LEHDKAYDQQLKAG from AAV1-VP1 with cluster number 6474



cluster_id	main_sequence	sum	mRNA_30cpc_Ctx	mRNA_30cpc_Th	mRNA_30cpc_SN	mRNA_3cpc_Th	mRNA_3cpc_Ctx	mRNA_3cpc_SN
6474	LEHDKAYDQQLKAG	18	4	7	3	4	0	0

cluster_id	sequence	alignment	sum	mRNA_30cpc_Ctx	mRNA_30cpc_Th	mRNA_30cpc_SN
6474	LEHDKAYDQQLKAG	____LEHDKAYDQQLKAG____	7	2	2	2
6474	AAALEHDKAYDQQLQAGDNPYL	__AAALEHDKAYDQQLQAGDNPYL	3	1	2	0
6474	LEHDKAYDQQLQAG	____LEHDKAYDQQLQAG____	2	1	1	0
6474	AAALEHDKAYDQQLKAGDNPYL	__AAALEHDKAYDQQLKAGDNPYL	2	0	1	1
6474	AAALEHDKAYDQQL	__AAALEHDKAYDQQL____	2	0	1	0
6474	HDKAYDQQLQAGDN	____HDKAYDQQLQAGDN____	1	0	0	0
6474	ADAAALEHDKAYDQ	ADAAALEHDKAYDQ_____	1	0	0	0

alignment	LUTnrs	GeneName	start	structure	Group	Score
__AAALEHDKAYDQQL_____	X43760	AAV1-VP1	70	14aa	mRNA_30cpc_Th	1
__AAALEHDKAYDQQL_____	X43760	AAV6-VP1	70	14aa	mRNA_30cpc_Th	1
__AAALEHDKAYDQQL_____	X43760	AAV8-VP1	70	14aa	mRNA_30cpc_Th	1
__AAALEHDKAYDQQL_____	X43760	AAV9-VP1	70	14aa	mRNA_30cpc_Th	1
__AAALEHDKAYDQQL_____	X43760	AAV1-VP1	70	14aa	mRNA_3cpc_Th	1
__AAALEHDKAYDQQL_____	X43760	AAV6-VP1	70	14aa	mRNA_3cpc_Th	1
__AAALEHDKAYDQQL_____	X43760	AAV8-VP1	70	14aa	mRNA_3cpc_Th	1
__AAALEHDKAYDQQL_____	X43760	AAV9-VP1	70	14aa	mRNA_3cpc_Th	1
__AAALEHDKAYDQQLKAGDNPYL	X43758	AAV1-VP1	70	22aa	mRNA_30cpc_SN	1
__AAALEHDKAYDQQLKAGDNPYL	X43758	AAV6-VP1	70	22aa	mRNA_30cpc_SN	1
__AAALEHDKAYDQQLKAGDNPYL	X43758	AAV8-VP1	70	22aa	mRNA_30cpc_SN	1
__AAALEHDKAYDQQLKAGDNPYL	X43758	AAV9-VP1	70	22aa	mRNA_30cpc_SN	1
__AAALEHDKAYDQQLKAGDNPYL	X43758	AAV1-VP1	70	22aa	mRNA_30cpc_Th	1
__AAALEHDKAYDQQLKAGDNPYL	X43758	AAV6-VP1	70	22aa	mRNA_30cpc_Th	1
__AAALEHDKAYDQQLKAGDNPYL	X43758	AAV8-VP1	70	22aa	mRNA_30cpc_Th	1
__AAALEHDKAYDQQLKAGDNPYL	X43758	AAV9-VP1	70	22aa	mRNA_30cpc_Th	1
__AAALEHDKAYDQQLQAGDNPYL	X43759	AAV1-VP1	70	22aa	mRNA_30cpc_Th	2
__AAALEHDKAYDQQLQAGDNPYL	X43759	AAV6-VP1	70	22aa	mRNA_30cpc_Th	2
__AAALEHDKAYDQQLQAGDNPYL	X43759	AAV8-VP1	70	22aa	mRNA_30cpc_Th	2
__AAALEHDKAYDQQLQAGDNPYL	X43759	AAV9-VP1	70	22aa	mRNA_30cpc_Th	2
__AAALEHDKAYDQQLQAGDNPYL	X43759	AAV1-VP1	70	22aa	mRNA_30cpc_Ctx	1
__AAALEHDKAYDQQLQAGDNPYL	X43759	AAV6-VP1	70	22aa	mRNA_30cpc_Ctx	1
__AAALEHDKAYDQQLQAGDNPYL	X43759	AAV8-VP1	70	22aa	mRNA_30cpc_Ctx	1
__AAALEHDKAYDQQLQAGDNPYL	X43759	AAV9-VP1	70	22aa	mRNA_30cpc_Ctx	1
ADAAALEHDKAYDQ_____	X43045	AAV1-VP1	68	14aa	mRNA_3cpc_Th	1
ADAAALEHDKAYDQ_____	X43045	AAV6-VP1	68	14aa	mRNA_3cpc_Th	1
ADAAALEHDKAYDQ_____	X43045	AAV8-VP1	68	14aa	mRNA_3cpc_Th	1
ADAAALEHDKAYDQ_____	X43045	AAV9-VP1	68	14aa	mRNA_3cpc_Th	1
_____HDKAYDQQLQAGDN___	X17841	AAV1-VP1	75	14aa	mRNA_3cpc_Th	1
_____HDKAYDQQLQAGDN___	X17841	AAV6-VP1	75	14aa	mRNA_3cpc_Th	1
_____HDKAYDQQLQAGDN___	X17841	AAV8-VP1	75	14aa	mRNA_3cpc_Th	1
_____HDKAYDQQLQAGDN___	X17841	AAV9-VP1	75	14aa	mRNA_3cpc_Th	1
_____LEHDKAYDQQLKAG_____	X31578	AAV1-VP1	73	14aa	mRNA_30cpc_SN	1
_____LEHDKAYDQQLKAG_____	X84751	AAV1-VP1	73	14aaG4S	mRNA_30cpc_SN	1
_____LEHDKAYDQQLKAG_____	X31578	AAV6-VP1	73	14aa	mRNA_30cpc_SN	1
_____LEHDKAYDQQLKAG_____	X84751	AAV6-VP1	73	14aaG4S	mRNA_30cpc_SN	1
_____LEHDKAYDQQLKAG_____	X31578	AAV8-VP1	73	14aa	mRNA_30cpc_SN	1
_____LEHDKAYDQQLKAG_____	X84751	AAV8-VP1	73	14aaG4S	mRNA_30cpc_SN	1
_____LEHDKAYDQQLKAG_____	X31578	AAV9-VP1	73	14aa	mRNA_30cpc_SN	1
_____LEHDKAYDQQLKAG_____	X84751	AAV9-VP1	73	14aaG4S	mRNA_30cpc_SN	1
_____LEHDKAYDQQLKAG_____	X31578	AAV1-VP1	73	14aa	mRNA_30cpc_Th	1
_____LEHDKAYDQQLKAG_____	X84751	AAV1-VP1	73	14aaG4S	mRNA_30cpc_Th	1
_____LEHDKAYDQQLKAG_____	X31578	AAV6-VP1	73	14aa	mRNA_30cpc_Th	1
_____LEHDKAYDQQLKAG_____	X84751	AAV6-VP1	73	14aaG4S	mRNA_30cpc_Th	1
_____LEHDKAYDQQLKAG_____	X31578	AAV8-VP1	73	14aa	mRNA_30cpc_Th	1
_____LEHDKAYDQQLKAG_____	X84751	AAV8-VP1	73	14aaG4S	mRNA_30cpc_Th	1
_____LEHDKAYDQQLKAG_____	X31578	AAV9-VP1	73	14aa	mRNA_30cpc_Th	1

alignment	LUTnrs	GeneName	start	structure	Group	Score
-----LEHDKAYDQQLKAG-----	X84751	AAV9-VP1	73	14aaG4S	mRNA_30cpc_Th	1
-----LEHDKAYDQQLKAG-----	X84751	AAV1-VP1	73	14aaG4S	mRNA_3cpc_Th	1
-----LEHDKAYDQQLKAG-----	X84751	AAV6-VP1	73	14aaG4S	mRNA_3cpc_Th	1
-----LEHDKAYDQQLKAG-----	X84751	AAV8-VP1	73	14aaG4S	mRNA_3cpc_Th	1
-----LEHDKAYDQQLKAG-----	X84751	AAV9-VP1	73	14aaG4S	mRNA_3cpc_Th	1
-----LEHDKAYDQQLKAG-----	X84751	AAV1-VP1	73	14aaG4S	mRNA_30cpc_Ctx	2
-----LEHDKAYDQQLKAG-----	X84751	AAV6-VP1	73	14aaG4S	mRNA_30cpc_Ctx	2
-----LEHDKAYDQQLKAG-----	X84751	AAV8-VP1	73	14aaG4S	mRNA_30cpc_Ctx	2
-----LEHDKAYDQQLKAG-----	X84751	AAV9-VP1	73	14aaG4S	mRNA_30cpc_Ctx	2
-----LEHDKAYDQQLQAG-----	X53462	AAV1-VP1	73	14aaA5	mRNA_30cpc_Th	1
-----LEHDKAYDQQLQAG-----	X53462	AAV6-VP1	73	14aaA5	mRNA_30cpc_Th	1
-----LEHDKAYDQQLQAG-----	X53462	AAV8-VP1	73	14aaA5	mRNA_30cpc_Th	1
-----LEHDKAYDQQLQAG-----	X53462	AAV9-VP1	73	14aaA5	mRNA_30cpc_Th	1
-----LEHDKAYDQQLQAG-----	X53462	AAV1-VP1	73	14aaA5	mRNA_30cpc_Ctx	1
-----LEHDKAYDQQLQAG-----	X53462	AAV6-VP1	73	14aaA5	mRNA_30cpc_Ctx	1
-----LEHDKAYDQQLQAG-----	X53462	AAV8-VP1	73	14aaA5	mRNA_30cpc_Ctx	1
-----LEHDKAYDQQLQAG-----	X53462	AAV9-VP1	73	14aaA5	mRNA_30cpc_Ctx	1

Peptide LPTDTLESASTVTA from HSV-1-pUL36 with cluster number 6205

Peptide LPTDTLESASTVTA from HSV-1-pUL36 with cluster number 6



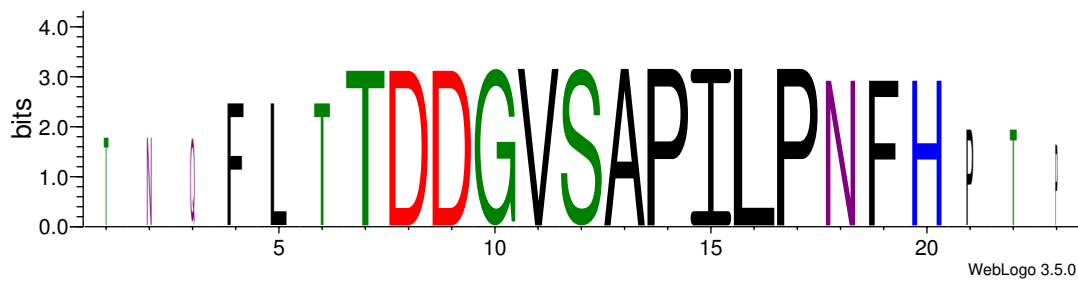
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6205	LPTDTLESASTVTA	18	7	5	1	5	0	0

cluster_id	sequence	alignment	sum	mRNA_30cpc_Ctx	mRNA_30cpc_Th	mRNA_30cpc_SN
6205	PPLPTDTLESASTV	_PPLPTDTLESASTV_____	7	3	3	1
6205	LPTDTLESASTVTA	___LPTDTLESASTVTA___	7	2	2	0
6205	RQTLDELESAPQTT	__RQTLDELESAPQTT____	1	1	0	0
6205	RPPLPTDTLESAST	RPPLPTDTLESAST_____	1	0	0	0
6205	ETLDELESAPQTTR	___ETLDELESAPQTTR___	1	1	0	0
6205	DTLESASTVTAMYV	_____DTLESASTVTAMYV	1	0	0	0

alignment	LUThrs	GeneName	start	structure	Group	Score
_____DTLESASTVTAMYV	X34092	HSV-1-pUL36	1996	14aa	mRNA_3cpc_Th	1
___ETLDELESAPQTTR___	X37131	HSV-1-pUL19	349	14aa	mRNA_30cpc_Ctx	1
___ETLDELESAPQTTR___	X37131	HSV-2-pUL19	349	14aa	mRNA_30cpc_Ctx	1
___LPTDTLESASTVTA___	X53085	HSV-1-pUL36	1993	14aaA5	mRNA_30cpc_Th	2
___LPTDTLESASTVTA___	X53085	HSV-1-pUL36	1993	14aaA5	mRNA_3cpc_Th	3
___LPTDTLESASTVTA___	X30146	HSV-1-pUL36	1993	14aa	mRNA_30cpc_Ctx	2
_PPLPTDTLESASTV_____	X22065	HSV-1-pUL36	1991	14aa	mRNA_30cpc_SN	1
_PPLPTDTLESASTV_____	X22065	HSV-1-pUL36	1991	14aa	mRNA_30cpc_Th	3
_PPLPTDTLESASTV_____	X22065	HSV-1-pUL36	1991	14aa	mRNA_30cpc_Ctx	3
RPPLPTDTLESAST_____	X25835	HSV-1-pUL36	1990	14aa	mRNA_3cpc_Th	1
__RQTLDELESAPQTT____	X25648	HSV-1-pUL19	348	14aa	mRNA_30cpc_Ctx	1
__RQTLDELESAPQTT____	X25648	HSV-2-pUL19	348	14aa	mRNA_30cpc_Ctx	1

Peptide TDDGVSAPILPNFH from EV71-VP3 with cluster number 6167

Peptide TDDGVSAPILPNFH from EV71-VP3 with cluster number 6167



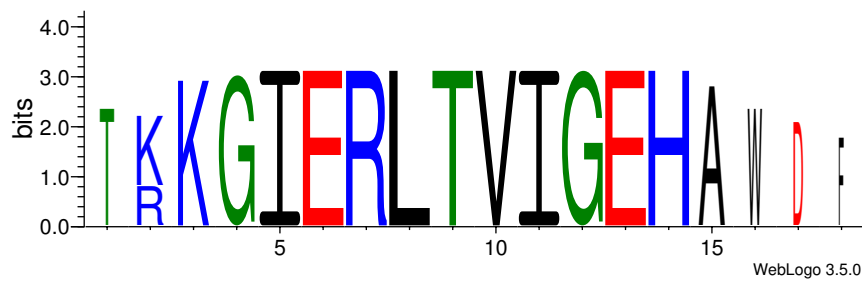
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6167	TDDGVSAPILPNFH	18	5	6	2	4	0	0

cluster_id	sequence	alignment	sum	mRNA_30cpc_Ctx	mRNA_30cpc_Th	mRNA_30cpc_SN
6167	TDDGVSAPILPNFH	_____TDDGVSAPILPNFH____	10	3	4	2
6167	FLTTDDGVSAPILP	___FLTTDDGVSAPILP_____	5	1	0	0
6167	TNQFLTTDDGVSAPILPNFHPT	TNQFLTTDDGVSAPILPNFHPT_	2	1	1	0
6167	GVSAPILPNFHPTP	_____GVSAPILPNFHPTP	1	0	1	0

alignment	LUThrs	GeneName	start	structure	Group	Score
___FLTTDDGVSAPILP_____	X75357	EV71-VP3	13	14aa	mRNA_3cpc_Th	3
___FLTTDDGVSAPILP_____	X75357	EV71-VP3	13	14aa	mRNA_30cpc_Ctx	1
___FLTTDDGVSAPILP_____	X75357	EV71-VP3	13	14aa	mRNA_3cpc_SN_4wks	1
_____GVSAPILPNFHPTP	X64798	EV71-VP3	19	14aa	mRNA_30cpc_Th	1
_____TDDGVSAPILPNFH___	X47355	EV71-VP3	16	14aaA5	mRNA_30cpc_SN	2
_____TDDGVSAPILPNFH___	X8142	EV71-VP3	16	14aa	mRNA_30cpc_Th	1
_____TDDGVSAPILPNFH___	X47355	EV71-VP3	16	14aaA5	mRNA_30cpc_Th	3
_____TDDGVSAPILPNFH___	X47355	EV71-VP3	16	14aaA5	mRNA_3cpc_Th	1
_____TDDGVSAPILPNFH___	X47355	EV71-VP3	16	14aaA5	mRNA_30cpc_Ctx	3
TNQFLTTDDGVSAPILPNFHPT_	X5571	EV71-VP3	10	22aa	mRNA_30cpc_Th	1
TNQFLTTDDGVSAPILPNFHPT_	X5571	EV71-VP3	10	22aa	mRNA_30cpc_Ctx	1

Peptide TKKGIERLTVIGEH from TBEV-E-4387-B7 with cluster number 6587

de TKKGIERLTVIGEH from TBEV-E-4387-B7 with cluster numl



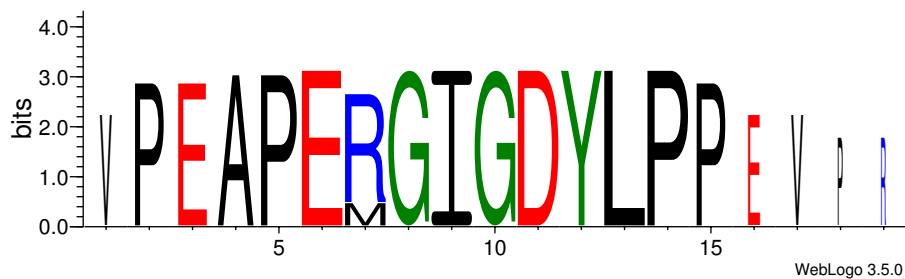
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6587	TKKGIERLTVIGEH	17	4	4	4	3	0	0

cluster_id	sequence	alignment	sum	mRNA_30cpc_Ctx	mRNA_30cpc_Th	mRNA_30cpc_SN
6587	TKKGIERLTVIGEH	TKKGIERLTVIGEH----	6	2	1	2
6587	RKGIERLTVIGEHA	_RKGIERLTVIGEHA---	4	1	1	1
6587	KGIERLTVIGEHAW	__KGIERLTVIGEHAW__	2	0	1	1
6587	IERLTVIGEHAWDF	----IERLTVIGEHAWDF	2	1	1	0
6587	GIERLTVIGEHAWD	___GIERLTVIGEHAWD_	2	0	0	0
6587	KKGIERLTVIGEHA	_KKGIERLTVIGEHA---	1	0	0	0

alignment	LUThrs	GeneName	start	structure	Group	Score
___GIERLTVIGEHAWD_	X62129	TBEV-E-4387-B7	409	14aa	mRNA_3cpc_Th	1
___GIERLTVIGEHAWD_	X62129	TBEV-E-80	409	14aa	mRNA_3cpc_Th	1
___GIERLTVIGEHAWD_	X62129	TBEV-E-Simo-9	365	14aa	mRNA_3cpc_Th	1
___GIERLTVIGEHAWD_	X62129	TBEV-E-4387-B7	409	14aa	mRNA_30cpc_Th_4wks	1
___GIERLTVIGEHAWD_	X62129	TBEV-E-80	409	14aa	mRNA_30cpc_Th_4wks	1
___GIERLTVIGEHAWD_	X62129	TBEV-E-Simo-9	365	14aa	mRNA_30cpc_Th_4wks	1
___IERLTVIGEHAWDF	X16105	TBEV-E-4387-B7	410	14aa	mRNA_30cpc_Th	1
___IERLTVIGEHAWDF	X16105	TBEV-E-80	410	14aa	mRNA_30cpc_Th	1
___IERLTVIGEHAWDF	X16105	TBEV-E-Simo-9	366	14aa	mRNA_30cpc_Th	1
___IERLTVIGEHAWDF	X16105	TBEV-E-4387-B7	410	14aa	mRNA_30cpc_Ctx	1
___IERLTVIGEHAWDF	X16105	TBEV-E-80	410	14aa	mRNA_30cpc_Ctx	1
___IERLTVIGEHAWDF	X16105	TBEV-E-Simo-9	366	14aa	mRNA_30cpc_Ctx	1
__KGIERLTVIGEHAW__	X46510	TBEV-E-4387-B7	408	14aaA5	mRNA_30cpc_SN	1
__KGIERLTVIGEHAW__	X46510	TBEV-E-80	408	14aaA5	mRNA_30cpc_SN	1
__KGIERLTVIGEHAW__	X46510	TBEV-E-Simo-9	364	14aaA5	mRNA_30cpc_SN	1
__KGIERLTVIGEHAW__	X46510	TBEV-E-4387-B7	408	14aaA5	mRNA_30cpc_Th	1
__KGIERLTVIGEHAW__	X46510	TBEV-E-80	408	14aaA5	mRNA_30cpc_Th	1
__KGIERLTVIGEHAW__	X46510	TBEV-E-Simo-9	364	14aaA5	mRNA_30cpc_Th	1
_KKGIERLTVIGEHA___	X3227	TBEV-E-4387-B7	407	14aa	mRNA_30cpc_Th_4wks	1
_KKGIERLTVIGEHA___	X3227	TBEV-E-80	407	14aa	mRNA_30cpc_Th_4wks	1
_KKGIERLTVIGEHA___	X3227	TBEV-E-Simo-9	363	14aa	mRNA_30cpc_Th_4wks	1
_RKGIERLTVIGEHA___	X24910	TBEV-E-4387-B7	407	14aa	mRNA_30cpc_SN	1
_RKGIERLTVIGEHA___	X24910	TBEV-E-80	407	14aa	mRNA_30cpc_SN	1
_RKGIERLTVIGEHA___	X24910	TBEV-E-Simo-9	363	14aa	mRNA_30cpc_SN	1
_RKGIERLTVIGEHA___	X24910	TBEV-E-4387-B7	407	14aa	mRNA_30cpc_Th	1
_RKGIERLTVIGEHA___	X24910	TBEV-E-80	407	14aa	mRNA_30cpc_Th	1
_RKGIERLTVIGEHA___	X24910	TBEV-E-Simo-9	363	14aa	mRNA_30cpc_Th	1
_RKGIERLTVIGEHA___	X24910	TBEV-E-4387-B7	407	14aa	mRNA_3cpc_Th	1
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TKKGIERLTVIGEHA___	X5717	TBEV-E-Simo-9	362	14aa	mRNA_30cpc_SN	2
TKKGIERLTVIGEHA___	X5717	TBEV-E-4387-B7	406	14aa	mRNA_30cpc_Th	1
TKKGIERLTVIGEHA___	X5717	TBEV-E-80	406	14aa	mRNA_30cpc_Th	1
TKKGIERLTVIGEHA___	X5717	TBEV-E-Simo-9	362	14aa	mRNA_30cpc_Th	1
TKKGIERLTVIGEHA___	X5717	TBEV-E-4387-B7	406	14aa	mRNA_3cpc_Th	1
TKKGIERLTVIGEHA___	X5717	TBEV-E-80	406	14aa	mRNA_3cpc_Th	1
TKKGIERLTVIGEHA___	X5717	TBEV-E-Simo-9	362	14aa	mRNA_3cpc_Th	1
TKKGIERLTVIGEHA___	X5717	TBEV-E-4387-B7	406	14aa	mRNA_30cpc_Ctx	2
TKKGIERLTVIGEHA___	X5717	TBEV-E-80	406	14aa	mRNA_30cpc_Ctx	2
TKKGIERLTVIGEHA___	X5717	TBEV-E-Simo-9	362	14aa	mRNA_30cpc_Ctx	2

Peptide PEAPERGIGDYLP from PRV-Becker-gE with cluster number 6580

Peptide PEAPERGIGDYLP from PRV-Becker-gE with cluster number 6580



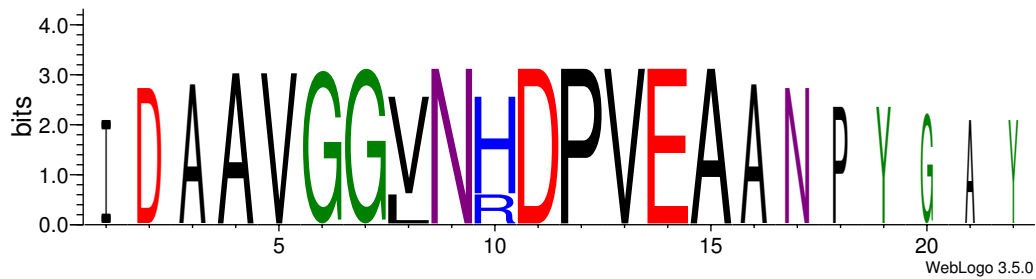
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6580	PEAPERGIGDYLP	17	7	3	3	1	0	0

cluster_id	sequence	alignment	sum	mRNA_30cpc_Ctx	mRNA_30cpc_Th	mRNA_30cpc_SN
6580	PEAPERGIGDYLP	_PEAPERGIGDYLP_	7	3	1	2
6580	VPEAPERGIGDYLP	VPEAPERGIGDYLP_	5	3	0	1
6580	APEMGIGDYLPPEV	___APEMGIGDYLPPEV__	2	1	0	0
6580	ERGIGDYLPPEVPR	_____ERGIGDYLPPEVPR	1	0	1	0
6580	EMGIGDYLPPEVPR	_____EMGIGDYLPPEVPR	1	0	0	0
6580	APERGIGDYLPPEV	___APERGIGDYLPPEV__	1	0	1	0

alignment	LUThrs	GeneName	start	structure	Group	Score
___APEMGIGDYLPPEV__	X41834	PRV-Becker-gE	145	14aa	mRNA_30cpc_Ctx	1
___APEMGIGDYLPPEV__	X41834	PRV-TJ-gE	146	14aa	mRNA_30cpc_Ctx	1
___APEMGIGDYLPPEV__	X41834	PRV-Becker-gE	145	14aa	mRNA_30cpc_Th_4wks	1
___APEMGIGDYLPPEV__	X41834	PRV-TJ-gE	146	14aa	mRNA_30cpc_Th_4wks	1
___APERGIGDYLPPEV__	X41837	PRV-Becker-gE	145	14aa	mRNA_30cpc_Th	1
___APERGIGDYLPPEV__	X41837	PRV-TJ-gE	146	14aa	mRNA_30cpc_Th	1
_____EMGIGDYLPPEVPR	X54992	PRV-Becker-gE	147	14aaA5	mRNA_30cpc_Th_4wks	1
_____EMGIGDYLPPEVPR	X54992	PRV-TJ-gE	148	14aaA5	mRNA_30cpc_Th_4wks	1
_____ERGIGDYLPPEVPR	X38034	PRV-Becker-gE	147	14aa	mRNA_30cpc_Th	1
_____ERGIGDYLPPEVPR	X38034	PRV-TJ-gE	148	14aa	mRNA_30cpc_Th	1
PEAPERGIGDYLP	X23215	PRV-Becker-gE	143	14aa	mRNA_30cpc_SN	2
PEAPERGIGDYLP	X23215	PRV-TJ-gE	144	14aa	mRNA_30cpc_SN	2
PEAPERGIGDYLP	X23215	PRV-Becker-gE	143	14aa	mRNA_30cpc_Th	1
PEAPERGIGDYLP	X23215	PRV-TJ-gE	144	14aa	mRNA_30cpc_Th	1
PEAPERGIGDYLP	X23215	PRV-Becker-gE	143	14aa	mRNA_3cpc_Th	1
PEAPERGIGDYLP	X23215	PRV-TJ-gE	144	14aa	mRNA_3cpc_Th	1
PEAPERGIGDYLP	X23215	PRV-Becker-gE	143	14aa	mRNA_30cpc_Ctx	3
PEAPERGIGDYLP	X23215	PRV-TJ-gE	144	14aa	mRNA_30cpc_Ctx	3
VPEAPERGIGDYLP_	X58599	PRV-Becker-gE	142	14aaA5	mRNA_30cpc_SN	1
VPEAPERGIGDYLP_	X58599	PRV-TJ-gE	143	14aaA5	mRNA_30cpc_SN	1
VPEAPERGIGDYLP_	X58599	PRV-Becker-gE	142	14aaA5	mRNA_30cpc_Ctx	3
VPEAPERGIGDYLP_	X58599	PRV-TJ-gE	143	14aaA5	mRNA_30cpc_Ctx	3
VPEAPERGIGDYLP_	X89889	PRV-Becker-gE	142	14aaG4S	mRNA_30cpc_Th_4wks	1
VPEAPERGIGDYLP_	X89889	PRV-TJ-gE	143	14aaG4S	mRNA_30cpc_Th_4wks	1

Peptide DAAVGGVNHDPVEA from HSV-2-pUL19 with cluster number 6503

† Peptide DAAVGGVNHDPVEA from HSV-2-pUL19 with cluster number 6503



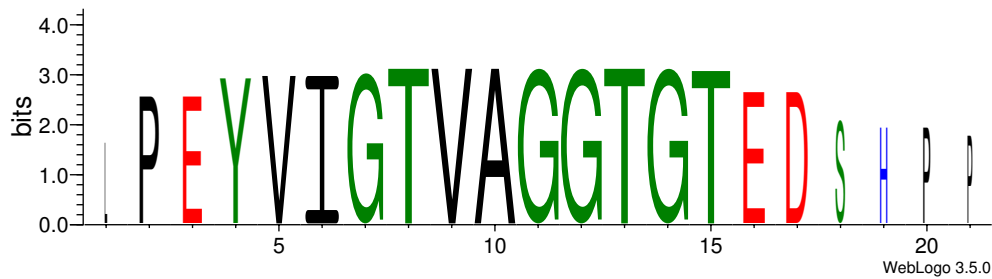
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6503	DAAVGGVNHDPVEA	17	3	8	3	2	0	0

cluster_id	sequence	alignment	sum	mRNA_30cpc_Ctx	mRNA_30cpc_Th	mRNA_30cpc_SN
6503	DAAVGGVNHDPVEA	_DAAVGGVNHDPVEA_	6	1	3	1
6503	IDAAVGGVNHDPVEAANPYGAY	IDAAVGGVNHDPVEAANPYGAY	4	1	2	1
6503	AVGGLNRDPVEAAN	__AVGGLNRDPVEAAN__	3	0	1	1
6503	GLNRDPVEAANPYG	____GLNRDPVEAANPYG__	1	0	1	0
6503	GGVNHDPVEAANPY	____GGVNHDPVEAANPY__	1	1	0	0
6503	AVGGVNHDPVEAAN	____AVGGVNHDPVEAAN__	1	0	0	0
6503	AAVGGVNHDPVEAA	__AAVGGVNHDPVEAA__	1	0	1	0

alignment	LUThrs	GeneName	start	structure	Group	Score
__AAVGGVNHDPVEAA__	X43867	HSV-2-pUL19	471	14aa	mRNA_30cpc_Th	1
____AVGGLNRDPVEAAN__	X44659	HSV-1-pUL19	472	14aa	mRNA_30cpc_SN	1
____AVGGLNRDPVEAAN__	X44659	HSV-1-pUL19	472	14aa	mRNA_30cpc_Th	1
____AVGGLNRDPVEAAN__	X44659	HSV-1-pUL19	472	14aa	mRNA_3cpc_Th	1
____AVGGVNHDPVEAAN__	X44661	HSV-2-pUL19	472	14aa	mRNA_30cpc_SN_4wks	1
DAAVGGVNHDPVEA	X35980	HSV-2-pUL19	470	14aa	mRNA_30cpc_SN	1
DAAVGGVNHDPVEA	X35980	HSV-2-pUL19	470	14aa	mRNA_30cpc_Th	3
DAAVGGVNHDPVEA	X35980	HSV-2-pUL19	470	14aa	mRNA_3cpc_Th	1
DAAVGGVNHDPVEA	X35980	HSV-2-pUL19	470	14aa	mRNA_30cpc_Ctx	1
____GGVNHDPVEAANPY__	X64651	HSV-1-pUL19	474	14aa	mRNA_30cpc_Ctx	1
____GGVNHDPVEAANPY__	X64651	HSV-2-pUL19	474	14aa	mRNA_30cpc_Ctx	1
____GLNRDPVEAANPYG__	X63078	HSV-1-pUL19	475	14aa	mRNA_30cpc_Th	1
____GLNRDPVEAANPYG__	X63078	HSV-2-pUL19	475	14aa	mRNA_30cpc_Th	1
IDAAVGGVNHDPVEAANPYGAY	X16006	HSV-1-pUL19	469	22aa	mRNA_30cpc_SN	1
IDAAVGGVNHDPVEAANPYGAY	X16006	HSV-2-pUL19	469	22aa	mRNA_30cpc_SN	1
IDAAVGGVNHDPVEAANPYGAY	X16006	HSV-1-pUL19	469	22aa	mRNA_30cpc_Th	2
IDAAVGGVNHDPVEAANPYGAY	X16006	HSV-2-pUL19	469	22aa	mRNA_30cpc_Th	2
IDAAVGGVNHDPVEAANPYGAY	X16006	HSV-1-pUL19	469	22aa	mRNA_30cpc_Ctx	1
IDAAVGGVNHDPVEAANPYGAY	X16006	HSV-2-pUL19	469	22aa	mRNA_30cpc_Ctx	1

Peptide PEYVIGTVAGGTGT from EV71-VP2 with cluster number 6384

Peptide PEYVIGTVAGGTGT from EV71-VP2 with cluster number 638



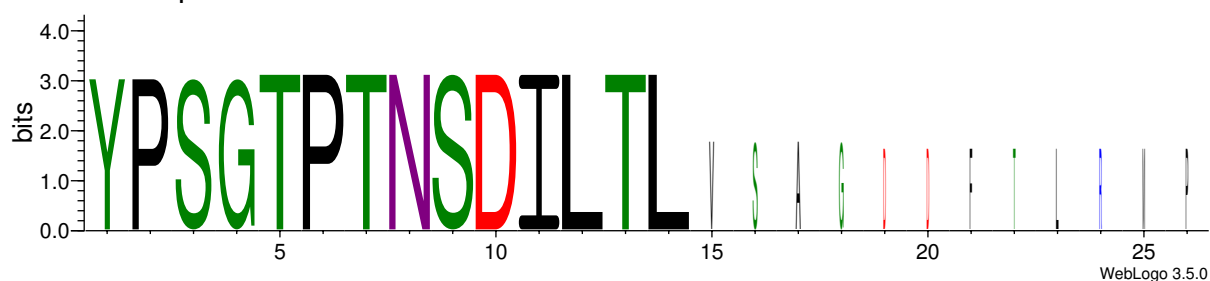
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6384	PEYVIGTVAGGTGT	17	6	6	2	3	0	0

cluster_id	sequence	alignment	sum	mRNA_30cpc_Ctx	mRNA_30cpc_Th	mRNA_30cpc_SN
6384	PEYVIGTVAGGTGT	_PEYVIGTVAGGTGT_	7	1	3	1
6384	YVIGTVAGGTGTED	___YVIGTVAGGTGTED___	5	2	2	0
6384	TVAGGTGTEDSHPP	_____TVAGGTGTEDSHPP	2	0	1	1
6384	VIGTVAGGTGTEDS	____VIGTVAGGTGTEDS__	1	1	0	0
6384	LPEYVIGTVAGGTG	LPEYVIGTVAGGTG_____	1	1	0	0
6384	GTVAGGTGTEDSHP	_____GTVAGGTGTEDSHP_	1	1	0	0

alignment	LUThrs	GeneName	start	structure	Group	Score
_____GTVAGGTGTEDSHP_	X61664	EV71-VP2	133	14aa	mRNA_30cpc_Ctx	1
LPEYVIGTVAGGTG_____	X53127	EV71-VP2	127	14aaA5	mRNA_30cpc_Ctx	1
PEYVIGTVAGGTGT	X23269	EV71-VP2	128	14aa	mRNA_30cpc_SN	1
PEYVIGTVAGGTGT	X23269	EV71-VP2	128	14aa	mRNA_30cpc_Th	3
PEYVIGTVAGGTGT	X23269	EV71-VP2	128	14aa	mRNA_3cpc_Th	2
PEYVIGTVAGGTGT	X23269	EV71-VP2	128	14aa	mRNA_30cpc_Ctx	1
_____TVAGGTGTEDSHPP	X9257	EV71-VP2	134	14aa	mRNA_30cpc_SN	1
_____TVAGGTGTEDSHPP	X9257	EV71-VP2	134	14aa	mRNA_30cpc_Th	1
____VIGTVAGGTGTEDS__	X66724	EV71-VP2	131	14aa	mRNA_30cpc_Ctx	1
___YVIGTVAGGTGTED___	X59821	EV71-VP2	130	14aaA5	mRNA_30cpc_Th	2
___YVIGTVAGGTGTED___	X59821	EV71-VP2	130	14aaA5	mRNA_3cpc_Th	1
___YVIGTVAGGTGTED___	X59821	EV71-VP2	130	14aaA5	mRNA_30cpc_Ctx	2

Peptide YPSGTPTNSDILTL from TMEV-VP3 with cluster number 5599

Peptide YPSGTPTNSDILTL from TMEV-VP3 with cluster number 5599



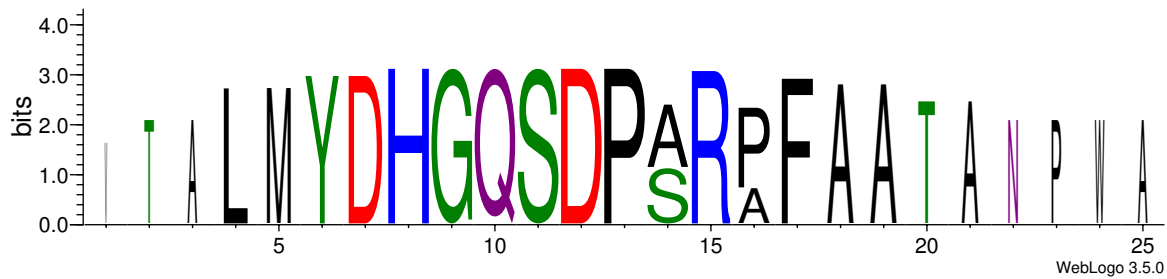
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5599	YPSGTPTNSDILTL	17	3	4	3	4	2	1

cluster_id	sequence	alignment	sum	mRNA_30cpc_Ctx	mRNA_30cpc_Th	mRNA_30cpc_SN
5599	YPSGTPTNSDILTL	YPSGTPTNSDILTL_____	15	3	2	3
5599	TPTNSDILTLVSAGDDFTLRMP	___TPTNSDILTLVSAGDDFTLRMP	1	0	1	0
5599	TPTNSDILTLVSAG	___TPTNSDILTLVSAG_____	1	0	1	0

alignment	LUThrs	GeneName	start	structure	Group	Score
___TPTNSDILTLVSAG_____	X7163	TMEV-VP3	202	14aa	mRNA_30cpc_Th	1
___TPTNSDILTLVSAGDDFTLRMP	X7162	TMEV-VP3	202	22aa	mRNA_30cpc_Th	1
YPSGTPTNSDILTL_____	X70871	TMEV-VP3	198	14aa	mRNA_30cpc_SN	3
YPSGTPTNSDILTL_____	X70871	TMEV-VP3	198	14aa	mRNA_3cpc_SN	1
YPSGTPTNSDILTL_____	X70871	TMEV-VP3	198	14aa	mRNA_30cpc_Th	2
YPSGTPTNSDILTL_____	X70871	TMEV-VP3	198	14aa	mRNA_3cpc_Th	4
YPSGTPTNSDILTL_____	X70871	TMEV-VP3	198	14aa	mRNA_30cpc_Ctx	3
YPSGTPTNSDILTL_____	X70871	TMEV-VP3	198	14aa	mRNA_3cpc_Ctx	2

Peptide YDHGQSDPARPFAA from HSV-1-pUL19 with cluster number 5002

Peptide YDHGQSDPARPFAA from HSV-1-pUL19 with cluster number 5002



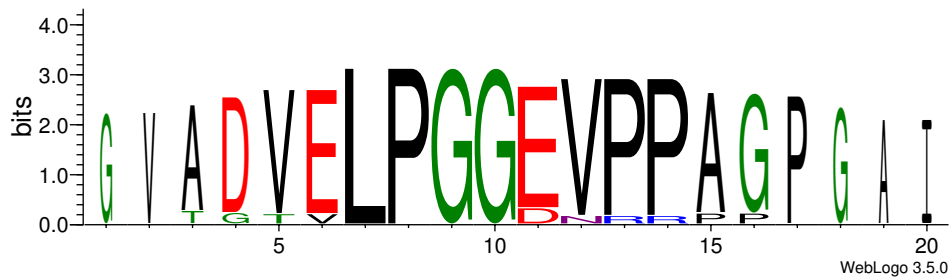
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5002	YDHGQSDPARPFAA	17	9	2	4	2	0	0

cluster_id	sequence	alignment	sum	mRNA_30cpc_Ctx	mRNA_30cpc_Th	mRNA_30cpc_SN
5002	YDHGQSDPARPFAA	_____YDHGQSDPARPFAA_____	4	1	1	1
5002	TALMYDHGQSDPSR	_TALMYDHGQSDPSR_____	3	2	0	0
5002	LMYDHGQSDPSRAFAATANPWA	___LMYDHGQSDPSRAFAATANPWA___	3	2	0	1
5002	HGQSDPARPFAATA	_____HGQSDPARPFAATA_____	3	1	1	1
5002	VTALMYDHGQSDPS	VTALMYDHGQSDPS_____	1	0	0	1
5002	LMYDHGQSDPSRAF	___LMYDHGQSDPSRAF_____	1	1	0	0
5002	LMYDHGQSDPARPFAATANPWA	___LMYDHGQSDPARPFAATANPWA___	1	1	0	0
5002	LMYDHGQSDPARPF	___LMYDHGQSDPARPF_____	1	1	0	0

alignment	LUThrs	GeneName	start	structure	Group	Score
_____HGQSDPARPFAATA_____	X18121	HSV-2-pUL19	1229	14aa	mRNA_30cpc_SN	1
_____HGQSDPARPFAATA_____	X18121	HSV-2-pUL19	1229	14aa	mRNA_30cpc_Th	1
_____HGQSDPARPFAATA_____	X18121	HSV-2-pUL19	1229	14aa	mRNA_30cpc_Ctx	1
___LMYDHGQSDPARPF_____	X52993	HSV-1-pUL19	1225	14aaA5	mRNA_30cpc_Ctx	1
___LMYDHGQSDPARPF_____	X52993	HSV-2-pUL19	1225	14aaA5	mRNA_30cpc_Ctx	1
___LMYDHGQSDPARPFAATANPWA___	X29818	HSV-1-pUL19	1225	22aa	mRNA_30cpc_Ctx	1
___LMYDHGQSDPARPFAATANPWA___	X29818	HSV-2-pUL19	1225	22aa	mRNA_30cpc_Ctx	1
___LMYDHGQSDPSRAF_____	X52992	HSV-1-pUL19	1225	14aaA5	mRNA_30cpc_Ctx	1
___LMYDHGQSDPSRAF_____	X52992	HSV-2-pUL19	1225	14aaA5	mRNA_30cpc_Ctx	1
___LMYDHGQSDPSRAFAATANPWA___	X29816	HSV-1-pUL19	1225	22aa	mRNA_30cpc_SN	1
___LMYDHGQSDPSRAFAATANPWA___	X29816	HSV-2-pUL19	1225	22aa	mRNA_30cpc_SN	1
___LMYDHGQSDPSRAFAATANPWA___	X29816	HSV-1-pUL19	1225	22aa	mRNA_30cpc_Ctx	2
___LMYDHGQSDPSRAFAATANPWA___	X29816	HSV-2-pUL19	1225	22aa	mRNA_30cpc_Ctx	2
_TALMYDHGQSDPSR_____	X8538	HSV-1-pUL19	1223	14aa	mRNA_3cpc_Th	1
_TALMYDHGQSDPSR_____	X8538	HSV-2-pUL19	1223	14aa	mRNA_3cpc_Th	1
_TALMYDHGQSDPSR_____	X8538	HSV-1-pUL19	1223	14aa	mRNA_30cpc_Ctx	2
_TALMYDHGQSDPSR_____	X8538	HSV-2-pUL19	1223	14aa	mRNA_30cpc_Ctx	2
VTALMYDHGQSDPS_____	X58318	HSV-1-pUL19	1222	14aaA5	mRNA_30cpc_SN	1
VTALMYDHGQSDPS_____	X58318	HSV-2-pUL19	1222	14aaA5	mRNA_30cpc_SN	1
_____YDHGQSDPARPFAA_____	X71293	HSV-1-pUL19	1227	14aa	mRNA_30cpc_SN	1
_____YDHGQSDPARPFAA_____	X71293	HSV-2-pUL19	1227	14aa	mRNA_30cpc_SN	1
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_____YDHGQSDPARPFAA_____	X71293	HSV-2-pUL19	1227	14aa	mRNA_30cpc_Th	1
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Peptide GVADVELPGGEVPP from HSV-1-pUL19 with cluster number 4482

peptide GVADVELPGGEVPP from HSV-1-pUL19 with cluster number 4



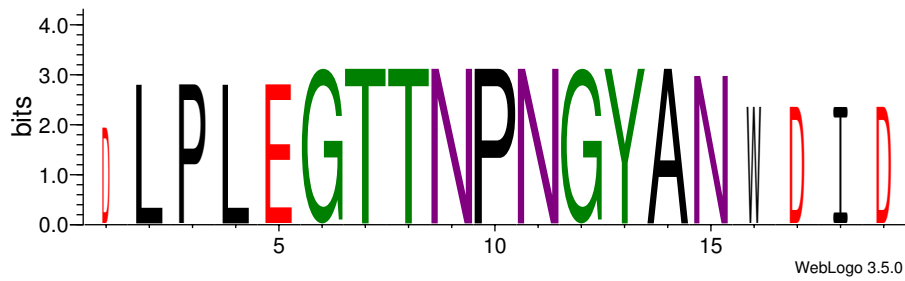
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4482	GVADVELPGGEVPP	17	5	3	7	2	0	0

cluster_id	sequence	alignment	sum	mRNA_30cpc_Ctx	mRNA_30cpc_Th	mRNA_30cpc_SN
4482	GVADVELPGGEVPP	GVADVELPGGEVPP_	5	1	1	2
4482	LPGGEVPPAGPGAI	____LPGGEVPPAGPGAI	4	1	0	3
4482	ADVELPGGEVPPAG	__ADVELPGGEVPPAG__	3	1	1	1
4482	VELPGGEVPPAGPG	___VELPGGEVPPAGPG__	2	1	1	0
4482	DVELPGGDVPPAGP	___DVELPGGDVPPAGP___	2	1	0	1
4482	TGTVLPGGENRRPP	__TGTVLPGGENRRPP___	1	0	0	0

alignment	LUThrs	GeneName	start	structure	Group	Score
__ADVELPGGEVPPAG__	X43071	HSV-1-pUL19	554	14aa	mRNA_30cpc_SN	1
__ADVELPGGEVPPAG__	X43071	HSV-2-pUL19	554	14aa	mRNA_30cpc_SN	1
__ADVELPGGEVPPAG__	X43071	HSV-1-pUL19	554	14aa	mRNA_30cpc_Th	1
__ADVELPGGEVPPAG__	X43071	HSV-2-pUL19	554	14aa	mRNA_30cpc_Th	1
__ADVELPGGEVPPAG__	X43071	HSV-1-pUL19	554	14aa	mRNA_30cpc_Ctx	1
__ADVELPGGEVPPAG__	X43071	HSV-2-pUL19	554	14aa	mRNA_30cpc_Ctx	1
___DVELPGGDVPPAGP___	X36344	HSV-1-pUL19	555	14aa	mRNA_30cpc_SN	1
___DVELPGGDVPPAGP___	X36344	HSV-2-pUL19	555	14aa	mRNA_30cpc_SN	1
___DVELPGGDVPPAGP___	X36344	HSV-1-pUL19	555	14aa	mRNA_30cpc_Ctx	1
___DVELPGGDVPPAGP___	X36344	HSV-2-pUL19	555	14aa	mRNA_30cpc_Ctx	1
GVADVELPGGEVPP_	X64949	HSV-1-pUL19	552	14aa	mRNA_30cpc_SN	2
GVADVELPGGEVPP_	X64949	HSV-2-pUL19	552	14aa	mRNA_30cpc_SN	2
GVADVELPGGEVPP_	X64949	HSV-1-pUL19	552	14aa	mRNA_30cpc_Th	1
GVADVELPGGEVPP_	X64949	HSV-2-pUL19	552	14aa	mRNA_30cpc_Th	1
GVADVELPGGEVPP_	X64949	HSV-1-pUL19	552	14aa	mRNA_3cpc_Th	1
GVADVELPGGEVPP_	X64949	HSV-2-pUL19	552	14aa	mRNA_3cpc_Th	1
GVADVELPGGEVPP_	X64949	HSV-1-pUL19	552	14aa	mRNA_30cpc_Ctx	1
GVADVELPGGEVPP_	X64949	HSV-2-pUL19	552	14aa	mRNA_30cpc_Ctx	1
____LPGGEVPPAGPGAI	X30373	HSV-1-pUL19	558	14aa	mRNA_30cpc_SN	3
____LPGGEVPPAGPGAI	X30373	HSV-2-pUL19	558	14aa	mRNA_30cpc_SN	3
____LPGGEVPPAGPGAI	X30373	HSV-1-pUL19	558	14aa	mRNA_30cpc_Ctx	1
____LPGGEVPPAGPGAI	X30373	HSV-2-pUL19	558	14aa	mRNA_30cpc_Ctx	1
__TGTVLPGGENRRPP__	X47518	HSV-1-pUL36	2737	14aaA5	mRNA_3cpc_Th	1
___VELPGGEVPPAGPG___	X58881	HSV-1-pUL19	556	14aaA5	mRNA_30cpc_Th	1
___VELPGGEVPPAGPG___	X58881	HSV-2-pUL19	556	14aaA5	mRNA_30cpc_Th	1
___VELPGGEVPPAGPG___	X58881	HSV-1-pUL19	556	14aaA5	mRNA_30cpc_Ctx	1
___VELPGGEVPPAGPG___	X58881	HSV-2-pUL19	556	14aaA5	mRNA_30cpc_Ctx	1

Peptide LPLEGTTPNGYAN from EV71-VP1-1095-Japan-97 with cluster number 4315

.PLEGTTPNGYAN from EV71-VP1-1095-Japan-97 with cluster n



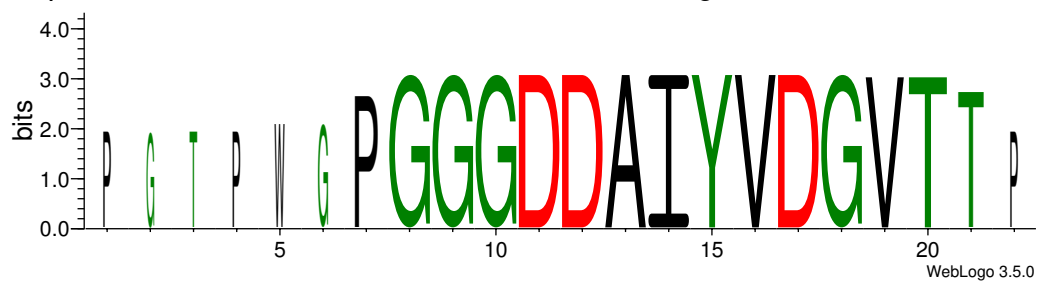
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4315	LPLEGTTPNGYAN	17	4	3	6	3	1	0

cluster_id	sequence	alignment	sum	mRNA_30cpc_Ctx	mRNA_30cpc_Th	mRNA_30cpc_SN
4315	LPLEGTTPNGYAN	_LPLEGTTPNGYAN_	8	2	2	3
4315	GTTNPNGYANWDID	____GTTNPNGYANWDID	6	1	1	3
4315	DLPLEGTTPNGYA	DLPLEGTTPNGYA_	3	1	0	0

alignment	LUTnrs	GeneName	start	structure	Group	Score
DLPLEGTTPNGYA_	X35295	EV71-VP1-1095-Japan-97	94	14aa	mRNA_3cpc_Th	1
DLPLEGTTPNGYA_	X35295	EV71-VP1-FY23	94	14aa	mRNA_3cpc_Th	1
DLPLEGTTPNGYA_	X35295	EV71-VP1-cx2011-016	94	14aa	mRNA_3cpc_Th	1
DLPLEGTTPNGYA_	X35295	EV71-VP1-1095-Japan-97	94	14aa	mRNA_30cpc_Ctx	1
DLPLEGTTPNGYA_	X35295	EV71-VP1-FY23	94	14aa	mRNA_30cpc_Ctx	1
DLPLEGTTPNGYA_	X35295	EV71-VP1-cx2011-016	94	14aa	mRNA_30cpc_Ctx	1
DLPLEGTTPNGYA_	X54427	EV71-VP1-1095-Japan-97	94	14aaA5	mRNA_3cpc_Ctx	1
DLPLEGTTPNGYA_	X54427	EV71-VP1-FY23	94	14aaA5	mRNA_3cpc_Ctx	1
DLPLEGTTPNGYA_	X54427	EV71-VP1-cx2011-016	94	14aaA5	mRNA_3cpc_Ctx	1
____GTTNPNGYANWDID	X61485	EV71-VP1-1095-Japan-97	99	14aa	mRNA_30cpc_SN	3
____GTTNPNGYANWDID	X61485	EV71-VP1-FY23	99	14aa	mRNA_30cpc_SN	3
____GTTNPNGYANWDID	X61485	EV71-VP1-cx2011-016	99	14aa	mRNA_30cpc_SN	3
____GTTNPNGYANWDID	X61485	EV71-VP1-1095-Japan-97	99	14aa	mRNA_30cpc_Th	1
____GTTNPNGYANWDID	X61485	EV71-VP1-FY23	99	14aa	mRNA_30cpc_Th	1
____GTTNPNGYANWDID	X61485	EV71-VP1-cx2011-016	99	14aa	mRNA_30cpc_Th	1
____GTTNPNGYANWDID	X61485	EV71-VP1-1095-Japan-97	99	14aa	mRNA_3cpc_Th	1
____GTTNPNGYANWDID	X61485	EV71-VP1-FY23	99	14aa	mRNA_3cpc_Th	1
____GTTNPNGYANWDID	X61485	EV71-VP1-cx2011-016	99	14aa	mRNA_3cpc_Th	1
____GTTNPNGYANWDID	X61485	EV71-VP1-1095-Japan-97	99	14aa	mRNA_30cpc_Ctx	1
____GTTNPNGYANWDID	X61485	EV71-VP1-FY23	99	14aa	mRNA_30cpc_Ctx	1
____GTTNPNGYANWDID	X61485	EV71-VP1-cx2011-016	99	14aa	mRNA_30cpc_Ctx	1
LPLEGTTPNGYAN	X30268	EV71-VP1-1095-Japan-97	95	14aa	mRNA_30cpc_SN	3
LPLEGTTPNGYAN	X30268	EV71-VP1-FY23	95	14aa	mRNA_30cpc_SN	3
LPLEGTTPNGYAN	X30268	EV71-VP1-cx2011-016	95	14aa	mRNA_30cpc_SN	3
LPLEGTTPNGYAN	X30268	EV71-VP1-1095-Japan-97	95	14aa	mRNA_30cpc_Th	2
LPLEGTTPNGYAN	X30268	EV71-VP1-FY23	95	14aa	mRNA_30cpc_Th	2
LPLEGTTPNGYAN	X30268	EV71-VP1-cx2011-016	95	14aa	mRNA_30cpc_Th	2
LPLEGTTPNGYAN	X30268	EV71-VP1-1095-Japan-97	95	14aa	mRNA_3cpc_Th	1
LPLEGTTPNGYAN	X30268	EV71-VP1-FY23	95	14aa	mRNA_3cpc_Th	1
LPLEGTTPNGYAN	X30268	EV71-VP1-cx2011-016	95	14aa	mRNA_3cpc_Th	1
LPLEGTTPNGYAN	X30268	EV71-VP1-1095-Japan-97	95	14aa	mRNA_30cpc_Ctx	2
LPLEGTTPNGYAN	X30268	EV71-VP1-FY23	95	14aa	mRNA_30cpc_Ctx	2
LPLEGTTPNGYAN	X30268	EV71-VP1-cx2011-016	95	14aa	mRNA_30cpc_Ctx	2

Peptide GGGDDAIYVDGVTT from PRV-Becker-gE with cluster number 6581

Peptide GGGDDAIYVDGVTT from PRV-Becker-gE with cluster number 65



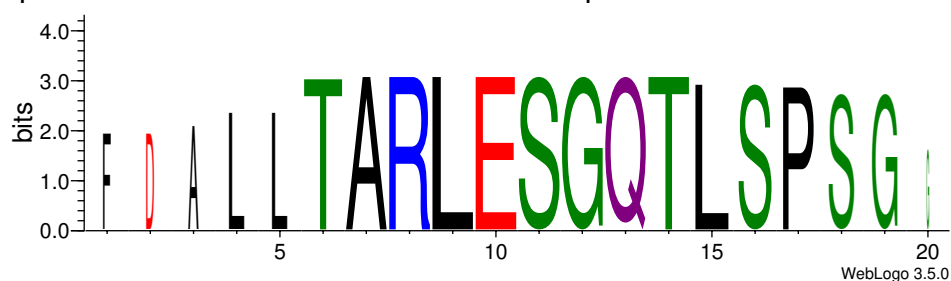
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6581	GGGDDAIYVDGVTT	16	5	4	3	4	0	0

cluster_id	sequence	alignment	sum	mRNA_30cpc_Ctx	mRNA_30cpc_Th	mRNA_30cpc_SN
6581	GGGDDAIYVDGVTT	_____GGGDDAIYVDGVTT_	7	3	2	1
6581	PGGGDDAIYVDGVT	_____PGGGDDAIYVDGVT__	5	1	1	2
6581	PGTPWGPGGGDDAIYVDGVTTTP	PGTPWGPGGGDDAIYVDGVTTTP	3	1	1	0
6581	WPGGGGDDAIYVDG	____WPGGGGDDAIYVDG____	1	0	0	0

alignment	LUThrs	GeneName	start	structure	Group	Score
_____GGGDDAIYVDGVTT_	X64633	PRV-Becker-gE	397	14aa	mRNA_30cpc_SN	1
_____GGGDDAIYVDGVTT_	X64633	PRV-TJ-gE	398	14aa	mRNA_30cpc_SN	1
_____GGGDDAIYVDGVTT_	X64633	PRV-Becker-gE	397	14aa	mRNA_30cpc_Th	2
_____GGGDDAIYVDGVTT_	X64633	PRV-TJ-gE	398	14aa	mRNA_30cpc_Th	2
_____GGGDDAIYVDGVTT_	X64633	PRV-Becker-gE	397	14aa	mRNA_3cpc_Th	1
_____GGGDDAIYVDGVTT_	X64633	PRV-TJ-gE	398	14aa	mRNA_3cpc_Th	1
_____GGGDDAIYVDGVTT_	X64633	PRV-Becker-gE	397	14aa	mRNA_30cpc_Ctx	3
_____GGGDDAIYVDGVTT_	X64633	PRV-TJ-gE	398	14aa	mRNA_30cpc_Ctx	3
_____PGGGDDAIYVDGVT__	X24032	PRV-Becker-gE	396	14aa	mRNA_30cpc_SN	2
_____PGGGDDAIYVDGVT__	X24032	PRV-TJ-gE	397	14aa	mRNA_30cpc_SN	2
_____PGGGDDAIYVDGVT__	X24032	PRV-Becker-gE	396	14aa	mRNA_30cpc_Th	1
_____PGGGDDAIYVDGVT__	X24032	PRV-TJ-gE	397	14aa	mRNA_30cpc_Th	1
_____PGGGDDAIYVDGVT__	X24032	PRV-Becker-gE	396	14aa	mRNA_3cpc_Th	1
_____PGGGDDAIYVDGVT__	X24032	PRV-TJ-gE	397	14aa	mRNA_3cpc_Th	1
_____PGGGDDAIYVDGVT__	X24032	PRV-Becker-gE	396	14aa	mRNA_30cpc_Ctx	1
_____PGGGDDAIYVDGVT__	X24032	PRV-TJ-gE	397	14aa	mRNA_30cpc_Ctx	1
PGTPWGPGGGDDAIYVDGVTTTP	X23749	PRV-Becker-gE	390	22aa	mRNA_30cpc_Th	1
PGTPWGPGGGDDAIYVDGVTTTP	X23749	PRV-TJ-gE	391	22aa	mRNA_30cpc_Th	1
PGTPWGPGGGDDAIYVDGVTTTP	X23749	PRV-Becker-gE	390	22aa	mRNA_3cpc_Th	1
PGTPWGPGGGDDAIYVDGVTTTP	X23749	PRV-TJ-gE	391	22aa	mRNA_3cpc_Th	1
PGTPWGPGGGDDAIYVDGVTTTP	X23749	PRV-Becker-gE	390	22aa	mRNA_30cpc_Ctx	1
PGTPWGPGGGDDAIYVDGVTTTP	X23749	PRV-TJ-gE	391	22aa	mRNA_30cpc_Ctx	1
____WPGGGGDDAIYVDG____	X60406	PRV-Becker-gE	394	14aaA5	mRNA_3cpc_Th	1
____WPGGGGDDAIYVDG____	X60406	PRV-TJ-gE	395	14aaA5	mRNA_3cpc_Th	1

Peptide TARLESGQTLSPSG from HSV-1-pUL36 with cluster number 6525

peptide TARLESGQTLSPSG from HSV-1-pUL36 with cluster number 6525



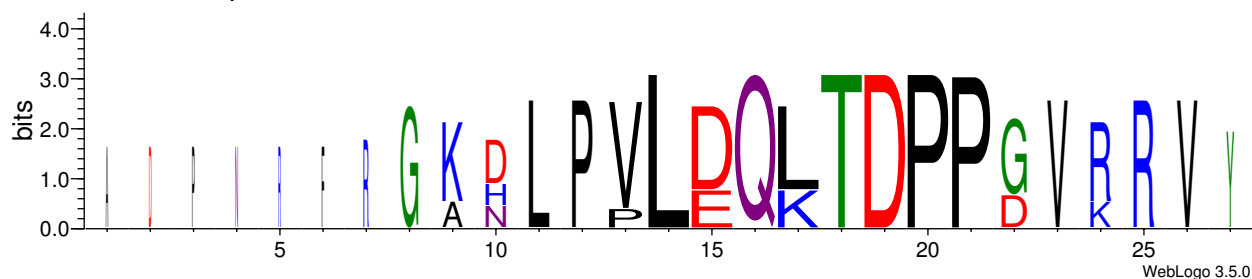
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6525	TARLESGQTLSPSG	16	4	3	2	6	0	0

cluster_id	sequence	alignment	sum	mRNA_30cpc_Ctx	mRNA_30cpc_Th	mRNA_30cpc_SN
6525	TARLESGQTLSPSG	____TARLESGQTLSPSG_	9	2	2	2
6525	FDALLTARLESGQT	FDALLTARLESGQT_____	3	1	1	0
6525	LLTARLESGQTLSP	___LLTARLESGQTLSP___	2	0	0	0
6525	ARLESGQTLSPSGG	____ARLESGQTLSPSGG	1	0	0	0
6525	ALLTARLESGQTLS	__ALLTARLESGQTLS___	1	1	0	0

alignment	LUThrs	GeneName	start	structure	Group	Score
__ALLTARLESGQTLS___	X42486	HSV-1-pUL36	2256	14aa	mRNA_30cpc_Ctx	1
____ARLESGQTLSPSGG	X56189	HSV-1-pUL36	2260	14aaA5	mRNA_3cpc_Th	1
FDALLTARLESGQT_____	X60798	HSV-1-pUL36	2254	14aaA5	mRNA_30cpc_Th	1
FDALLTARLESGQT_____	X60798	HSV-1-pUL36	2254	14aaA5	mRNA_3cpc_Th	1
FDALLTARLESGQT_____	X60798	HSV-1-pUL36	2254	14aaA5	mRNA_30cpc_Ctx	1
___LLTARLESGQTLSP___	X30811	HSV-1-pUL36	2257	14aa	mRNA_3cpc_Th	1
___LLTARLESGQTLSP___	X30811	HSV-1-pUL36	2257	14aa	mRNA_30cpc_Th_4wks	1
____TARLESGQTLSPSG_	X8527	HSV-1-pUL36	2259	14aa	mRNA_30cpc_SN	2
____TARLESGQTLSPSG_	X8527	HSV-1-pUL36	2259	14aa	mRNA_30cpc_Th	2
____TARLESGQTLSPSG_	X8527	HSV-1-pUL36	2259	14aa	mRNA_3cpc_Th	3
____TARLESGQTLSPSG_	X8527	HSV-1-pUL36	2259	14aa	mRNA_30cpc_Ctx	2

Peptide LEQKTDPPDVRRVY from BV-G with cluster number 6491

Peptide LEQKTDPPDVRRVY from BV-G with cluster number 6491



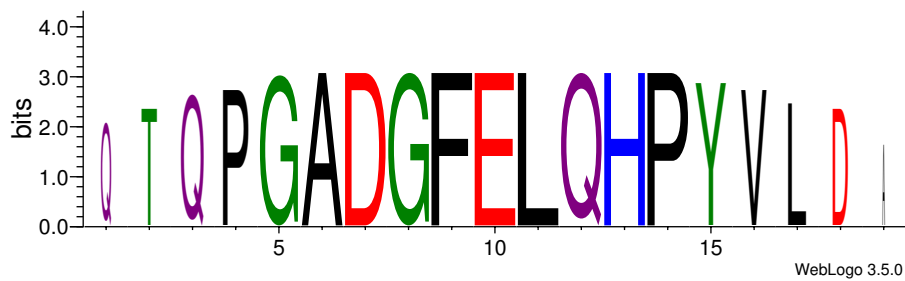
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6491	LEQKTDPPDVRRVY	16	6	4	5	1	0	0

cluster_id	sequence	alignment	sum	mRNA_30cpc_Ctx	mRNA_30cpc_Th	mRNA_30cpc_SN
6491	VLDQLTDPPGVRRV	-----VLDQLTDPPGVRRV_	3	2	0	1
6491	LEQKTDPPDVRRVY	-----LEQKTDPPDVRRVY	3	1	1	1
6491	VLDQLTDPPGVKRV	-----VLDQLTDPPGVKRV_	2	0	1	1
6491	GKNLPVLDQLTDPP	-----GKNLPVLDQLTDPP	2	1	1	0
6491	GAHLPPLEQKTDPP	-----GAHLPPLEQKTDPP	2	0	1	0
6491	RGKDLPLVDQLTDP	-----RGKDLPLVDQLTDP	1	1	0	0
6491	KDLPVLDQLTDPPG	-----KDLPVLDQLTDPPG	1	0	0	1
6491	GKDLPLVDQLTDPP	-----GKDLPLVDQLTDPP	1	0	0	1
6491	ADPNRFRGKDLPLVDQLTDPPG	ADPNRFRGKDLPLVDQLTDPPG	1	1	0	0

alignment	LUThrs	GeneName	start	structure	Group	Score
ADPNRFRGKDLPLVDQLTDPPG	X42935	HSV-1-pUS6	37	22aa	mRNA_30cpc_Ctx	1
ADPNRFRGKDLPLVDQLTDPPG	X42935	HSV-2-pUS6	37	22aa	mRNA_30cpc_Ctx	1
-----GAHLPPLEQKTDPP	X57771	BV-G	43	14aaA5	mRNA_30cpc_Th	1
-----GAHLPPLEQKTDPP	X57771	BV-G	43	14aaA5	mRNA_3cpc_Th	1
-----GKDLPLVDQLTDPP	X61347	HSV-1-pUS6	44	14aa	mRNA_30cpc_SN	1
-----GKDLPLVDQLTDPP	X61347	HSV-2-pUS6	44	14aa	mRNA_30cpc_SN	1
-----GKNLPVLDQLTDPP	X61263	HSV-1-pUS6	44	14aa	mRNA_30cpc_Th	1
-----GKNLPVLDQLTDPP	X61263	HSV-2-pUS6	44	14aa	mRNA_30cpc_Th	1
-----GKNLPVLDQLTDPP	X61263	HSV-1-pUS6	44	14aa	mRNA_30cpc_Ctx	1
-----GKNLPVLDQLTDPP	X61263	HSV-2-pUS6	44	14aa	mRNA_30cpc_Ctx	1
-----KDLPVLDQLTDPPG	X4493	HSV-1-pUS6	45	14aa	mRNA_30cpc_SN	1
-----KDLPVLDQLTDPPG	X4493	HSV-2-pUS6	45	14aa	mRNA_30cpc_SN	1
-----LEQKTDPPDVRRVY	X84754	BV-G	49	14aaG4S	mRNA_30cpc_SN	1
-----LEQKTDPPDVRRVY	X84754	BV-G	49	14aaG4S	mRNA_30cpc_Th	1
-----LEQKTDPPDVRRVY	X84754	BV-G	49	14aaG4S	mRNA_30cpc_Ctx	1
-----RGKDLPLVDQLTDP	X27384	HSV-1-pUS6	43	14aa	mRNA_30cpc_Ctx	1
-----RGKDLPLVDQLTDP	X27384	HSV-2-pUS6	43	14aa	mRNA_30cpc_Ctx	1
-----VLDQLTDPPGVKRV	X90050	HSV-1-pUS6	49	14aaG4S	mRNA_30cpc_SN	1
-----VLDQLTDPPGVKRV	X90050	HSV-2-pUS6	49	14aaG4S	mRNA_30cpc_SN	1
-----VLDQLTDPPGVKRV	X90050	HSV-1-pUS6	49	14aaG4S	mRNA_30cpc_Th	1
-----VLDQLTDPPGVKRV	X90050	HSV-2-pUS6	49	14aaG4S	mRNA_30cpc_Th	1
-----VLDQLTDPPGVRRV	X67836	HSV-1-pUS6	49	14aa	mRNA_30cpc_SN	1
-----VLDQLTDPPGVRRV	X67836	HSV-2-pUS6	49	14aa	mRNA_30cpc_SN	1
-----VLDQLTDPPGVRRV	X67836	HSV-1-pUS6	49	14aa	mRNA_30cpc_Ctx	2
-----VLDQLTDPPGVRRV	X67836	HSV-2-pUS6	49	14aa	mRNA_30cpc_Ctx	2

Peptide GADGFELQHPYVLD from EV71-VP2 with cluster number 6487

peptide GADGFELQHPYVLD from EV71-VP2 with cluster number 6487



cluster_id	main_sequence	sum	mRNA_30cpc_Ctx	mRNA_30cpc_Th	mRNA_30cpc_SN	mRNA_3cpc_Th	mRNA_3cpc_Ctx	mRNA_3cpc_SN
6487	GADGFELQHPYVLD	16	6	2	4	3	0	0

cluster_id	sequence	alignment	sum	mRNA_30cpc_Ctx	mRNA_30cpc_Th	mRNA_30cpc_SN
6487	GADGFELQHPYVLD	_____GADGFELQHPYVLD_	5	2	1	1
6487	QTQPGADGFELQHP	QTQPGADGFELQHP_____	4	3	0	0
6487	QPGADGFELQHPYV	__QPGADGFELQHPYV___	3	0	0	1
6487	TQPGADGFELQHPY	_TQPGADGFELQHPY_____	2	1	1	0
6487	PGADGFELQHPYVL	___PGADGFELQHPYVL__	1	0	0	1
6487	ADGFELQHPYVLDA	_____ADGFELQHPYVLDA	1	0	0	1

alignment	LUThrs	GeneName	start	structure	Group	Score
_____ADGFELQHPYVLDA	X43061	EV71-VP2	155	14aa	mRNA_30cpc_SN	1
_____GADGFELQHPYVLD_	X57804	EV71-VP2	154	14aaA5	mRNA_30cpc_SN	1
_____GADGFELQHPYVLD_	X57804	EV71-VP2	154	14aaA5	mRNA_30cpc_Th	1
_____GADGFELQHPYVLD_	X57804	EV71-VP2	154	14aaA5	mRNA_3cpc_Th	1
_____GADGFELQHPYVLD_	X57804	EV71-VP2	154	14aaA5	mRNA_30cpc_Ctx	2
___PGADGFELQHPYVL__	X23993	EV71-VP2	153	14aa	mRNA_30cpc_SN	1
__QPGADGFELQHPYV___	X19311	EV71-VP2	152	14aa	mRNA_30cpc_SN	1
__QPGADGFELQHPYV___	X19311	EV71-VP2	152	14aa	mRNA_3cpc_Th	1
__QPGADGFELQHPYV___	X19311	EV71-VP2	152	14aa	mRNA_30cpc_Th_4wks	1
QTQPGADGFELQHP_____	X18639	EV71-VP2	150	14aa	mRNA_3cpc_Th	1
QTQPGADGFELQHP_____	X18639	EV71-VP2	150	14aa	mRNA_30cpc_Ctx	3
_TQPGADGFELQHPY_____	X78352	EV71-VP2	151	14aaG4S	mRNA_30cpc_Th	1
_TQPGADGFELQHPY_____	X78352	EV71-VP2	151	14aaG4S	mRNA_30cpc_Ctx	1


```
# setkey(select.samples.trsp,Peptide) select.samples.trsp.select <-
# select.samples.trsp[J(c('PPDELNLTTASLPL'))]
```

```
print("Total analysis time:")
```

```
[1] "Total analysis time:"
```

```
print(Sys.time() - strt1)
```

```
Time difference of 2.108797 mins
```

```
devtools::session_info()
```

```
Session info -----
```

```
setting  value
version  R version 3.4.2 (2017-09-28)
system   x86_64, linux-gnu
ui        X11
language (EN)
collate   en_US.UTF-8
tz        UTC
date      2020-11-10
```

```
Packages -----
```

package	* version	date	source
ade4	1.7-8	2017-08-09	CRAN (R 3.4.2)
backports	1.1.1	2017-09-25	CRAN (R 3.4.2)
base	* 3.4.2	2017-10-06	local
compiler	3.4.2	2017-10-06	local
data.table	* 1.10.4-2	2017-10-12	url
datasets	* 3.4.2	2017-10-06	local
devtools	* 1.13.3	2017-08-02	CRAN (R 3.4.2)
digest	0.6.12	2017-01-27	CRAN (R 3.4.2)
evaluate	0.10.1	2017-06-24	CRAN (R 3.4.2)
formatR	1.5	2017-04-25	CRAN (R 3.4.2)
graphics	* 3.4.2	2017-10-06	local
grDevices	* 3.4.2	2017-10-06	local
highr	0.6	2016-05-09	CRAN (R 3.4.2)
hms	0.3	2016-11-22	CRAN (R 3.4.2)
htmltools	0.3.6	2017-04-28	CRAN (R 3.4.2)
httr	1.3.1	2017-08-20	CRAN (R 3.4.2)
kableExtra	* 0.5.2	2017-09-15	url
knitr	* 1.17	2017-08-10	CRAN (R 3.4.2)
magrittr	1.5	2014-11-22	CRAN (R 3.4.2)
memoise	1.1.0	2017-04-21	CRAN (R 3.4.2)
methods	3.4.2	2017-10-06	local
parallel	* 3.4.2	2017-10-06	local
plyr	1.8.4	2016-06-08	CRAN (R 3.4.2)
R6	2.2.2	2017-06-17	CRAN (R 3.4.2)
Rcpp	0.12.13	2017-09-28	url
readr	1.1.1	2017-05-16	CRAN (R 3.4.2)
reshape2	* 1.4.2	2016-10-22	CRAN (R 3.4.2)
rlang	0.1.2	2017-08-09	CRAN (R 3.4.2)
rmarkdown	1.6	2017-06-15	url
rprojroot	1.2	2017-01-16	CRAN (R 3.4.2)
rvest	0.3.2	2016-06-17	CRAN (R 3.4.2)
seqinr	* 3.4-5	2017-08-01	CRAN (R 3.4.2)

stats	* 3.4.2	2017-10-06	local
stringi	1.1.5	2017-04-07	url
stringr	1.2.0	2017-02-18	CRAN (R 3.4.2)
tibble	1.3.4	2017-08-22	CRAN (R 3.4.2)
tools	3.4.2	2017-10-06	local
utils	* 3.4.2	2017-10-06	local
withr	2.0.0	2017-07-28	url
xml2	1.1.1	2017-01-24	CRAN (R 3.4.2)
yaml	2.1.14	2016-11-12	CRAN (R 3.4.2)