

Pairwise sample analysis output

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Thu Nov 5 18:55:12 2020

This script presents overview plots and top candidates.

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

Generation of infective library

```
all.samples <- readRDS("data/allSamplesDataTable.RDS")

all.samples$Group[all.samples$Group == "mRNA_3cpc_HEK293T"] <- "mRNA_3cpc_HEK293T"
all.samples$Group[all.samples$Group == "mRNA_30cpc_HEK293T"] <- "mRNA_30cpc_HEK293T"
```

Plotting function

```
plotPair <- function(topSample, bottomSample, size.bin = 1, winWidth = 1, NormalizePlot = TRUE,
  PlotBC = TRUE) {
  # Select samples =====

  # topSample <- 'mRNA_30cpc_Organoid_MD114_R' bottomSample <-
  # 'mRNA_3000cpc_Organoid_MD101_R' filterBC <- FALSE filterAnimal <- FALSE
  # AnimaladjustPlot <- FALSE NormalizePlot <- TRUE size.bin <- 1 winWidth=1
  # PlotBC=TRUE

  fill.values <- eval(parse(text = paste("c(", topSample, "= rgb(38,64,135, maxColorValue = 255), ",
    bottomSample, "= rgb(157,190,217, maxColorValue = 255))", sep = "")))
  setkey(all.samples, Group)
  select.samples <- all.samples[J(names(fill.values))] #Select the two compared groups
  select.samples[, `:=`(RNACount, log2(RNACount + 1))]

  # if (PlotBC){
  # select.samples[,c('meanCount', 'SDcount', 'minCount')]:=list(mean(RNACount),
  # sd(RNACount), min(RNACount)), by='Group'] select.samples <-
  # select.samples[RNACount>=minCount+(2*SDcount),] #-SDcount
  # select.samples[,c('meanCount', 'SDcount', 'minCount'):=NULL] }

  if (winWidth > 0) {
    setorder(select.samples, Group, GeneName, start, width)

    windowTable <- select.samples[, c("GeneName", "start", "width"), with = FALSE]
    windowTable <- unique(windowTable, by = c("GeneName", "start", "width"))
    windowTable <- windowTable[, (seq(width - winWidth + 1) + start - 1),
      by = c("GeneName", "start", "width")]
    setnames(windowTable, "V1", "winStart")
    windowTable[, `:=`(winEnd, winStart + winWidth - 1)]
    setkeyv(windowTable, c("GeneName", "start", "width"))
```

```

setkeyv(select.samples, c("GeneName", "start", "width"))
select.samples.windowBin <- select.samples[windowTable, allow.cartesian = TRUE]
select.samples.windowBin[, `:=`(AAproc, winStart/seqlength * 100)]

setkey(select.samples.windowBin, Group)
select.samples.windowBin <- select.samples.windowBin[J(names(fill.values))] #Select the two compared groups
setkeyv(select.samples.windowBin, c("Group", "GeneName", "winStart",
                                   "winEnd"))
select.samples.windowBin <- select.samples.windowBin[, list(Overlaps = .N,
                                                       seqlength = min(seqlength), AAproc = min(AAproc), BC = paste(t(BC),
                                                                                   collapse = ","), Animals = paste(t(Animals), collapse = ","),
                                                       LUTnrs = paste(t(LUTnrs), collapse = ","), RNAcount = sum(RNAcount)),
                                                       by = c("Group", "GeneName", "winStart", "winEnd")]

plot.data.dt <- unique(select.samples.windowBin, by = c("Group", "GeneName",
                                                       "winStart", "winEnd"))

} else {
  plot.data.dt <- data.table::copy(select.samples)
}

# ===== Binning of data =====
FullLength <- 100
position <- seq(0, FullLength, size.bin)
plot.data.dt[, `:=`(bin, findInterval(AAproc, position))]

plot.data.bin <- plot.data.dt[, list(.N, seqlength = min(seqlength), AAproc = position[findInterval(mean(position))],
                                     BCsum = length(table(strsplit(paste(t(BC), collapse = ","), ","))), AnimalCount = length(table(strsplit(paste(t(Animals), collapse = ","), ","))), LUTnrs = paste(unique(names(table(strsplit(paste(t(LUTnrs), collapse = ","), ",")))), collapse = ","), NormCount = sum(RNAcount)/seqlength * FullLength), by = c("Group", "GeneName", "bin")]
plot.data.bin <- unique(plot.data.bin, by = c("Group", "GeneName", "bin"))

plot.data.bin[, `:=`(BCanim, as.double(BCsum * AnimalCount))]

# ===== Filtration parameters =====
if (NormalizePlot) {
  plot.data.bin[plot.data.bin$Group == names(fill.values)[1]]$NormCount <- plot.data.bin[plot.data.bin$Group == names(fill.values)[1]]$NormCount/max(plot.data.bin[plot.data.bin$Group == names(fill.values)[1]]$NormCount)
  plot.data.bin[plot.data.bin$Group == names(fill.values)[2]]$NormCount <- plot.data.bin[plot.data.bin$Group == names(fill.values)[2]]$NormCount/max(plot.data.bin[plot.data.bin$Group == names(fill.values)[2]]$NormCount)
}

if (PlotBC && NormalizePlot) {
  plot.data.bin[plot.data.bin$Group == names(fill.values)[1]]$BCanim <- plot.data.bin[plot.data.bin$Group == names(fill.values)[1]]$BCanim/max(plot.data.bin[plot.data.bin$Group == names(fill.values)[1]]$BCanim)
  plot.data.bin[plot.data.bin$Group == names(fill.values)[2]]$BCanim <- plot.data.bin[plot.data.bin$Group == names(fill.values)[2]]$BCanim/max(plot.data.bin[plot.data.bin$Group == names(fill.values)[2]]$BCanim)
}

```

```

plot.data.bin[plot.data.bin$Group == names(fill.values)[2]]$NormCount <- plot.data.bin[plot.data.bin$Group == names(fill.values)[2]]$NormCount * -1 #This line flips the values for the second group

plot.data.bin[plot.data.bin$Group == names(fill.values)[2]]$BCanim <- plot.data.bin[plot.data.bin$Group == names(fill.values)[2]]$BCanim * -1 #This line flips the values for the second group

# ====== Output plot =====

if (PlotBC) {
  outVar <- "BCanim"
} else {
  outVar <- "NormCount"
}

plot.out <- eval(parse(text = paste("ggplot(plot.data.bin,aes(x=AProc,y=",
  outVar, ", fill = Group, vjust=-20))", sep = "")))
plot.out <- plot.out + geom_bar(stat = "identity", position = "identity") +
  theme_bw() + scale_fill_manual(name = "Library", values = fill.values) +
  scale_colour_manual(name = "Library", values = fill.values) + scale_x_continuous(limit = c(0,
  100), breaks = c(seq(0, 100, 20)), expand = c(0, 0)) + facet_wrap(~GeneName,
  ncol = 5) + theme(plot.margin = unit(x = c(0, 0, 0, 0), units = "mm"),
  legend.position = "bottom", legend.spacing = unit(0, "cm"), legend.key.height = unit(0,
  "cm"), plot.background = element_rect(fill = "white"), axis.text = element_text(size = rel(0.45)),
  axis.ticks = element_line(size = rel(0.5)), axis.ticks.length = unit(0.05,
  "cm"), strip.text.x = element_text(size = rel(0.5), colour = "black",
  angle = 0, lineheight = 3, vjust = -20), strip.background = element_blank(),
  panel.spacing.y = unit(0, "cm"), panel.spacing.x = unit(0, "cm")))

# ====== Sort and select top samples =====

select.samples.binPos <- select.samples
setkeyv(select.samples.binPos, c("Group", "structure", "Sequence"))
setorder(select.samples.binPos, Group, structure, Sequence, GeneName)
select.samples.binPos <- unique(select.samples.binPos, by = c("Group", "structure",
  "Sequence"))
# Due to key, this removes replicates if identical sequence mapped to
# multiple genes

setkeyv(select.samples.binPos, c("Group", "Category", "GeneName", "AA"))
select.samples.binPos[, `:=` (c("BCcount", "NormCount", "AnimalCount", "LUTnrs",
  "mainStruct", "mismatches"), list(length(table(strsplit(paste(t(BC),
  collapse = ","), ","))), sum(NormCount), length(table(strsplit(paste(t(Animals),
  collapse = ","), ","))), paste(unique(names(table(strsplit(paste(t(LUTnrs),
  collapse = ","), ",")))), collapse = ","), paste(unique(structure),
  collapse = ","), median(mismatches))), by = key(select.samples.binPos))

select.samples.binPos <- unique(select.samples.binPos, by = c("Group", "NormCount",
  "LUTnrs"))
select.samples.binPos <- select.samples.binPos[, c("Group", "GeneName",
  "AA", "NormCount", "BCcount", "AnimalCount", "LUTnrs", "mainStruct",
  "mismatches"), with = FALSE]

if (PlotBC) {
  select.samples.binPos[, `:=` (BCanim, BCcount * AnimalCount)]
  setorder(select.samples.binPos, Group, -BCanim, -BCcount, -AnimalCount,
  -NormCount)
}

```

```

} else {
  setorder(select.samples.binPos, Group, -NormCount, -BCcount, -AnimalCount)
}
setkey(select.samples.binPos, Group)
select.samples.top <- select.samples.binPos[, head(.SD, 50), by = Group]
top.sample <- select.samples.top[J(names(fill.values)[1])]
bottom.sample <- select.samples.top[J(names(fill.values)[2])]
top.sample[, `:=`(c("Group"), NULL)]
setnames(top.sample, "GeneName", names(fill.values)[1])
bottom.sample[, `:=`(c("Group"), NULL)]
setnames(bottom.sample, "GeneName", names(fill.values)[2])

out.list <- list(plot = plot.out, plotBin = plot.data.bin, top = top.sample,
                 bottom = bottom.sample)

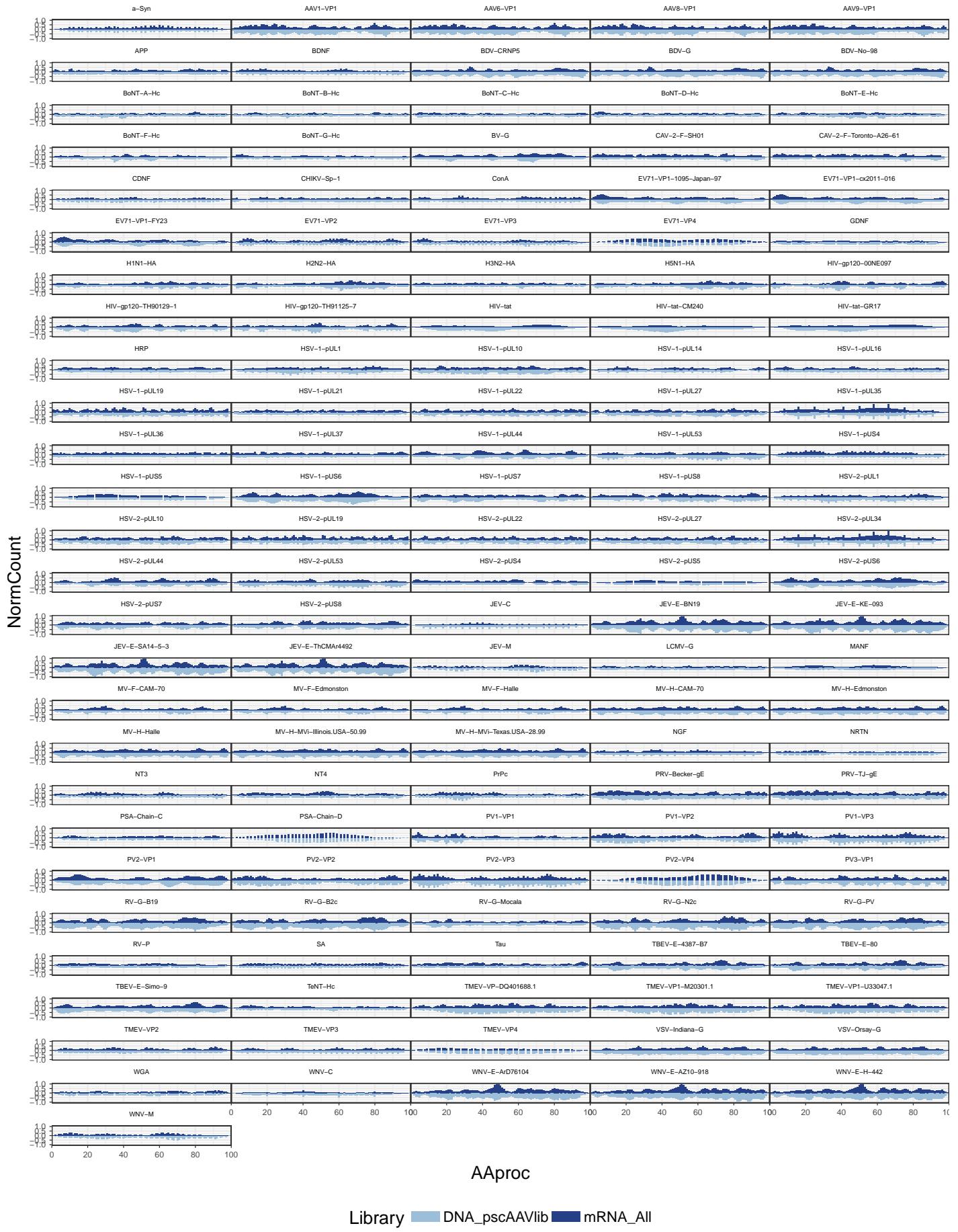
return(out.list)
}

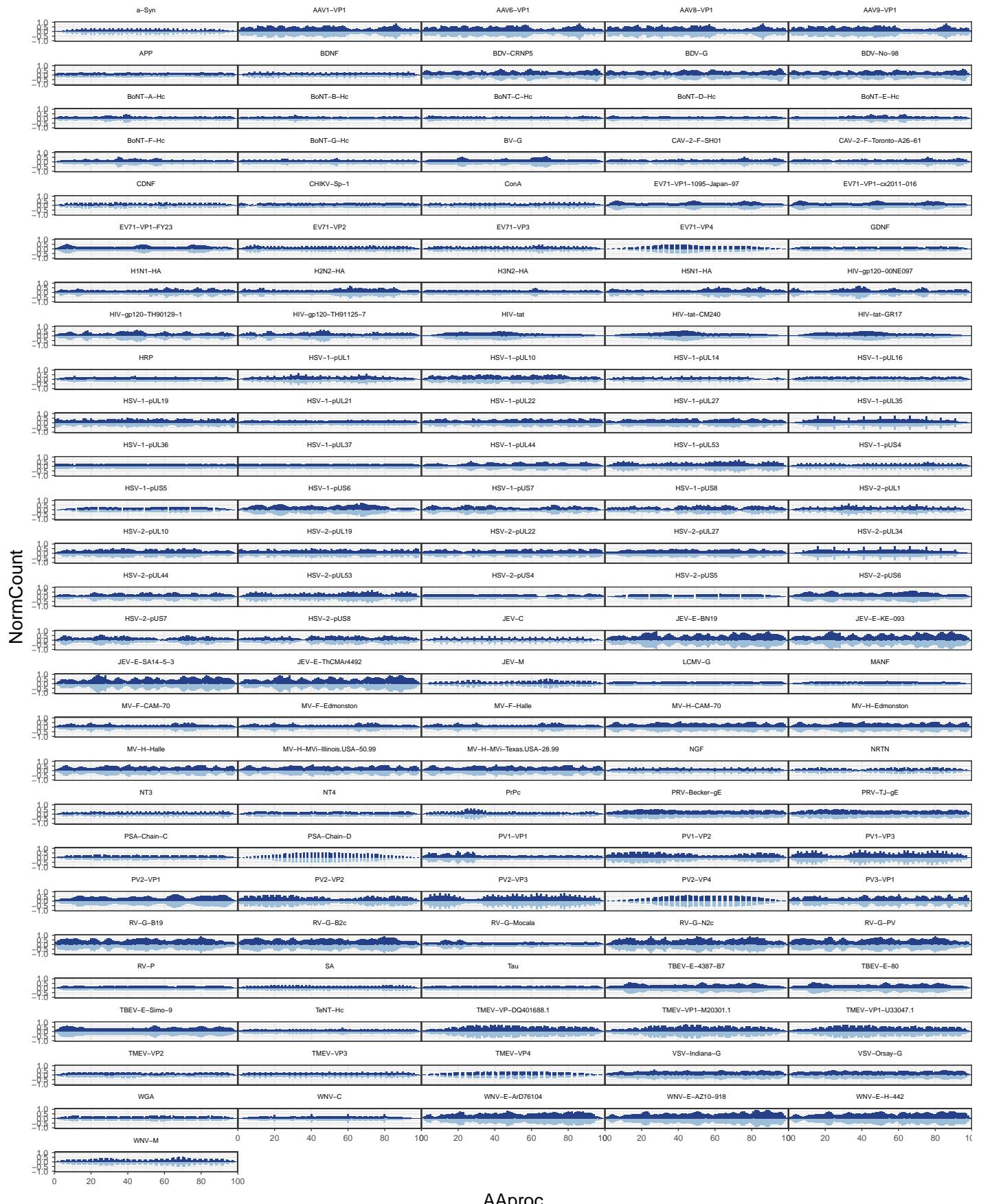
```

Analyze samples

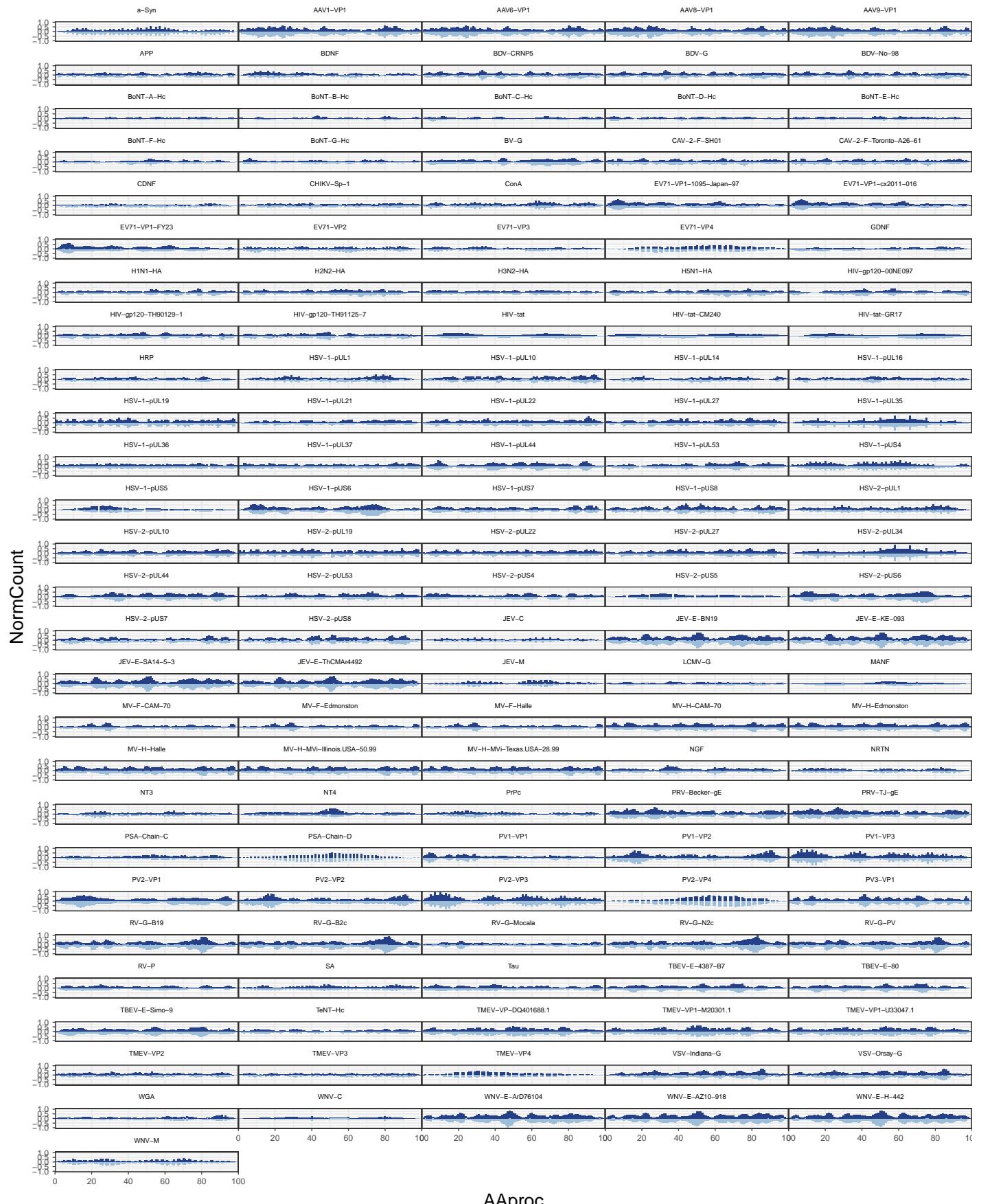
```
# ===== Sample plotting =====
```

Binning analysis version 1

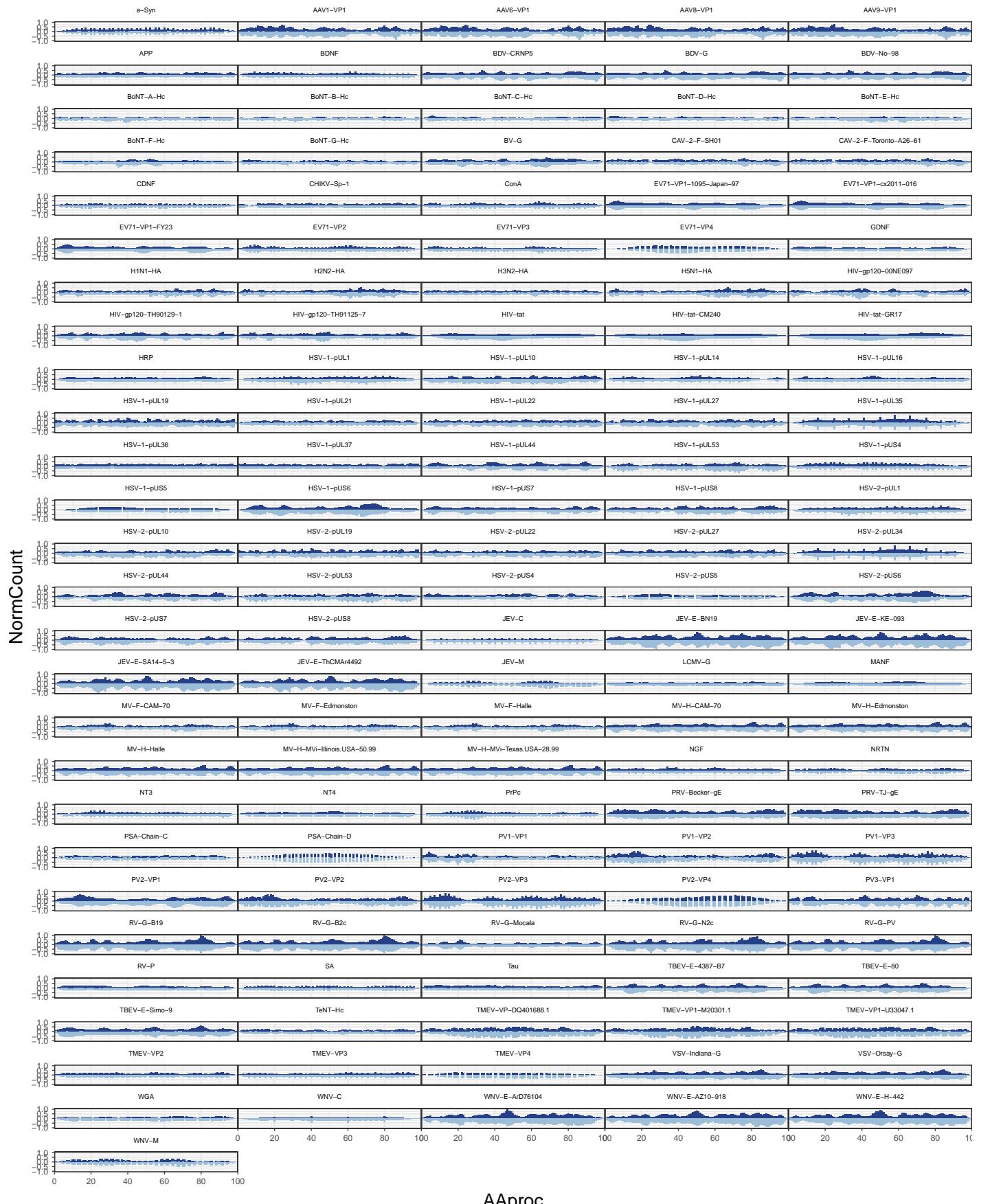




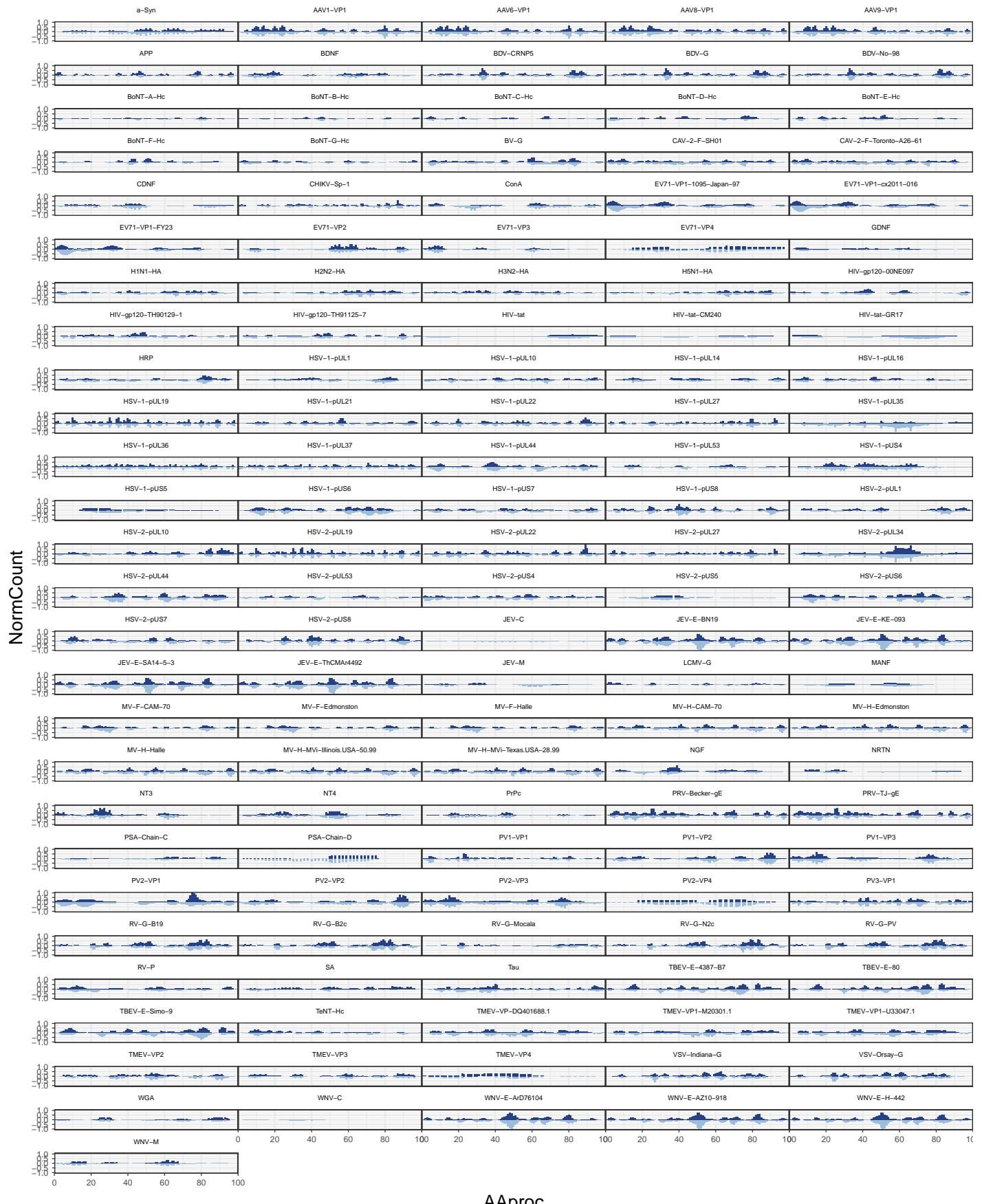
Library DNA_pscAAVlib DNA_pscAAVlib_Prep2



Library DNA_AAVlib_DNAse_30cpc DNA_AAVlib_DNAse_3cpc



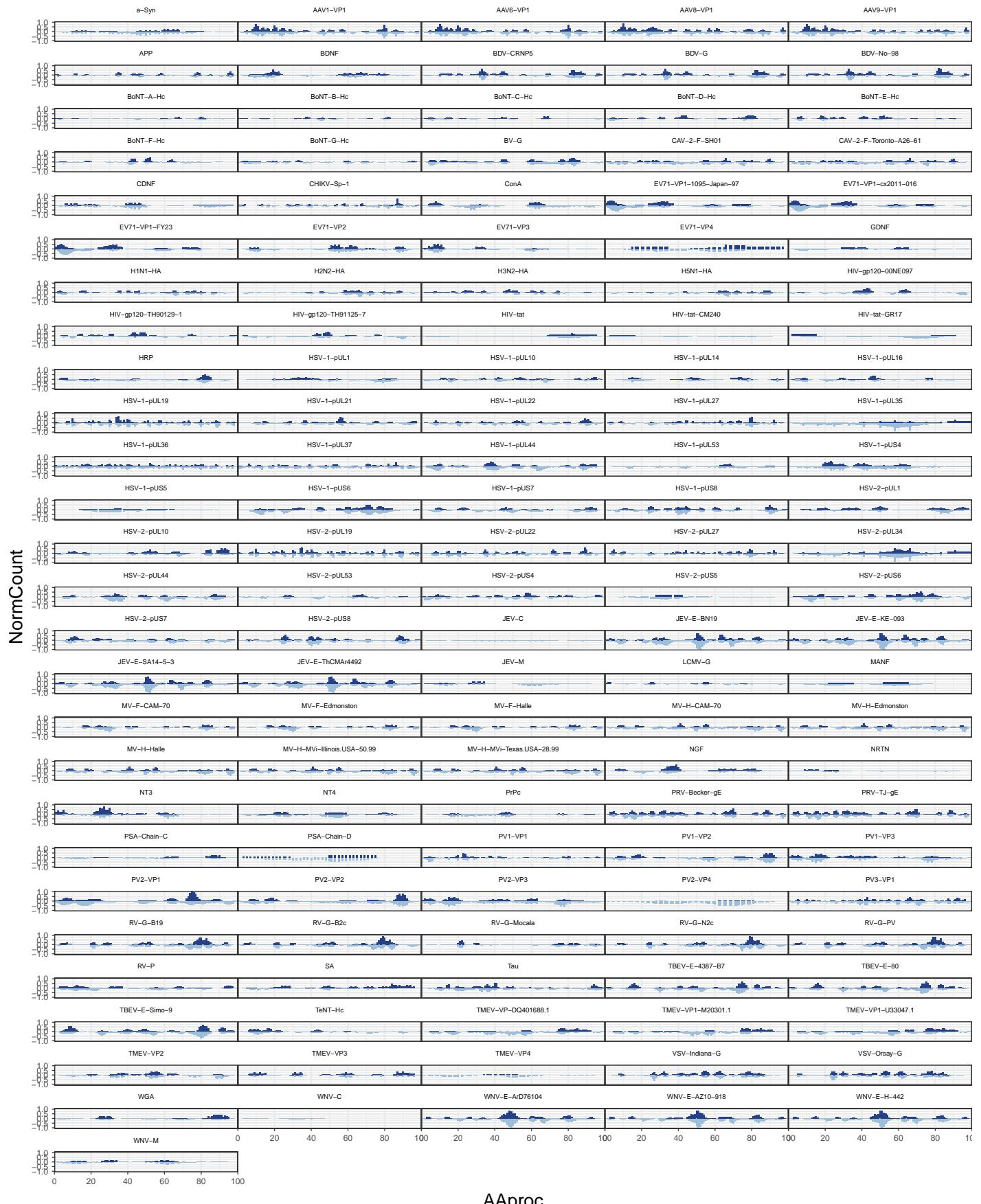
Library ■ DNA_AAVlib_DNAse_30cpc ■ DNA_pscAAVlib_Prep2



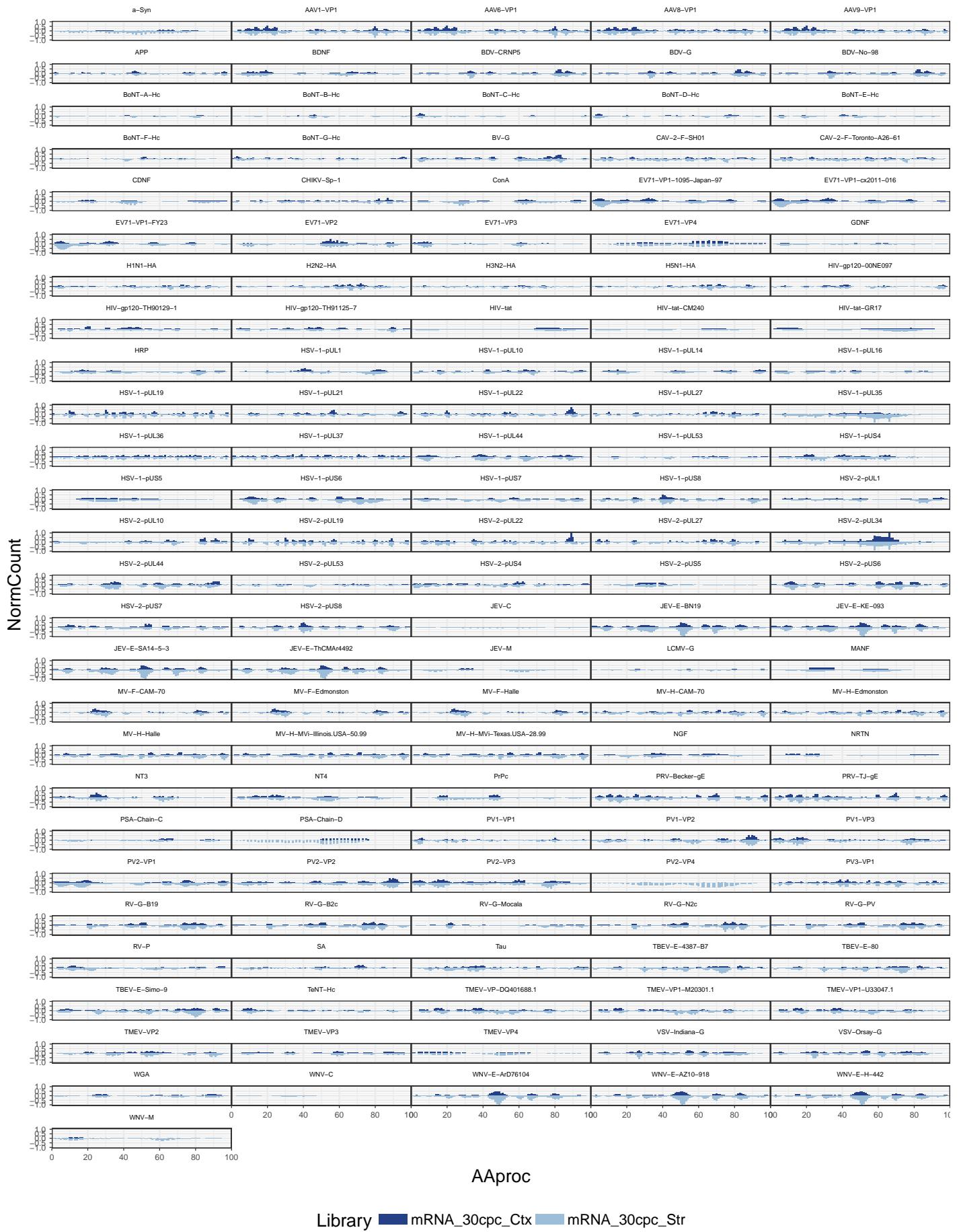
mRNA_30cpc_Trsp	AA	NormCount	BCcount	AnimalCount	LUTnrs	mainStruct	mismatches
HSV-1-pUL22	750	336.5560	3	9	X23667,X66790	14aa,22aa	2.00
HSV-1-pUL27	405	203.3059	2	9	X1574	14aa	0.00
AAV1-VP1	151	189.8952	3	6	X25958,X25959	14aa	1.50
HSV-1-pUL19	426	171.5209	3	6	X18063,X28277	14aa,22aa	0.50
HSV-1-pUS6	282	170.6386	3	9	X10394,X22271	14aa,22aa	0.50
BoNT-C-Hc	28	155.6327	1	8	X514	14aa	1.00
HSV-2-pUL10	395	155.4512	3	9	X35006,X54361,X85651	14aa,14aaA5,14aaG4S	0.00
JEV-E-BN19	11	154.4404	1	8	X53668	14aaA5	2.50
HIV-gp120-00NE097	161	150.5021	3	8	X14423,X66291	14aa,22aa	0.50
HSV-2-pUL10	422	149.2616	1	8	X21500	14aa	1.00
HSV-1-pUL37	927	147.8791	2	5	X43814	14aa	1.00
HSV-1-pUL36	2535	144.9633	1	8	X33526	14aa	0.00
HSV-1-pUL21	309	144.5657	4	6	X27207	14aa	3.00
MV-F-CAM-70	134	143.9713	2	7	X57985,X89275	14aaaA5,14aaG4S	1.00
HSV-1-pUL21	82	143.9631	3	7	X27483	14aa	0.50
PV1-VP2	246	143.1538	3	6	X40367,X66448	14aa	0.75
HSV-1-pUL1	95	140.3102	1	7	X56002	14aaaA5	0.00
AAV1-VP1	39	139.7363	1	7	X20734	14aa	2.00
HSV-1-pUL27	635	135.0201	1	7	X54552	14aaaA5	2.00
HSV-2-pUL22	755	130.8185	1	7	X53822	14aaaA5	1.00
HSV-1-pUS8	401	130.1088	1	8	X57800	14aaaA5	0.00
Tau	487	129.9266	3	5	X11521	14aa	0.00
PrPc	120	128.2965	1	7	X44210	14aa	1.50
NT3	59	127.5360	2	7	X26899	14aa	1.50
BoNT-G-Hc	17	125.6797	2	6	X27569	14aa	0.50
HSV-2-pUL34	74	125.6692	2	6	X47029,X6900	14aa,14aaaA5	0.25
CHIKV-Sp-1	1097	125.4810	2	7	X34522	14aa	0.50
EV71-VP3	23	124.7761	3	7	X47355,X8142	14aa,14aaaA5	0.75
WNV-E-AZ10-918	237	123.0575	2	6	X10815	22aa	0.00
HSV-1-pUS4	95	122.8122	1	7	X87983	14aaG4S	5.00
BV-G	325	120.8957	2	6	X20610	14aa	0.00
HSV-2-pUS4	62	119.0259	2	7	X31351	14aa	0.00
HSV-2-pUL19	474	117.3144	1	7	X17497	22aa	0.00
VSV-Indiana-G	215	116.4913	2	6	X36144	14aa	0.00
TMEV-VP2	120	116.1227	1	7	X20177	14aa	0.50
PV1-VP2	243	115.3443	3	5	X22754,X28523	14aa,22aa	0.50

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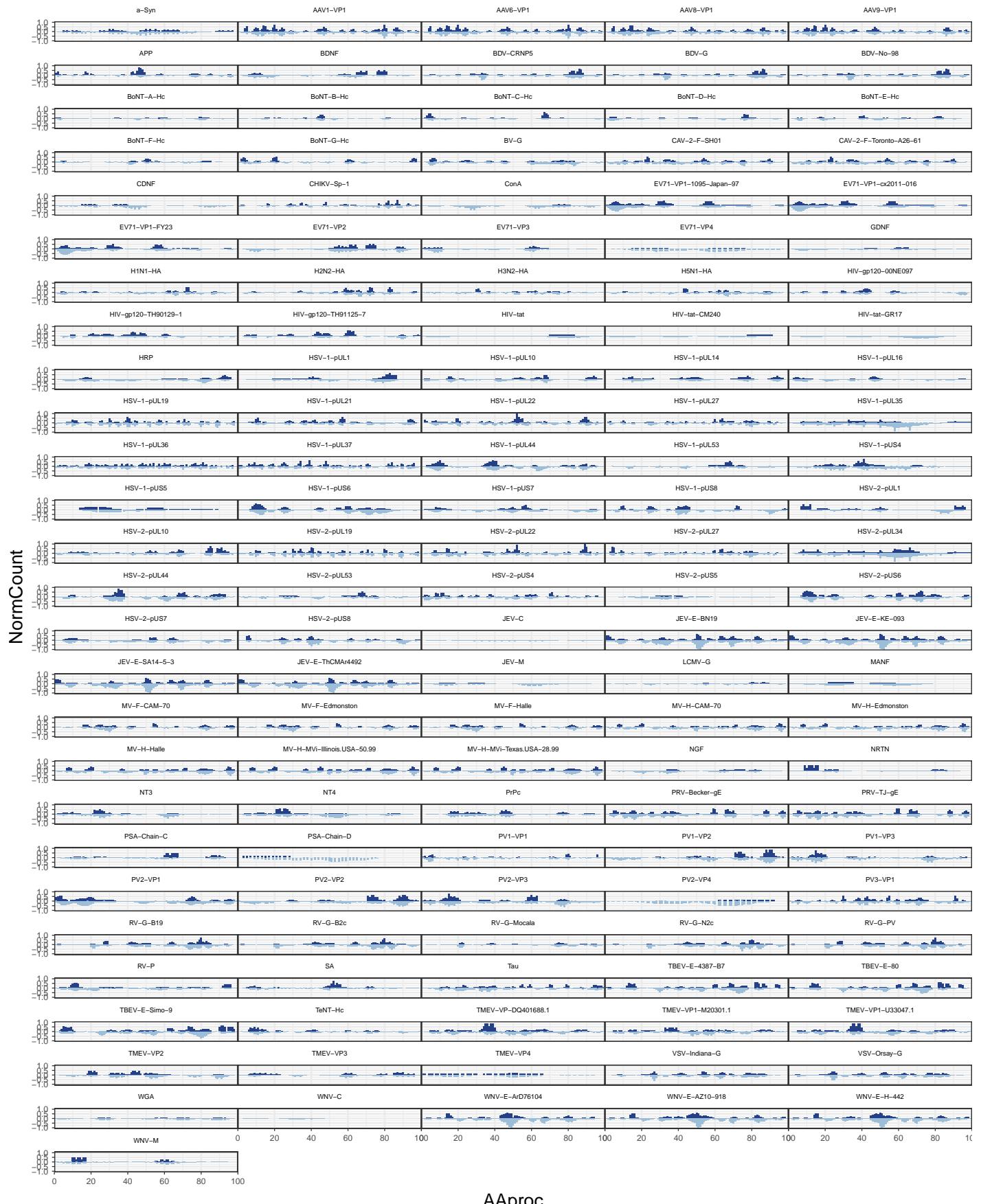
mRNA_30cpc_Str	AA	NormCount	BCcount	AnimalCount	LUTnrs	mainStruct	mismatches
PV1-VP1	61	182.88622	8	3	X22826,X22827	14aa	0.750
Tau	258	180.30252	7	3	X11013	14aa	0.000
HSV-2-pUL10	432	167.52293	8	3	X38890	14aa	0.750
JEV-E-BN19	261	149.75457	12	3	X13674,X18847,X18855,X42671,X42673	14aa,22aa	0.000
WNV-M	23	148.72693	8	3	X40365	14aa	0.000
HSV-1-pUL36	1808	146.18703	7	3	X27290,X83604	14aa,14aaG4S	0.500
AAV1-VP1	177	132.24473	8	3	X23308,X26310,X26311	14aa,22aa	1.000
HSV-1-pUL19	426	130.86368	8	3	X18063,X28276,X28277	14aa,22aa	0.000
HSV-1-pUL36	2687	130.53998	7	3	X22900,X51171	14aa,14aaaA5	0.875
JEV-E-BN19	348	127.42373	8	3	X13624,X13625,X13626,X67130	14aa,22aa	0.000
HSV-1-pUL14	107	120.73570	6	3	X23530	14aa	0.000
HSV-2-pUL44	149	119.76325	5	3	X21241	14aa	0.000
HSV-1-pUL19	845	115.22984	4	3	X47263,X7795	14aa,14aaaA5	0.250
HSV-1-pUL19	424	114.16045	6	3	X43511	14aa	1.000
HSV-2-pUS4	62	111.68901	8	3	X31351,X53390	14aa,14aaaA5	0.500
HSV-1-pUL19	147	110.48145	9	3	X40382,X40383	22aa	0.500
HSV-1-pUL36	1242	110.40667	6	2	X27243,X67035	14aa,22aa	2.000
NRTN	42	106.95035	7	3	X27177,X31910	14aa,22aa	2.000
JEV-E-BN19	258	105.87153	6	3	X13673,X13675,X40166,X80121	14aa,14aaG4S,22aa	0.000
HSV-1-pUL37	105	105.82125	5	3	X18137	14aa	2.000
TMEV-VP-DQ401688.1	21	105.63501	4	3	X35811	14aa	0.000
AAV1-VP1	593	105.10283	7	3	X10626,X10628,X48025,X48026	14aa,14aaaA5	0.000
HSV-1-pUL19	273	104.75374	6	3	X18041,X22412,X22413	14aa,22aa	1.000
PV1-VP1	62	103.94249	5	3	X32857,X32859,X85084	14aa,14aaG4S	0.000
HRP	257	103.75275	6	3	X38318,X86475	14aa,14aaG4S	0.250
HSV-2-pUL27	38	103.54099	5	3	X27064	14aa	0.500
RV-G-Mocala	380	103.33519	7	3	X15453,X49294	14aa,14aaaA5	0.250
HSV-1-pUS6	56	102.56628	6	3	X58760,X58761,X67836,X90050	14aa,14aaaA5,14aaG4S	1.750
HSV-2-pUS4	265	102.29006	5	3	X23598	14aa	0.250
PRV-Becker-gE	191	102.15014	5	3	X20559,X30664	14aa,22aa	0.500
HSV-2-pUL27	34	101.31330	4	3	X23604	14aa	0.000
VSV-Indiana-G	143	100.86707	6	3	X47359,X8158,X8159	14aa,14aaaA5	1.500
HSV-2-pUL19	762	100.79206	6	3	X25455	14aa	1.000
AAV1-VP1	594	100.59174	7	3	X10606,X10607,X1625,X2938	14aa,22aa	1.250
TBEV-E-4387-B7	351	99.58750	6	3	X15491,X44593	14aa,22aa	0.750
HSV-1-pUL19	417	99.20352	8	3	X1332,X1375,X32520,X32522	14aa,22aa	0.125
HRP	258	97.05560	6	3	X12450,X33533	14aa,22aa	1.000
HSV-1-pUL37	213	96.86221	5	3	X12029,X41962	14aa,22aa	0.500
HSV-1-pUL19	566	96.76591	6	3	X24018,X24021,X82731	14aa,14aaG4S	0.500
Tau	656	95.25608	6	3	X11612,X48295	14aa,14aaaA5	1.500
NT4	68	95.23381	4	3	X12623	14aa	0.500
HSV-1-pUL19	425	94.61652	7	3	X41345,X41347,X55989	14aa,14aaaA5	0.750



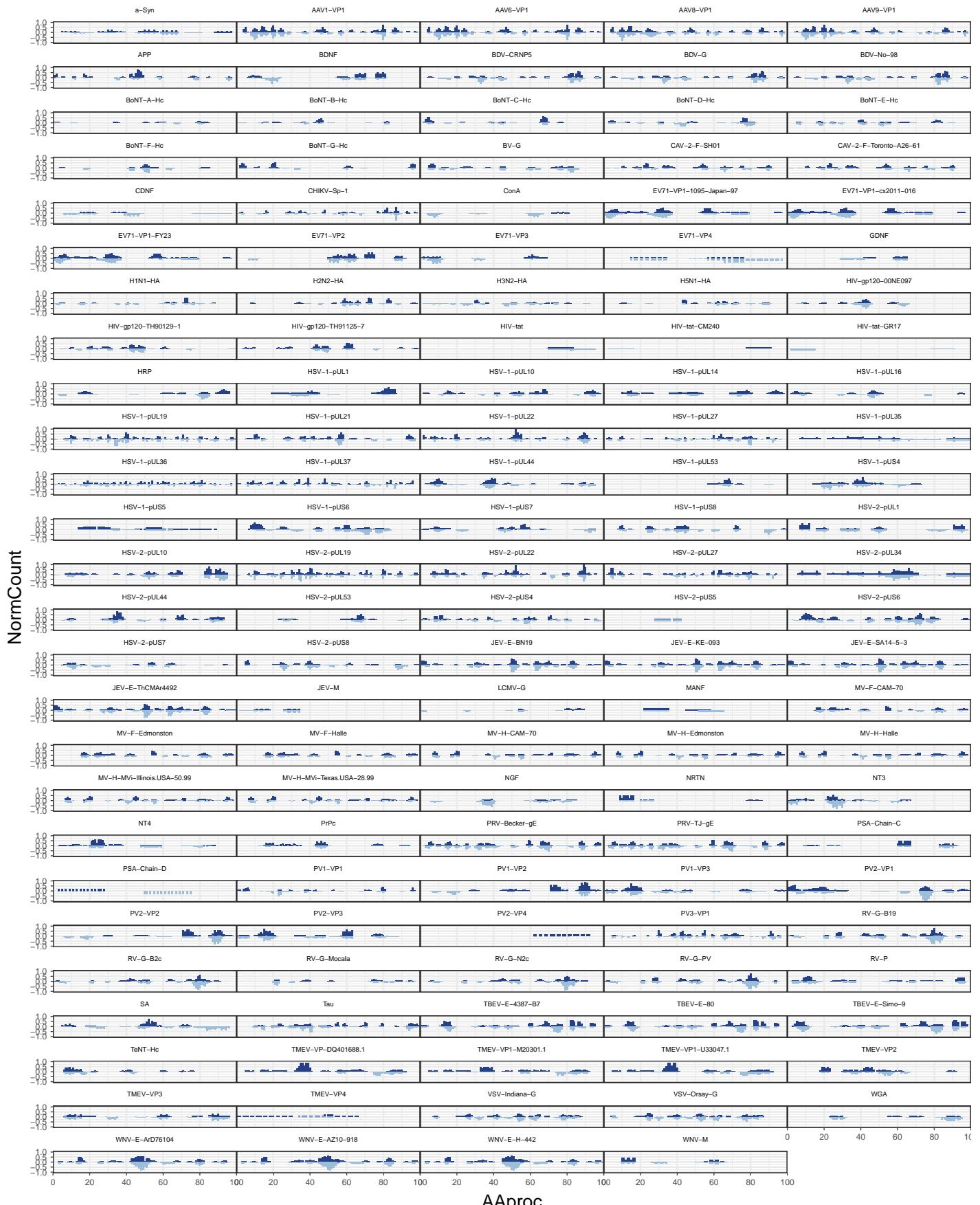
mRNA_30cpc_Th	AA	NormCount	BCcount	AnimalCount	LUTnrs	mainStruct	mismatches
AAV1-VP1	151	66.03702	3	2	X25958,X25959	14aa	1.50
HSV-1-pUL37	927	65.70792	2	2	X43814	14aa	0.50
HSV-1-pUL21	82	63.97800	3	3	X27483	14aa	0.75
HSV-1-pUL27	405	62.49015	2	3	X1574	14aa	0.00
HSV-1-pUS6	282	60.26591	3	3	X10394,X22271	14aa,22aa	0.50
EV71-VP3	23	49.25185	3	3	X47355,X8142	14aa,14aaaA5	0.75
CHIKV-Sp-1	1097	47.05060	2	3	X34522	14aa	0.50
HSV-1-pUL22	750	46.49370	3	3	X23667,X66790	14aa,22aa	1.75
HSV-1-pUL21	301	46.37350	1	3	X42967	14aa	1.50
HRP	250	46.00842	2	3	X63143	14aa	0.00
EV71-VP2	135	45.11215	1	3	X23269	14aa	0.00
TeNT-Hc	37	44.79829	1	3	X1792	14aa	4.50
BDV-CRNP5	419	44.56444	2	2	X40857,X87144	14aa,14aaaG4S	0.25
BDNF	158	42.16045	2	3	X84727	14aaaG4S	0.50
PV1-VP1	230	41.12631	2	3	X78705,X8350	14aa,14aaaG4S	0.75
HSV-1-pUS8	401	40.40016	1	3	X57800	14aaaA5	0.00
WNV-E-AZ10-918	237	39.04684	2	2	X10815	22aa	0.00
TMEV-VP2	144	37.92619	3	2	X39754	22aa	0.00
CHIKV-Sp-1	1088	37.09374	2	2	X44622,X56814	14aa,14aaaA5	0.00
HSV-2-pUL22	756	35.43371	1	2	X68061	14aa	0.00
JEV-E-BN19	261	35.05680	4	2	X13674,X18847,X18855	22aa	0.50
Tau	104	34.33951	2	2	X16497,X49559	14aa,14aaaA5	0.75
HSV-1-pUS6	267	33.75607	1	2	X12022	14aa	1.00
BV-G	180	33.54236	1	2	X1715	14aa	1.00
HSV-1-pUL19	679	33.46707	1	2	X13851	14aa	3.00
BoNT-E-Hc	200	33.44321	1	2	X32261	14aa	0.00
VSV-Indiana-G	215	33.27654	2	2	X36144	14aa	1.00
VSV-Indiana-G	400	33.23676	1	2	X10851	14aa	0.00
HSV-2-pUL10	422	33.23426	1	2	X21500	14aa	1.00
HSV-1-pUL36	1469	33.08482	1	2	X70758	14aa	1.00
HSV-1-pUL22	71	33.04517	1	2	X58146	14aaaA5	1.00
PV2-VP1	226	32.94059	1	2	X62464	14aa	2.00
AAV1-VP1	80	32.48528	3	3	X31578,X53462,X84751	14aa,14aaaA5,14aaaG4S	0.00
LCMV-G	275	32.47561	1	2	X74710	14aa	0.50
HSV-2-pUL22	302	32.38753	1	2	X31973	14aa	0.00
HSV-1-pUL27	723	32.22153	1	2	X17862	22aa	1.50



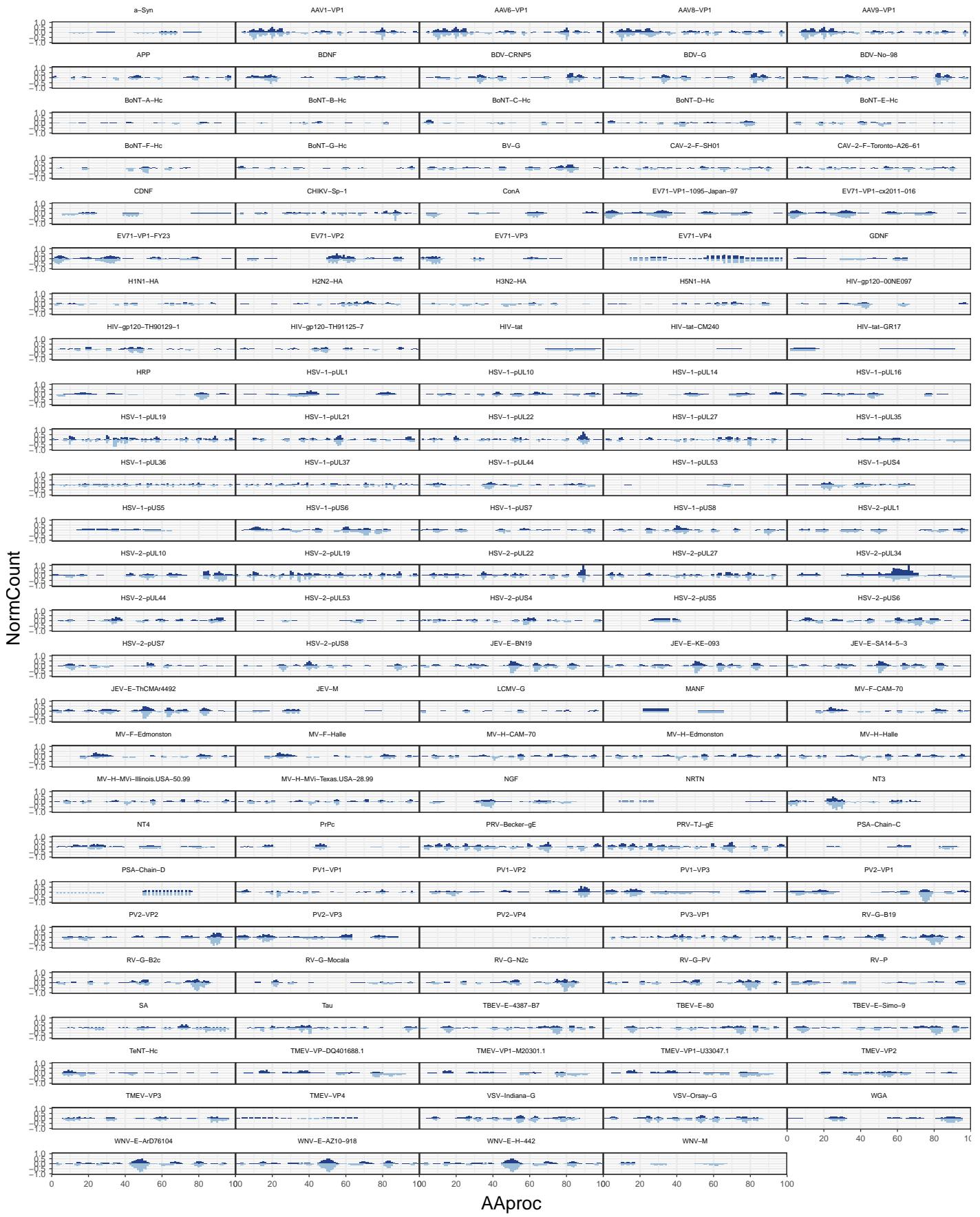
mRNA_30cpc_Ctx	AA	NormCount	BCcount	AnimalCount	LUTnrs	mainStruct	mismatches
HSV-1-pUL22	750	111.81378	3	3	X23667,X66790	14aa,22aa	1.75
BoNT-C-Hc	28	58.35693	1	3	X514	14aa	1.00
HSV-1-pUL27	635	57.86136	1	3	X54552	14aaaA5	2.00
PrPc	120	54.97898	1	3	X44210	14aa	1.50
PRV-Becker-gE	404	54.87989	1	3	X64633	14aa	3.00
HSV-2-pUL34	71	53.98515	1	3	X53736	14aaaA5	0.50
HSV-1-pUL19	789	51.86785	2	2	X24782	22aa	0.00
MV-F-CAM-70	134	47.93424	2	2	X57985,X89275	14aaaA5,14aaG4S	1.00
HSV-1-pUL19	426	44.81269	2	2	X18063,X28277	14aa,22aa	0.50
HSV-2-pUL10	395	42.65047	3	3	X35006,X54361,X85651	14aa,14aaaA5,14aaG4S	0.00
HSV-2-pUL34	74	41.24429	2	2	X47029,X6900	14aa,14aaaA5	0.25
HSV-1-pUL1	95	40.08594	1	2	X56002	14aaaA5	0.00
AAV1-VP1	151	39.57467	3	2	X25958,X25959	14aa	1.50
Tau	487	38.38665	3	2	X11521	14aa	0.00
PRV-Becker-gE	63	37.89279	1	2	X44147	22aa	0.00
AAV1-VP1	186	37.15829	1	2	X12643	14aa	0.00
HSV-1-pUL10	304	36.87248	1	2	X63331	14aa	0.00
HSV-1-pUL37	619	36.67536	1	2	X20597	14aa	0.00
HSV-2-pUL44	441	36.65082	1	2	X19247	22aa	0.00
HSV-2-pUS7	201	36.54304	1	2	X32412	14aa	0.00
HSV-2-pUS4	435	36.47590	1	2	X43412	14aa	0.00
HSV-1-pUL21	506	36.31600	1	2	X13099	14aa	0.00
HSV-1-pUL36	2535	36.23641	1	2	X33526	14aa	0.00
NT3	59	36.05396	1	2	X26899	14aa	1.50
HSV-1-pUL27	615	36.05311	1	2	X34790	14aaa	1.00
MANF	30	35.98276	1	2	X26788	14aa	0.00
HSV-1-pUL36	2608	35.84016	1	2	X23577	14aa	0.00
HSV-2-pUS6	318	35.71081	1	2	X23640	22aa	0.00
MV-H-CAM-70	444	35.37948	1	2	X18112	14aa	0.00
RV-G-B19	258	35.29599	1	2	X1925	22aa	0.50
PRV-Becker-gE	348	34.98269	1	2	X17093	14aa	0.00
AAV1-VP1	71	34.68745	1	2	X24085	14aa	0.00
BV-G	325	34.53934	1	2	X20610	14aa	0.00
TMEV-VP-DQ401688.1	44	34.34478	1	2	X59702	14aaaA5	0.50
HSV-1-pUL22	752	34.22889	1	2	X13577	14aa	1.00
Tau	272	34.09260	1	2	X43096	14aa	0.00
HSV-1-pUL27	92	34.08267	1	2	X63482	14aa	1.00

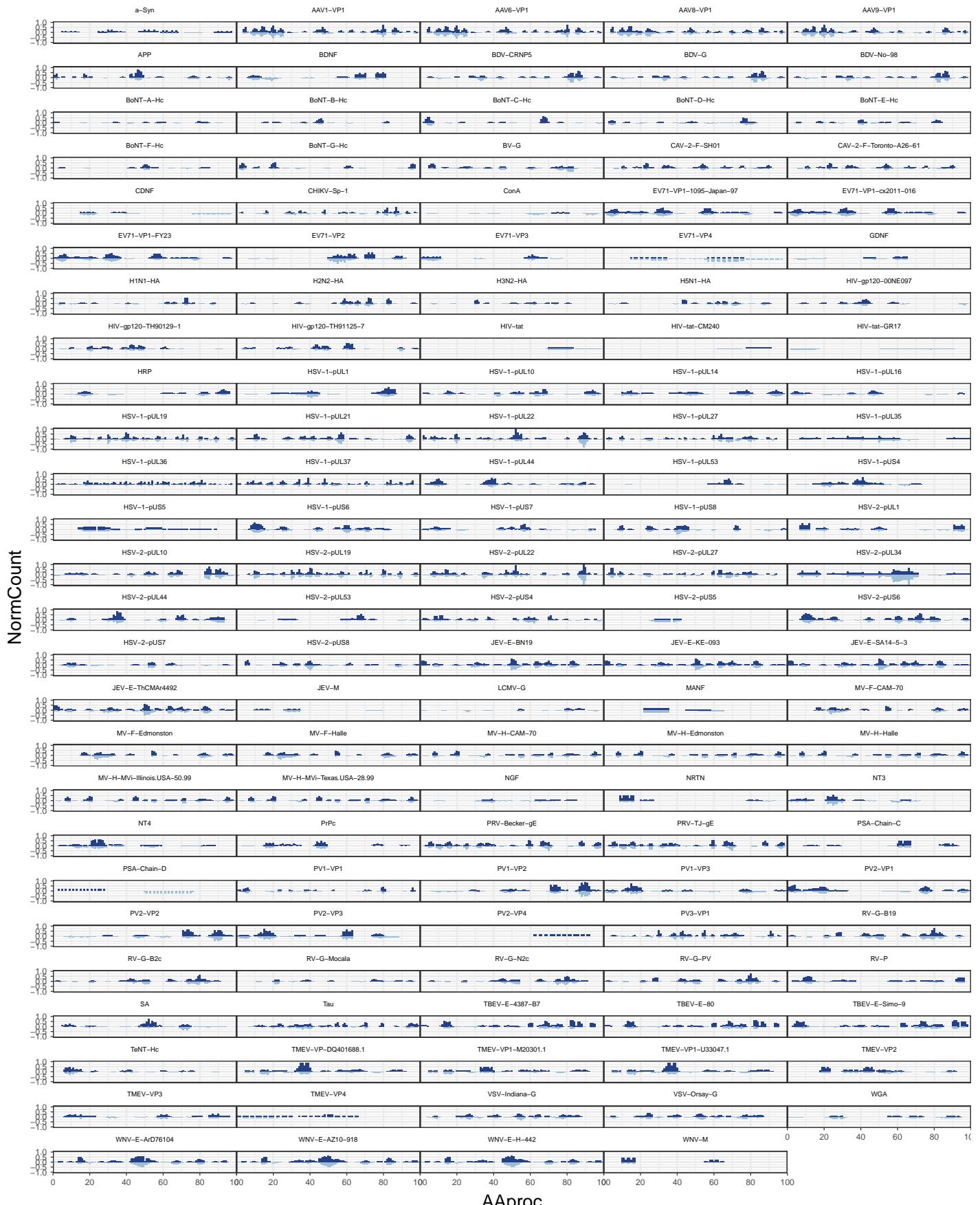


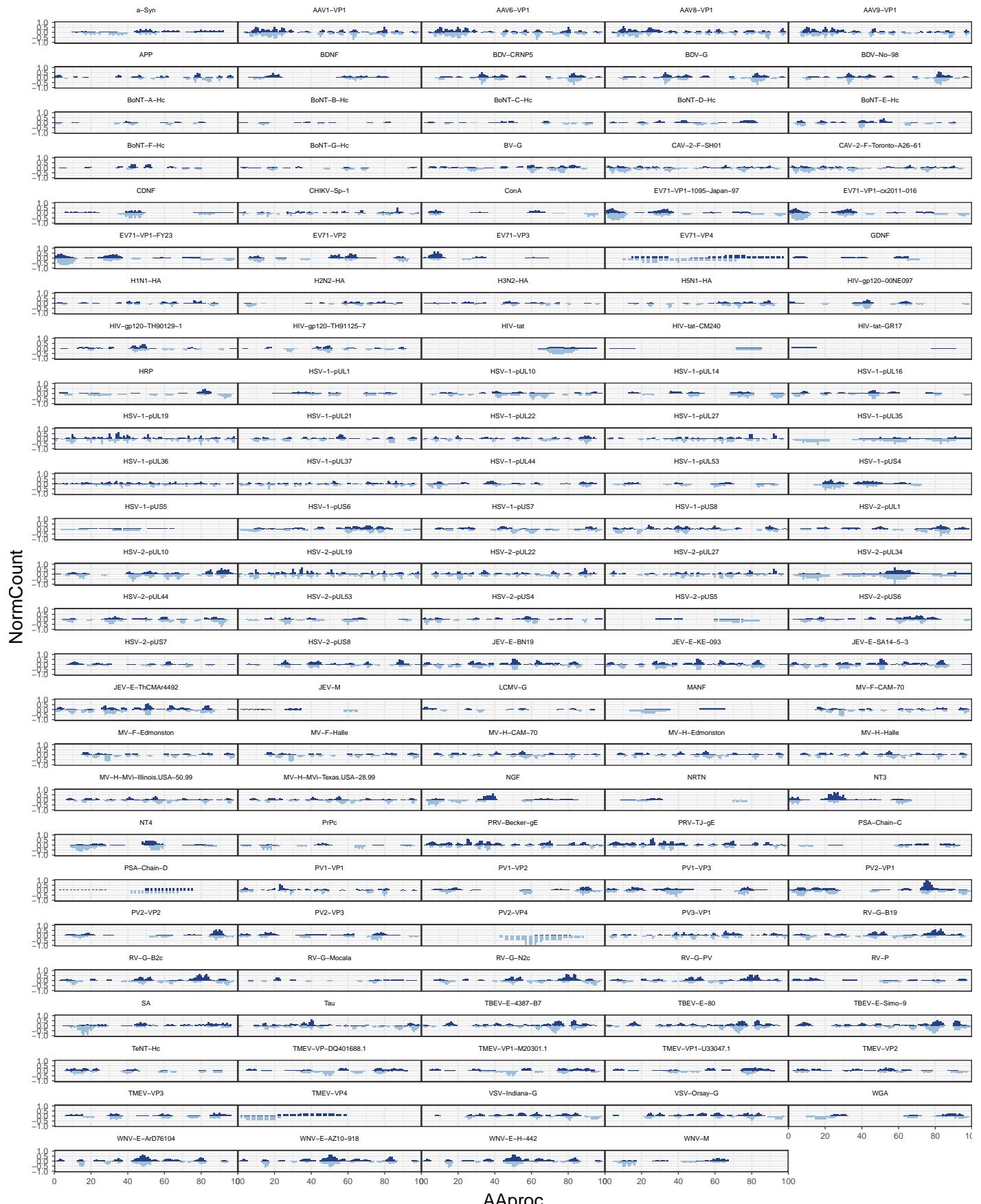
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HSV-1-pUL21	309	64.18405	3	2	X27207	14aa	2.25	
HSV-1-pUL22	443	57.29909	1	3	X74470	14aa	0.00	
HSV-2-pUS4	499	56.22323	1	3	X8569	14aa	0.00	
BoNT-G-Hc	17	53.81792	2	2	X27569	14aa	0.50	
HSV-1-pUS4	95	52.62511	1	3	X87983	14aaG4S	5.00	
TMEV-VP2	120	49.75552	1	3	X20177	14aa	0.50	
HSV-1-pUL22	750	48.42722	3	3	X23667,X66790	14aa,22aa	2.00	
HSV-1-pUS8	401	48.08337	1	3	X57800	14aaA5	0.00	
AAV1-VP1	594	45.93449	2	2	X10606	14aa	1.00	
PV1-VP1	774	43.90891	2	2	X9983	22aa	0.50	
HSV-1-pUL27	405	40.88741	2	3	X1574	14aa	0.00	
AAV1-VP1	39	39.92280	1	2	X20734	14aa	2.00	
TBEV-E-4387-B7	433	39.22345	1	2	X56718	14aaA5	0.50	
JEV-E-BN19	11	38.60826	1	2	X53668	14aaA5	2.50	
NRTN	23	38.16992	1	2	X82406	14aaG4S	1.00	
L	AAV1-VP1	151	36.77678	2	2	X25958,X25959	14aa	1.50
	HSV-2-pUL1	23	36.54254	1	2	X64384	14aa	0.00
	HSV-1-pUL36	2441	35.87740	2	2	X58700,X89990	14aaA5,14aaG4S	0.50
	MV-H-CAM-70	128	35.61187	1	2	X77470	14aaG4S	5.00
	HSV-2-pUL10	422	35.53899	1	2	X21500	14aa	1.00
HSV-2-pUS8	35	35.25262	1	2	X4154	14aa	1.00	
PSA-Chain-C	117	34.99879	1	2	X33863	14aa	1.00	
MV-H-MVi-Illinois.USA-50.99	281	34.99539	1	2	X77246	14aaG4S	1.50	
H5N1-HA	251	34.88563	1	2	X61053	14aaA5	0.00	
HSV-1-pUL22	167	33.85717	1	2	X60425	14aaA5	0.00	
H1N1-HA	413	33.55677	2	2	X75725,X92115	14aa,14aaG4S	0.50	
BoNT-G-Hc	89	33.40099	1	2	X54228	14aaA5	1.50	
HSV-1-pUL27	547	33.22259	1	2	X1992	14aa	1.50	
HSV-2-pUS4	62	33.03427	2	2	X31351	14aa	0.25	
CHIKV-Sp-1	438	32.98665	1	2	X20746	14aa	1.50	
PV2-VP3	146	32.98137	1	2	X41416	14aa	0.00	
HSV-2-pUL22	755	32.95825	1	2	X53822	14aaA5	1.00	
HSV-1-pUL37	285	32.86014	1	2	X35753	22aa	0.00	
HSV-1-pUL22	435	32.85213	2	1	X27548	22aa	0.50	
HSV-1-pUL36	2554	32.75360	1	2	X18139	14aa	0.50	



Library ■ mRNA_30cpc_SN ■ mRNA_30cpc_Th

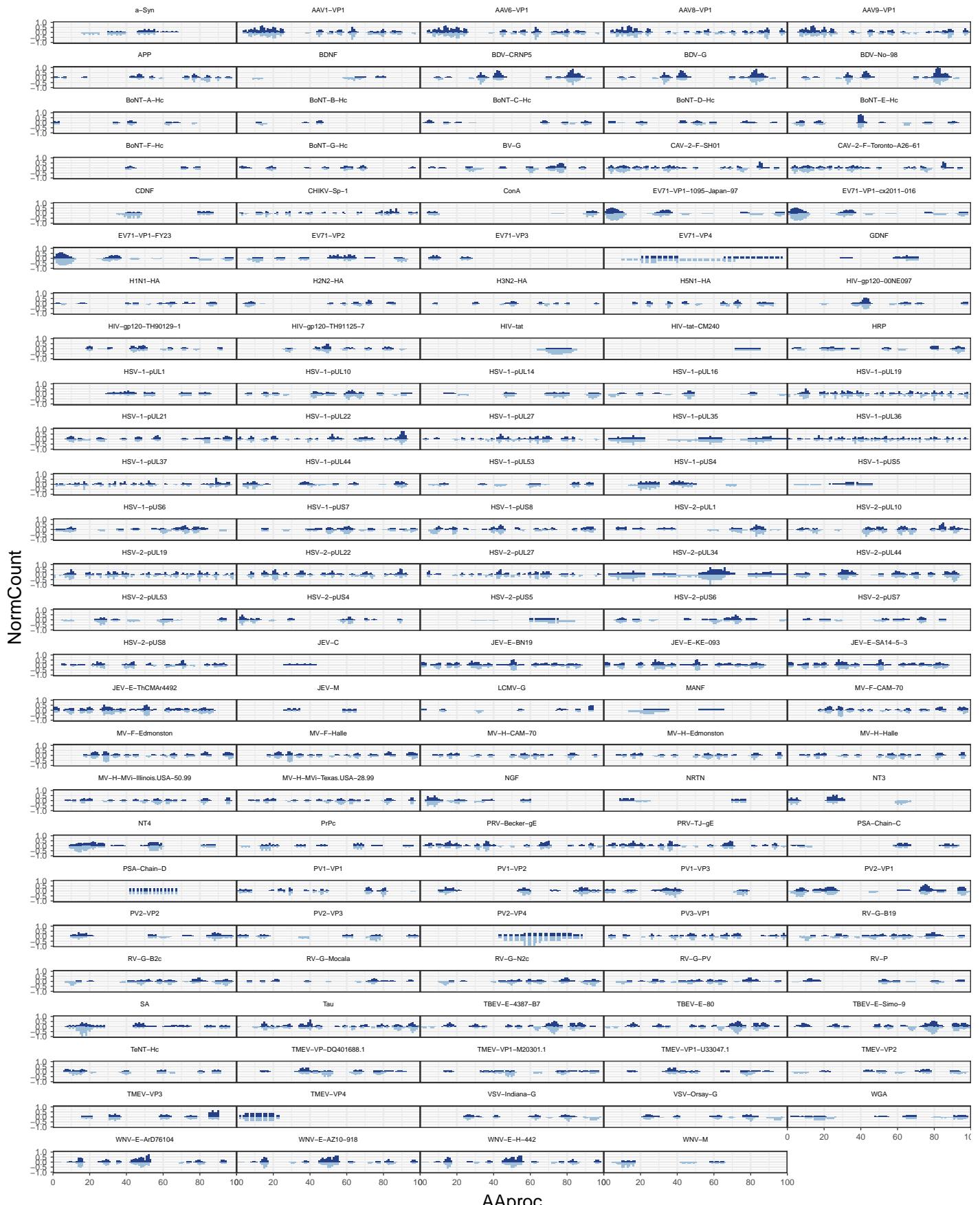






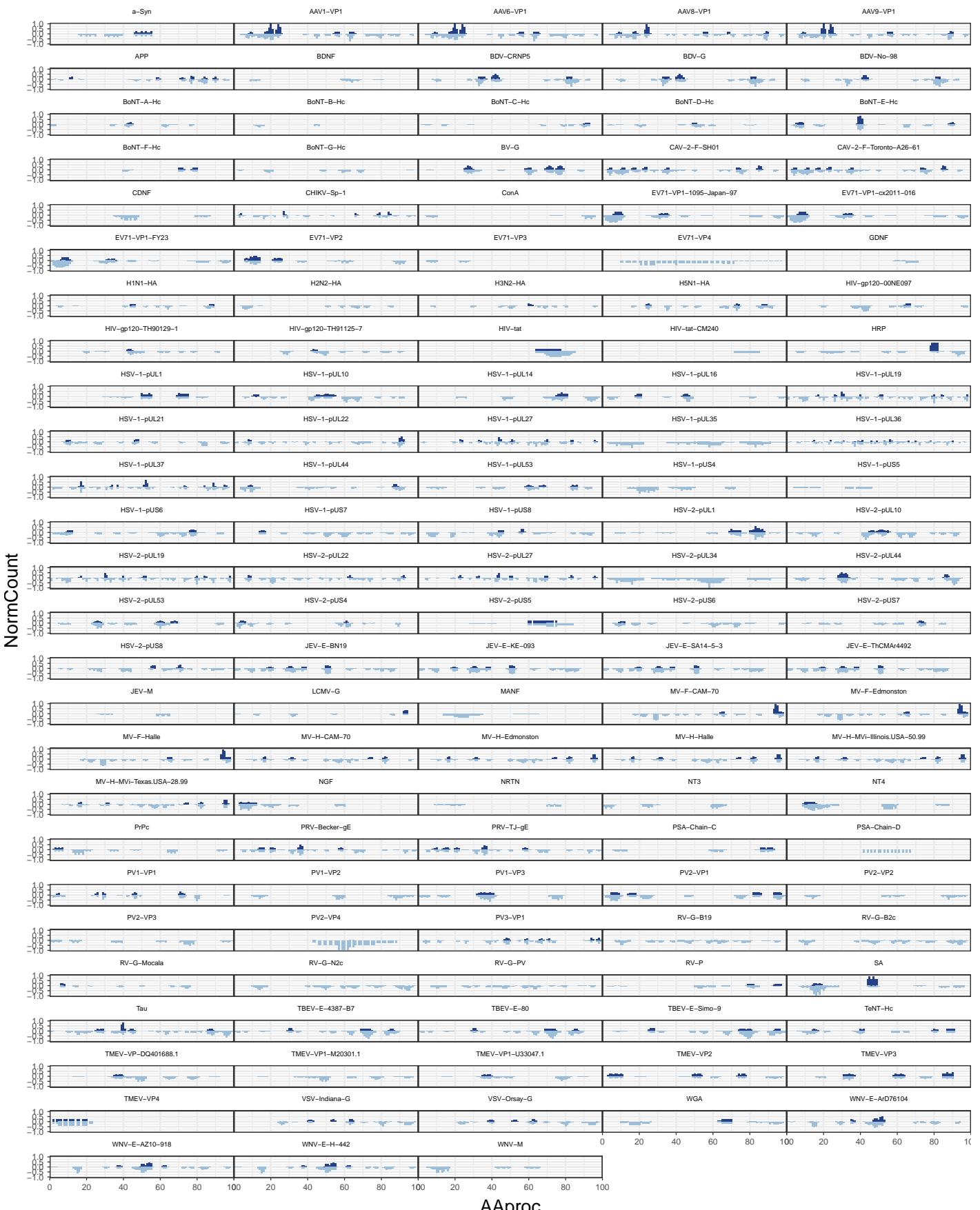
mRNA_3cpc_Trsp	AA	NormCount	BCcount	AnimalCount	LUTnrs	mainStruct	mismatches
HSV-1-pUL37	591	162.82357	1	7	X12949	22aa	0.000
HRP	250	142.63551	2	7	X63143	14aa	0.000
AAV1-VP1	151	127.15850	3	4	X25958,X25959	14aa	1.500
AAV1-VP1	181	103.63858	1	5	X62390	14aa	0.000
HSV-1-pUL27	405	93.91714	2	5	X1574	14aa	0.000
Tau	275	90.50399	2	3	X74747	14aa	0.000
BoNT-E-Hc	191	76.23391	1	7	X38325	14aa	0.500
HSV-1-pUL22	763	67.38258	1	6	X19117	14aa	0.000
HSV-1-pUL37	927	65.70792	2	2	X43814	14aa	0.500
JEV-E-BN19	192	64.57024	1	3	X39227	14aa	0.000
HSV-1-pUL21	82	63.97800	3	3	X27483	14aa	0.750
MV-F-CAM-70	524	61.66853	1	3	X16843	14aa	1.000
HSV-1-pUS6	282	60.26591	3	3	X10394,X22271	14aa,22aa	0.500
PV1-VP1	230	57.33912	3	4	X42697,X78705,X8350	14aa,14aaG4S	1.000
CHIKV-Sp-1	1058	52.50109	1	5	X59889	14aaaA5	0.000
VSV-Indiana-G	355	51.26419	2	4	X27778	14aa	0.500
VSV-Indiana-G	215	49.91581	2	3	X36144	14aa	0.000
BoNT-E-Hc	245	49.68832	3	2	X47834,X79124	14aaaA5,14aaG4S	0.125
PV2-VP1	23	49.42497	2	5	X2154,X77095	14aa,14aaG4S	2.500
EV71-VP3	23	49.25185	3	3	X47355,X8142	14aa,14aaaA5	0.750
TMEV-VP3	205	49.06352	1	5	X70871	14aa	0.000
HSV-2-pUL19	474	48.50484	1	3	X17497	22aa	0.000
AAV1-VP1	105	47.98157	3	4	X1081,X43336	14aa,22aa	1.625
CHIKV-Sp-1	1097	47.05060	2	3	X34522	14aa	0.500
BoNT-C-Hc	200	47.01354	3	3	X15439	14aa	1.500
HSV-1-pUL19	426	46.78716	2	4	X18063	14aa	0.000
HSV-1-pUL22	750	46.49370	3	3	X23667,X66790	14aa,22aa	1.750
HSV-1-pUL21	301	46.37350	1	3	X42967	14aa	1.500
HSV-1-pUL10	252	45.86228	1	3	X43912	22aa	1.000
NT3	59	45.63683	2	3	X26899	14aa	1.500
JEV-E-BN19	257	45.11847	2	4	X18848,X50146	14aa,14aaaA5	0.500
EV71-VP2	135	45.11215	1	3	X23269	14aa	0.000
HSV-1-pUL19	476	44.90050	2	3	X58843,X68179	14aa,14aaaA5	1.500
TeNT-Hc	37	44.79829	1	3	X1792	14aa	4.500
BDV-CRNP5	419	44.56444	2	2	X40857,X87144	14aa,14aaG4S	0.250
HSV-1-pUS6	308	44.19308	2	3	X12954	14aa	3.000

mRNA_3cpc_Str	AA	NormCount	BCcount	AnimalCount	LUTnrs	mainStruct	mismatches
BV-G	309	139.65256	3	4	X25013	14aa	0.50
PV1-VP1	699	120.58105	3	4	X1614,X27075	14aa,22aa	0.50
BDV-CRNP5	416	88.93638	3	4	X46864,X53375	14aaaA5	2.25
BV-G	305	85.21082	3	3	X27393,X83630	14aa,14aaG4S	1.50
CAV-2-F-SH01	129	83.44190	2	4	X38436	14aa	0.00
AAV1-VP1	151	77.00653	3	3	X25958,X25959	14aa	1.50
H3N2-HA	374	76.56948	2	4	X71740	14aa	1.00
HSV-1-pUL37	386	76.13766	2	4	X32561	14aa	0.00
CAV-2-F-SH01	108	75.92966	2	4	X14027	14aa	0.00
AAV8-VP1	522	74.19642	2	3	X62811	14aa	1.00
Tau	282	72.30347	2	4	X7067	14aa	0.00
HSV-2-pUL1	192	70.33221	1	4	X40601	14aa	0.00
EV71-VP1-1095-Japan-97	27	68.67389	1	4	X28941	14aa	1.00
JEV-E-BN19	257	67.91686	1	4	X18848	14aa	1.00
HSV-2-pUL53	90	67.19349	2	4	X42274,X71435	14aa,22aa	0.50
HSV-1-pUL44	450	66.33952	1	4	X26530	14aa	0.00
HSV-1-pUL37	1077	66.30815	1	4	X20913	14aa	0.50
TMEV-VP3	205	66.09735	1	4	X70871	14aa	0.00
PRV-Becker-gE	89	65.88816	2	4	X23396,X26959	14aa,22aa	1.00
HSV-1-pUL36	2461	65.70944	1	4	X67903	14aa	1.50
BoNT-E-Hc	191	65.22647	1	4	X38325	14aa	0.50
HSV-1-pUL36	1293	64.54854	1	4	X62972	14aa	0.00
TBEV-E-4387-B7	175	63.65419	1	4	X10790	14aa	0.00
VSV-Indiana-G	329	63.29449	2	2	X41530	14aa	0.50
TeNT-Hc	72	63.16418	1	4	X1940	14aa	2.00
Tau	472	62.92863	1	4	X7612	14aa	0.00
HSV-2-pUS4	23	62.76676	2	3	X63200	14aa	0.00
CAV-2-F-SH01	97	62.54292	1	4	X18898	14aa	0.00
HSV-1-pUL36	1700	62.48291	1	4	X22543	14aa	0.00
TMEV-VP3	143	62.47439	2	3	X4005	14aa	0.00
HSV-1-pUL22	75	62.36100	1	4	X22100	14aa	0.00
HSV-1-pUS6	308	61.98131	1	4	X12954	14aa	3.00
HSV-1-pUL36	1699	61.27924	1	4	X17539	14aa	2.50
EV71-VP4	22	61.21242	1	4	X5520	14aa	0.00



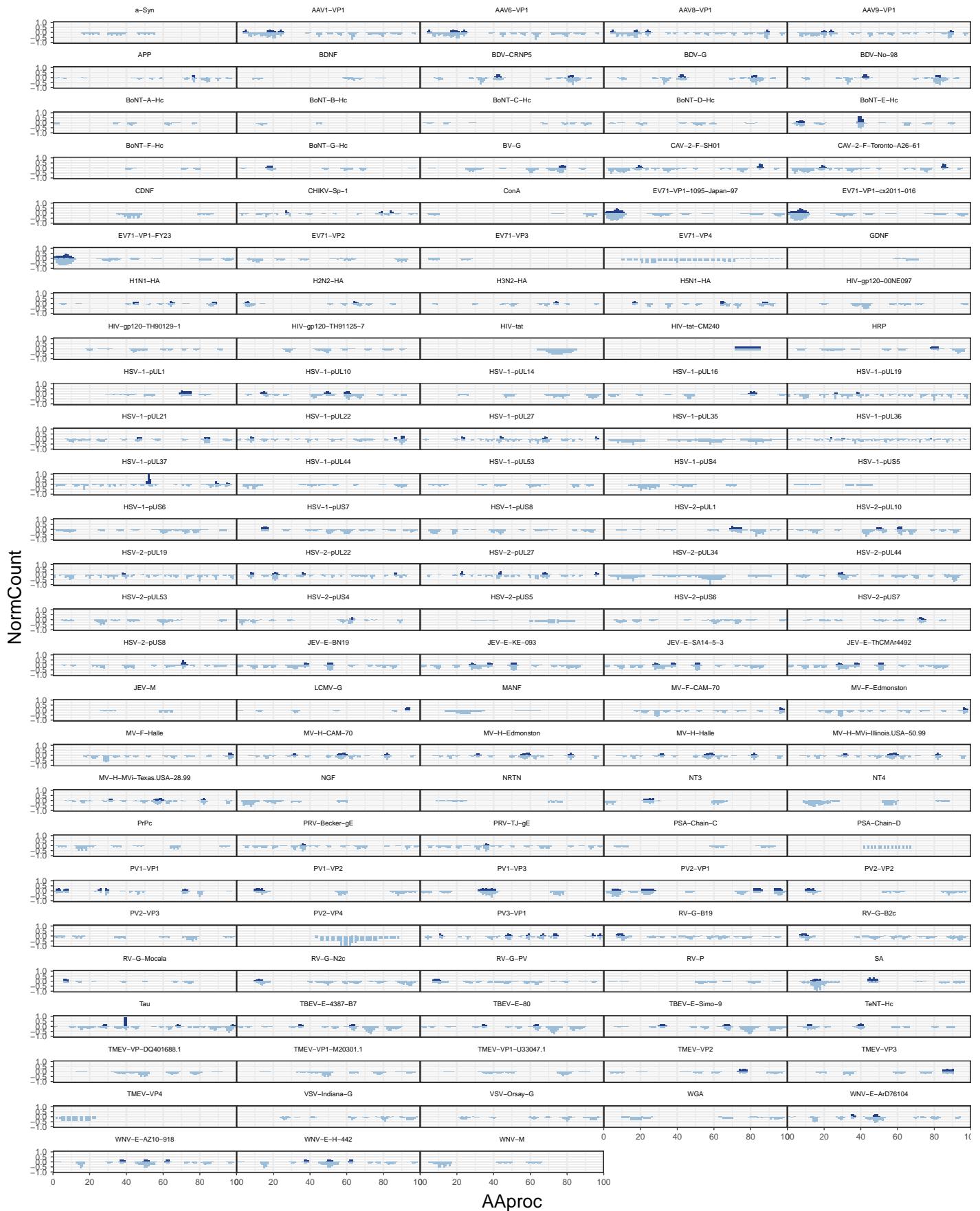
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mRNA_3cpc_Th	AA	NormCount	BCcount	AnimalCount	LUTnrs	mainStruct	mismatches
HSV-1-pUL22	763	85.26710	1	4	X19117	14aa	0.00
BoNT-E-Hc	191	83.55724	1	4	X38325	14aa	0.50
HSV-1-pUL36	777	82.81740	1	4	X38951	14aa	0.50
CHIKV-Sp-1	1058	81.64479	1	4	X59889	14aaaA5	0.00
BDV-CRNP5	217	80.83893	1	4	X75606	14aa	0.00
TMEV-VP3	205	78.18835	1	4	X70871	14aa	0.00
CAV-2-F-SH01	466	63.16394	1	3	X9572	14aa	4.50
HSV-1-pUL27	405	60.00872	2	2	X1574	14aa	0.00
HRP	250	59.01391	2	4	X63143	14aa	0.00
BV-G	309	54.52311	3	4	X25013	14aa	0.50
HSV-1-pUL37	591	54.09926	1	4	X12949	22aa	0.00
AAV1-VP1	181	49.82692	1	4	X62390	14aa	0.00
AAV1-VP1	151	46.55637	3	3	X25958,X25959	14aa	1.50
BDV-CRNP5	416	45.52770	3	4	X46864,X53375	14aaaA5	2.25
HSV-1-pUL37	386	40.54819	2	4	X32561	14aa	0.00
Tau	275	37.75299	1	3	X74747	14aa	0.00
MV-F-CAM-70	524	36.77011	1	3	X16843	14aa	1.00
BV-G	305	35.92920	3	3	X27393,X83630	14aa,14aaG4S	1.50
HSV-1-pUL37	1077	32.80969	1	4	X20913	14aa	0.50
PV1-VP1	699	32.34544	2	3	X1614,X27075	14aa,22aa	0.50
CAV-2-F-SH01	129	32.17717	2	4	X38436	14aa	0.00
PRV-Becker-gE	89	30.82604	2	4	X23396,X26959	14aa,22aa	1.00
HSV-1-pUL22	75	30.47962	1	4	X22100	14aa	0.00
HSV-1-pUL36	2461	30.10914	1	4	X67903	14aa	1.50
HSV-2-pUL1	192	30.10914	1	4	X40601	14aa	0.00
HSV-1-pUL16	305	29.06326	2	3	X75948	14aa	0.00
Tau	282	28.33067	2	3	X7067	14aa	0.00
HSV-1-pUS6	308	27.78491	2	3	X12954	14aa	3.00
HIV-gp120-TH91125-7	378	27.49137	1	4	X3856	22aa	1.00
EV71-VP1-1095-Japan-97	27	27.18210	1	4	X28941	14aa	1.00
EV71-VP4	22	27.18210	1	4	X572	14aa	0.00
HSV-1-pUL36	1700	26.85530	1	4	X22543	14aa	0.00
RV-G-Mocala	380	26.50889	1	4	X15453	14aa	0.00
HCoV-HA	254	25.54364	2	4	X71742	14aa	1.00

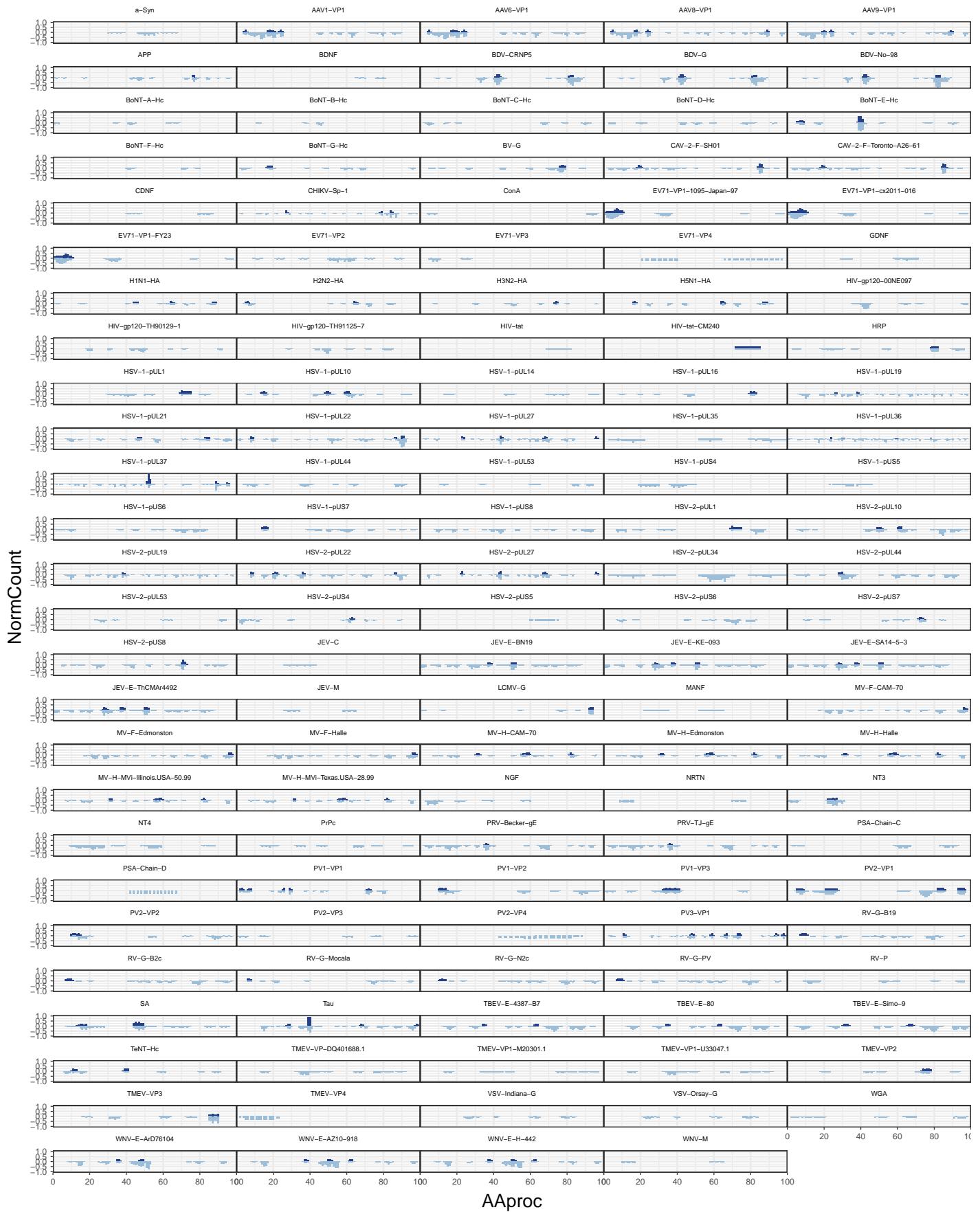


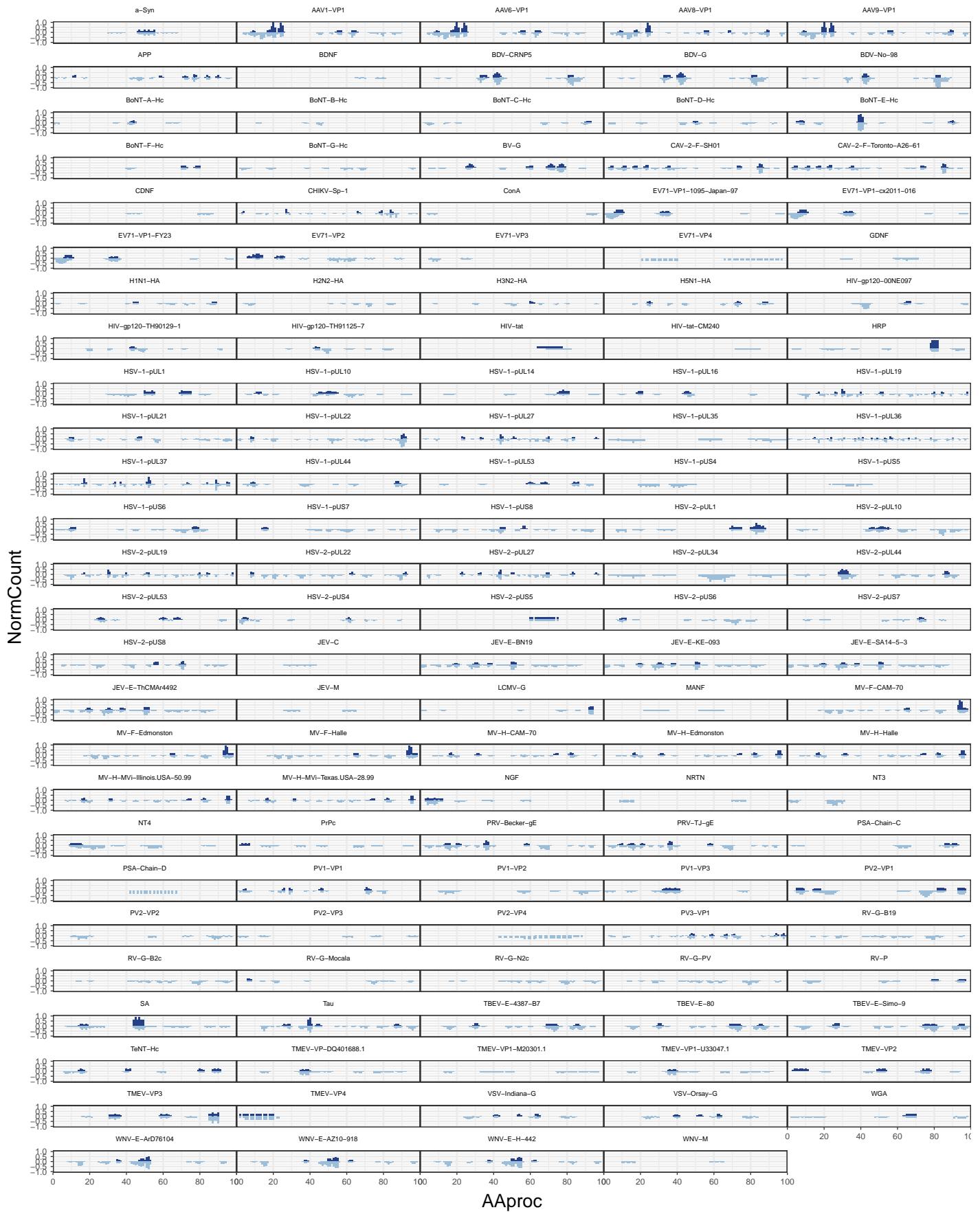
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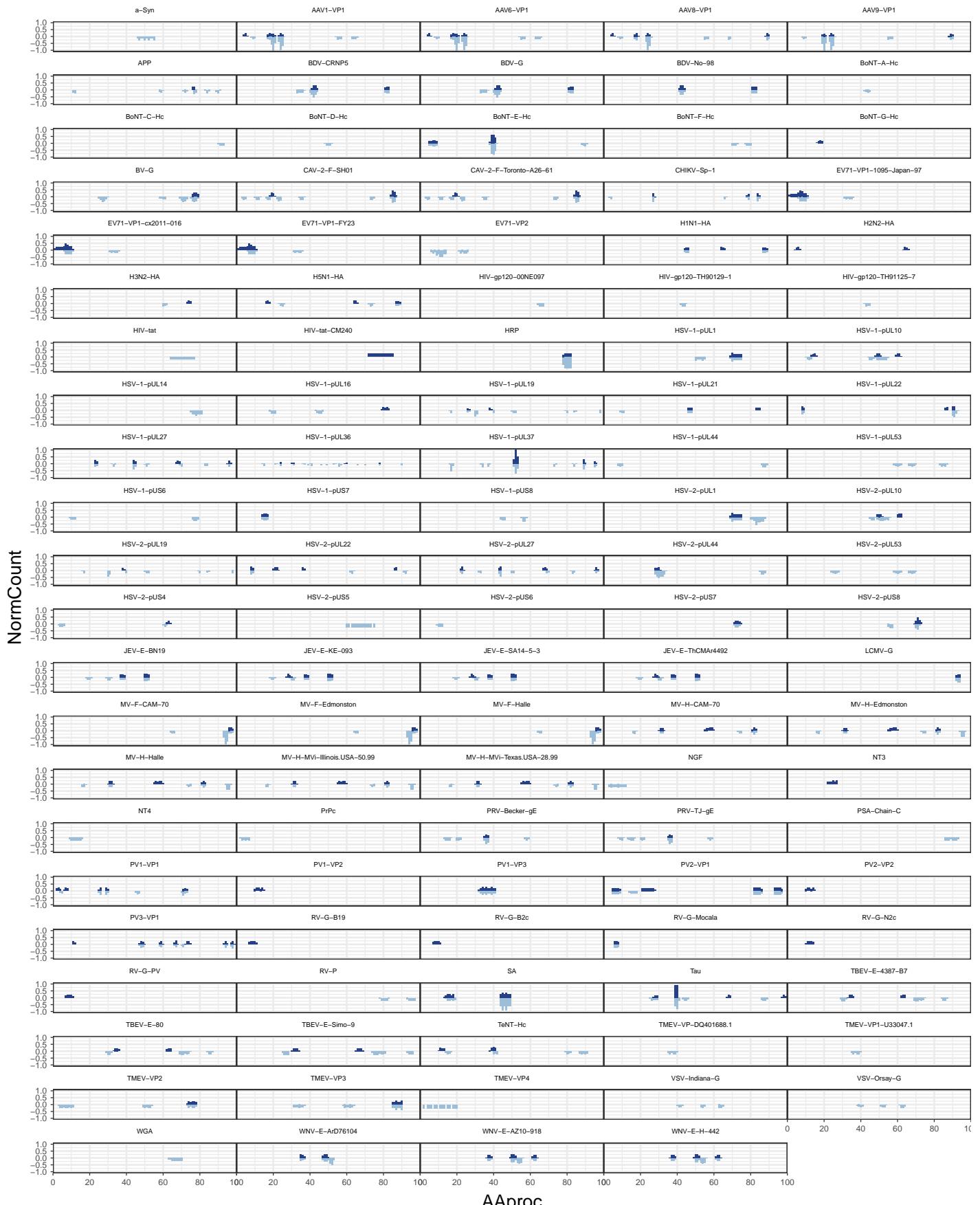
mRNA_3cpc_Ctx	AA	NormCount	BCcount	AnimalCount	LUTnrs	mainStruct	mismatches
HSV-1-pUL37	591	45.429529	1	3	X12949	22aa	0.00
AAV1-VP1	181	41.454366	1	2	X62390	14aa	0.00
HRP	250	40.285720	1	2	X63143	14aa	0.00
HSV-1-pUL22	763	21.086275	1	2	X19117	14aa	0.00
MV-F-CAM-70	524	20.555697	1	1	X16843	14aa	1.00
AAV1-VP1	151	20.069310	1	1	X25958	14aa	3.00
CHIKV-Sp-1	1058	19.606058	1	2	X59889	14aaaA5	0.00
SA	119	18.404702	1	1	X45740	14aaaA5	0.00
CAV-2-F-SH01	466	18.282011	1	2	X9572	14aa	4.50
BDV-CRNP5	217	16.625833	1	2	X75606	14aa	0.00
BoNT-E-Hc	191	15.903284	1	2	X38325	14aa	0.50
MV-H-Edmonston	593	15.781416	2	2	X42886,X56376	14aa,14aaaA5	0.75
HSV-1-pUL37	1077	14.739181	1	2	X20913	14aa	0.50
CHIKV-Sp-1	989	14.297303	1	2	X75537	14aa	0.00
Tau	275	14.198320	1	1	X74747	14aa	0.00
EV71-VP1-1095-Japan-97	27	14.048089	1	2	X28941	14aa	1.00
JEV-E-BN19	257	14.048089	1	2	X18848	14aa	1.00
HSV-1-pUL14	173	13.473998	1	2	X51822	14aaaA5	1.00
HSV-1-pUL44	450	13.473998	1	2	X26530	14aa	0.00
CAV-2-F-SH01	129	13.137528	1	2	X38436	14aa	0.00
TMEV-VP3	205	13.137528	1	2	X70871	14aa	0.00
TBEV-E-4387-B7	154	12.756576	2	2	X8898	14aa	0.00
HSV-1-pUL22	75	12.756576	1	2	X22100	14aa	0.00
HSV-1-pUL36	2461	12.756576	1	2	X67903	14aa	1.50
HSV-1-pUL37	386	12.756576	1	2	X32561	14aa	0.00
APP	600	12.756576	1	2	X29756	14aa	0.50
AAV8-VP1	663	12.317567	1	2	X67282	14aa	0.00
HSV-2-pUL44	143	12.317567	1	2	X43146	14aa	2.00
HSV-1-pUL37	201	11.799564	1	2	X11069	14aa	0.00
HSV-1-pUS6	308	11.799564	1	2	X12954	14aa	3.00
BoNT-E-Hc	189	11.799564	1	2	X9739	14aa	1.00
RV-G-Mocala	38	11.799564	1	2	X55263	14aaaA5	0.00
TBEV-E-4387-B7	351	11.799564	1	2	X44593	14aa	0.00

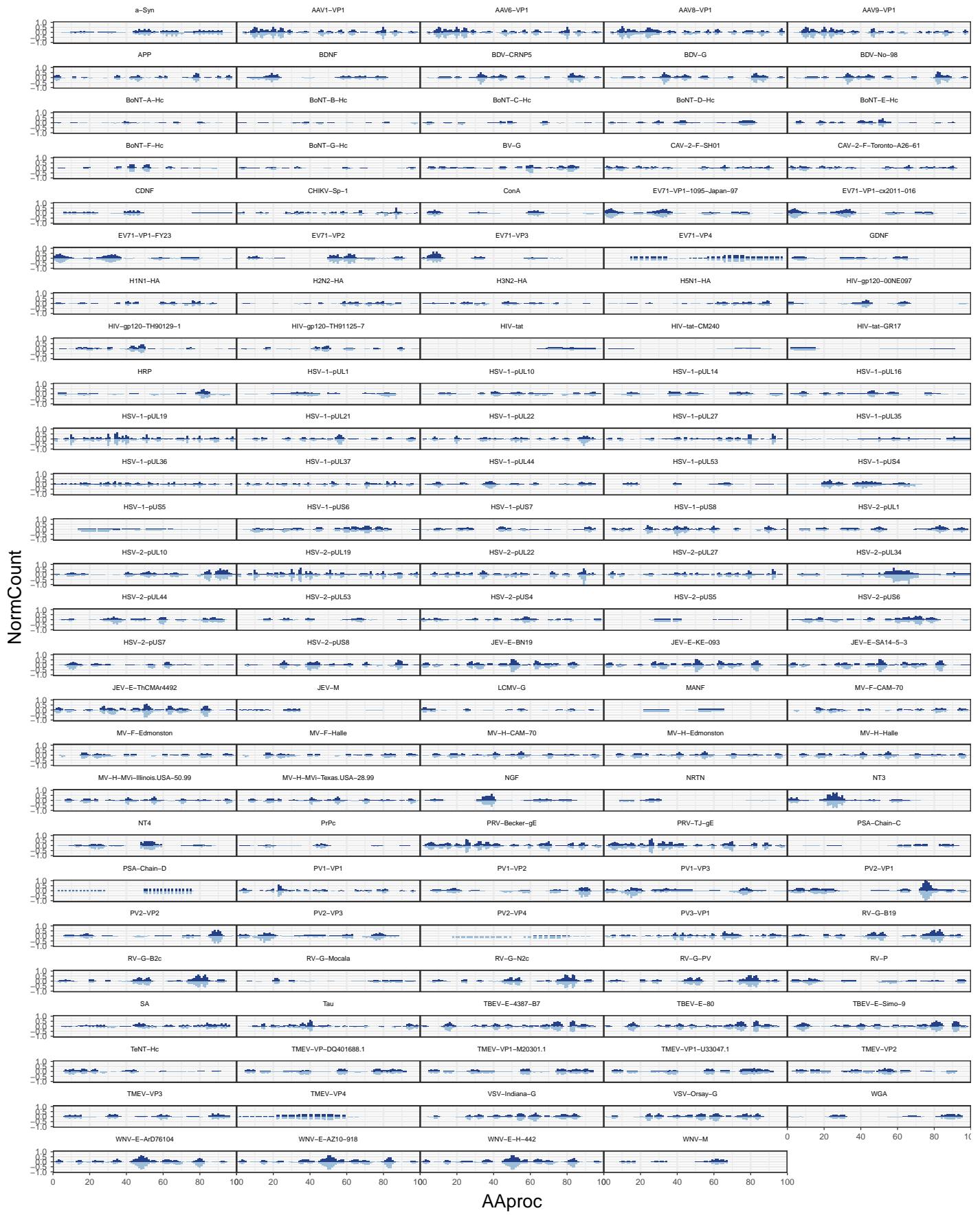


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HSV-1-pUL37	591	46.510574	1	2	X12949	22aa	0.0
Tau	275	22.621791	1	1	X74747	14aa	0.0
BoNT-E-Hc	191	17.487146	1	2	X38325	14aa	0.5
BV-G	309	14.070078	2	1	X25013	14aa	0.5
CAV-2-F-SH01	108	13.108011	2	1	X14027	14aa	0.0
CAV-2-F-SH01	466	9.504032	1	1	X9572	14aa	4.5
BDV-CRNP5	217	8.542444	1	1	X75606	14aa	0.0
HSV-1-pUL22	763	8.468647	1	1	X19117	14aa	0.0
SA	119	8.308661	1	1	X45740	14aaaA5	0.0
HSV-1-pUL36	777	8.029528	1	1	X38951	14aa	0.5
HSV-1-pUL37	1007	7.808056	1	1	X62663	14aa	1.5
CHIKV-Sp-1	1058	7.546308	1	1	X59889	14aaaA5	0.0
HSV-1-pUL27	405	7.395162	1	1	X1574	14aa	0.0
HSV-1-pUL27	216	7.226308	1	1	X10448	14aa	0.0
HSV-1-pUL22	75	6.554005	1	1	X22100	14aa	0.0
JEV-E-BN19	257	6.554005	1	1	X18848	14aa	1.0
PV3-VP1	592	6.554005	1	1	X8366	14aa	0.5
EV71-VP1-1095-Japan-97	27	6.235911	1	1	X28941	14aa	1.0
TeNT-Hc	183	6.235911	1	1	X35108	14aa	1.5
AAV1-VP1	135	5.827240	1	1	X24680	14aa	0.5
AAV1-VP1	181	5.827240	1	1	X62390	14aa	0.0
HSV-1-pUL1	163	5.827240	1	1	X25027	14aa	0.5
HSV-1-pUL10	288	5.827240	1	1	X67991	14aa	0.0
HSV-1-pUL19	534	5.827240	1	1	X7350	14aa	0.5
HSV-1-pUS7	62	5.827240	1	1	X57702	14aaaA5	8.5
HSV-2-pUS8	388	5.827240	1	1	X68297	14aa	0.0
HRP	250	5.827240	1	1	X63143	14aa	0.0
HIV-tat-CM240	80	5.827240	1	1	X51108	14aaaA5	1.5
JEV-E-BN19	192	5.827240	1	1	X39227	14aa	0.0
LCMV-G	467	5.827240	1	1	X6882	14aa	4.0

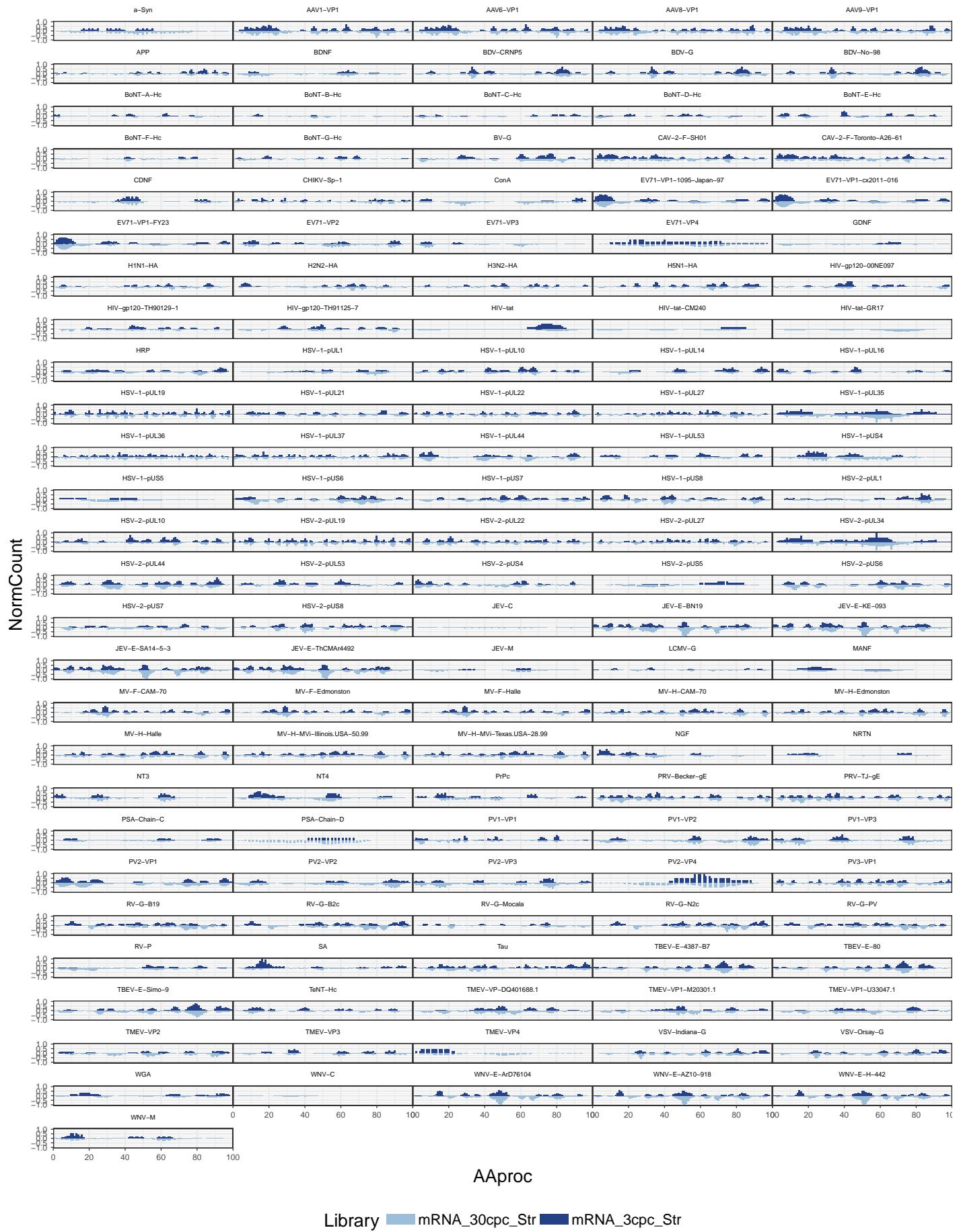


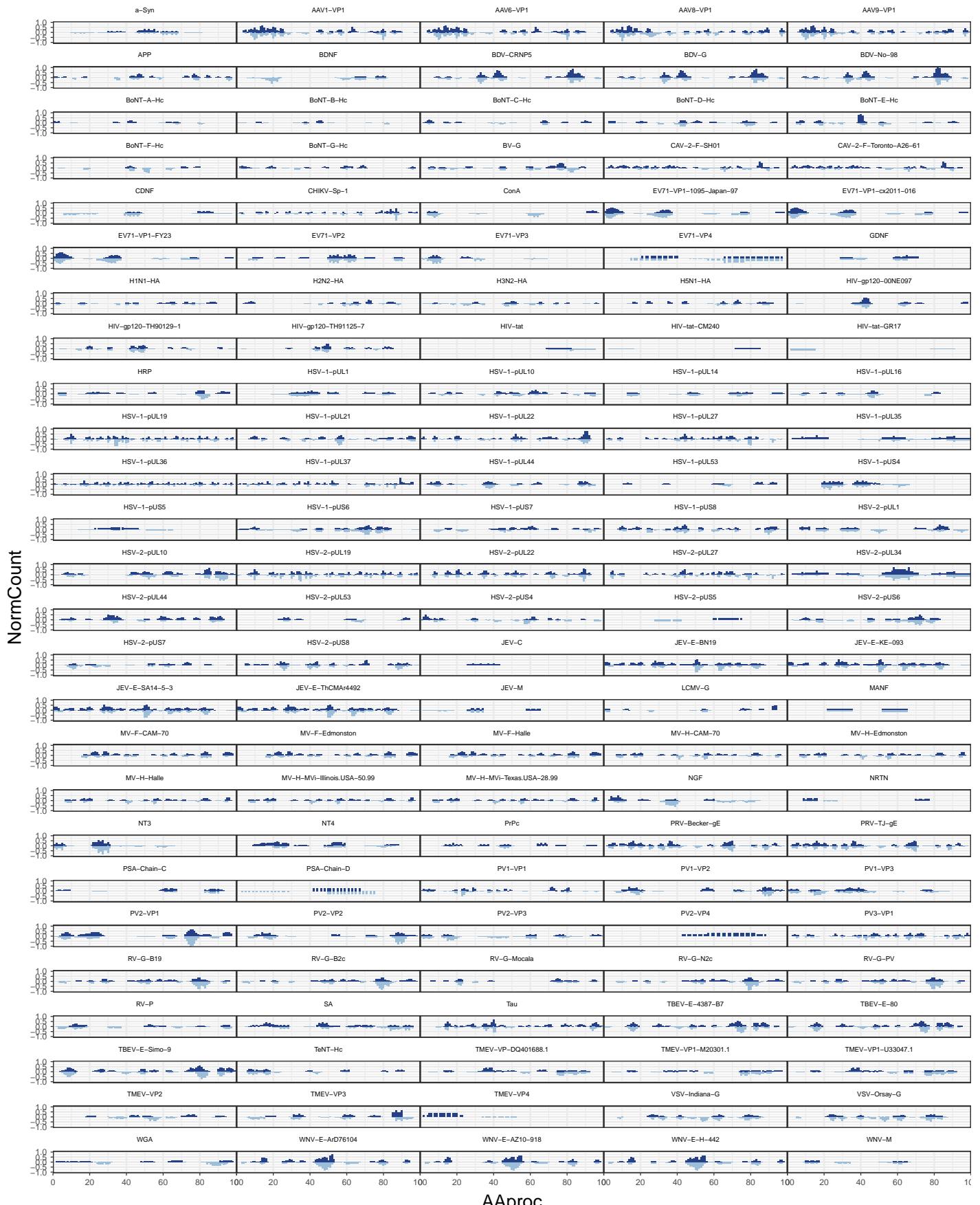


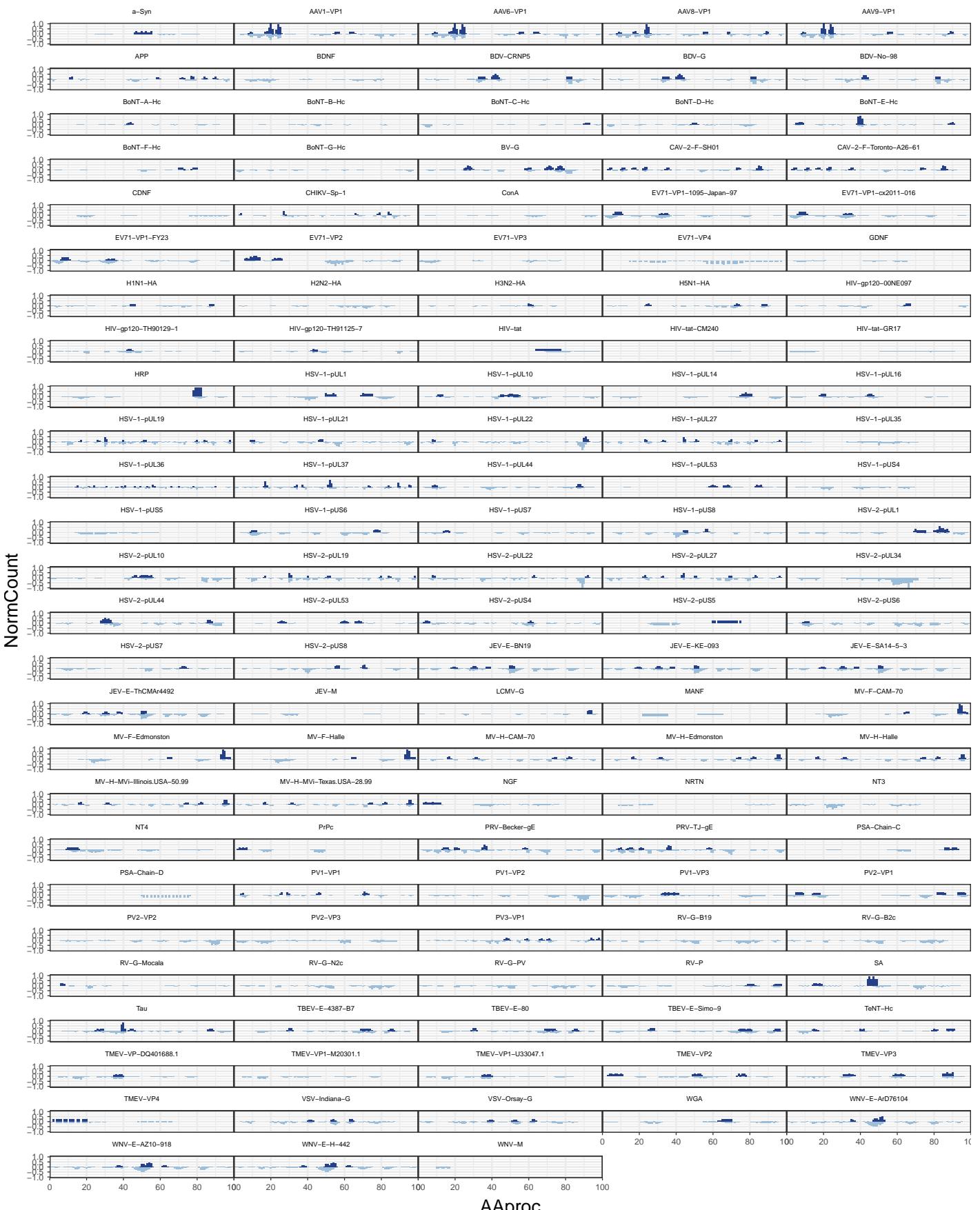


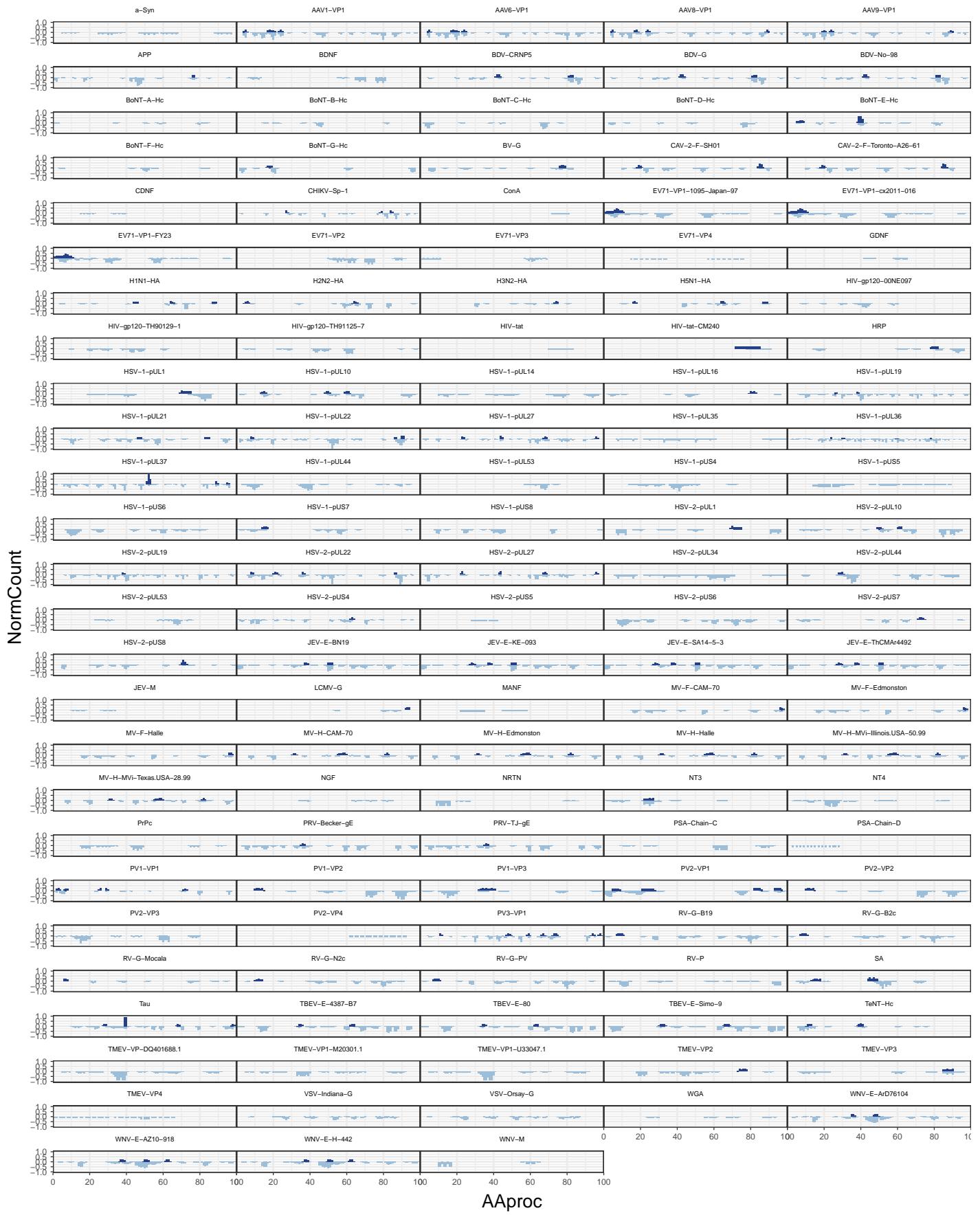


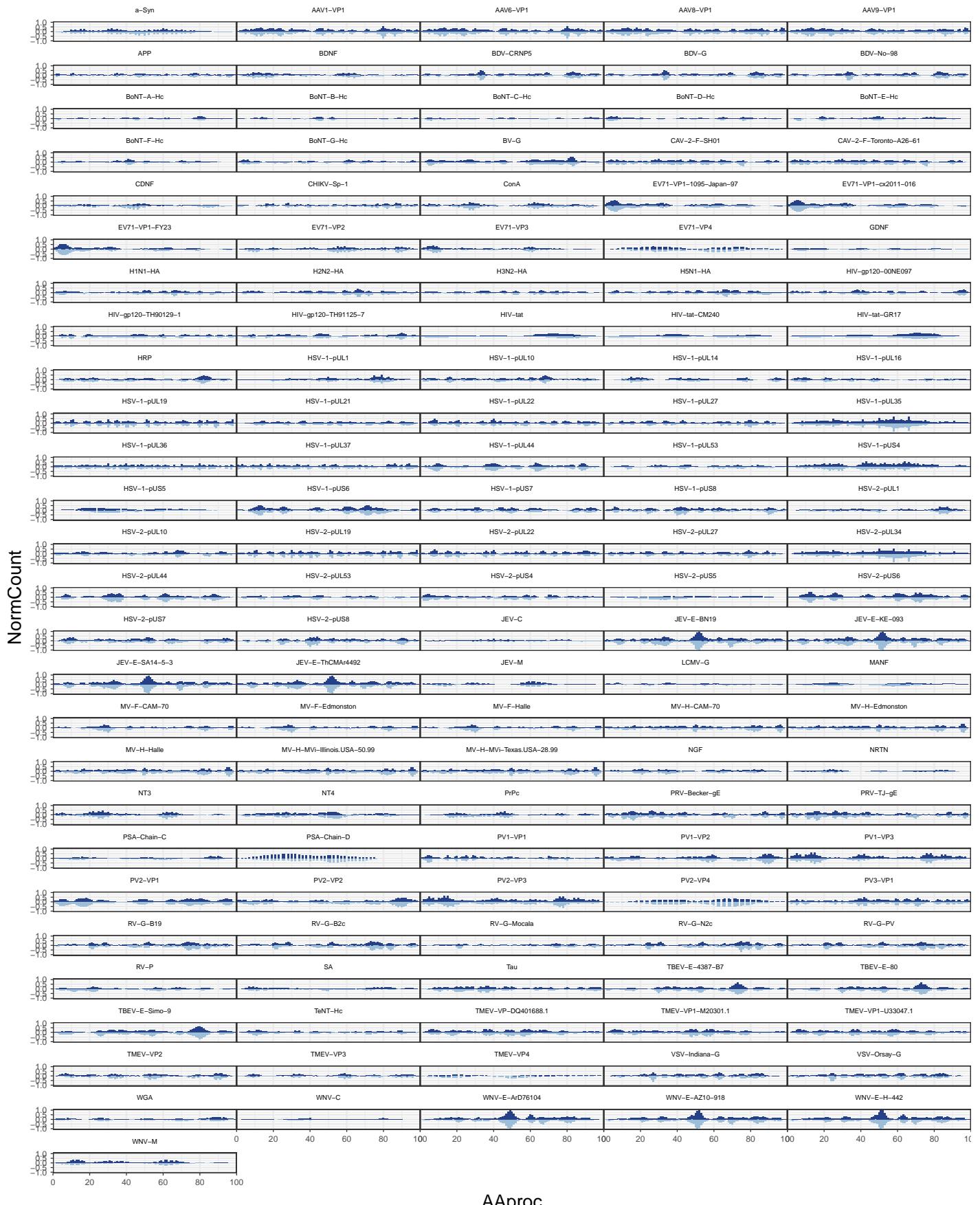
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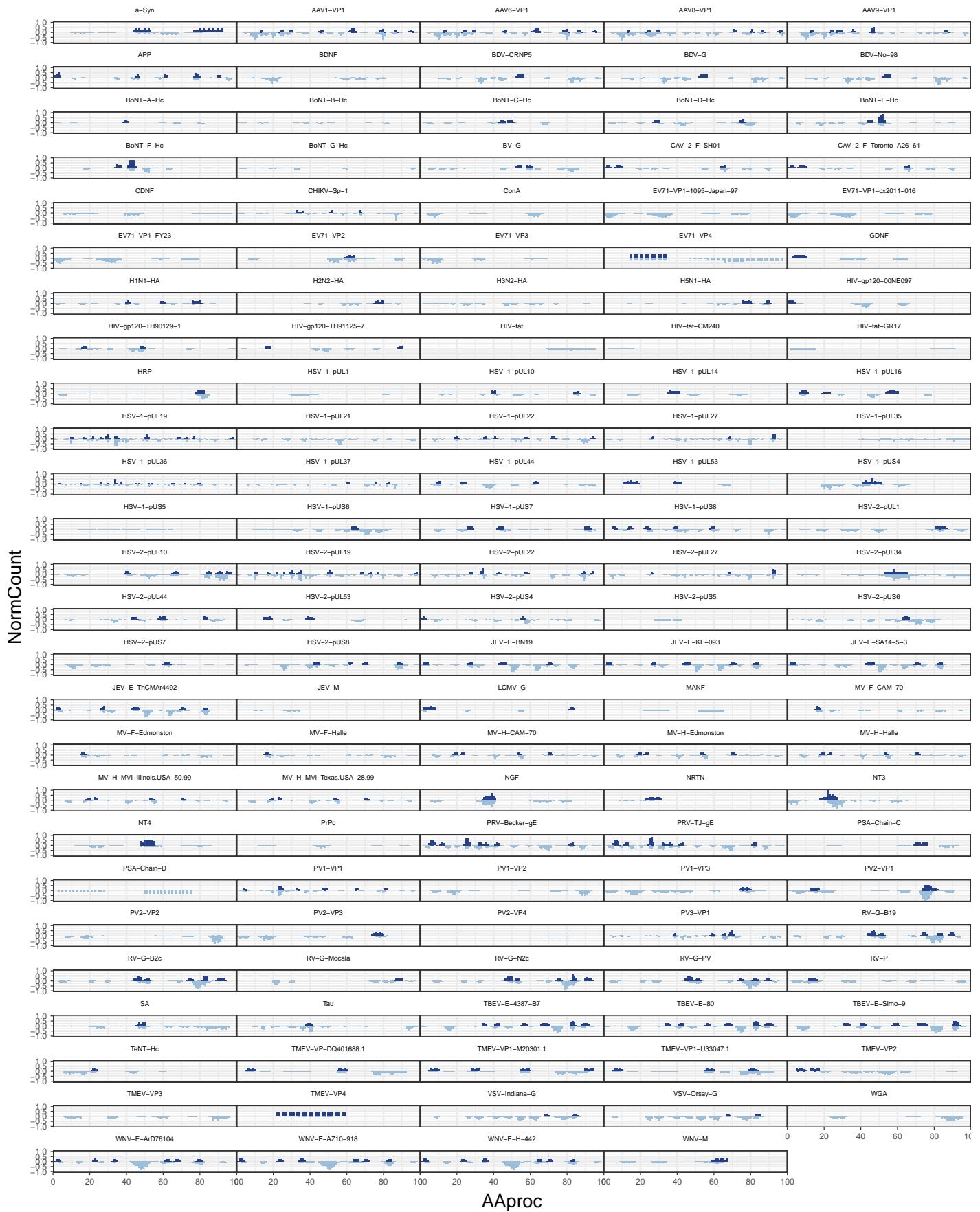




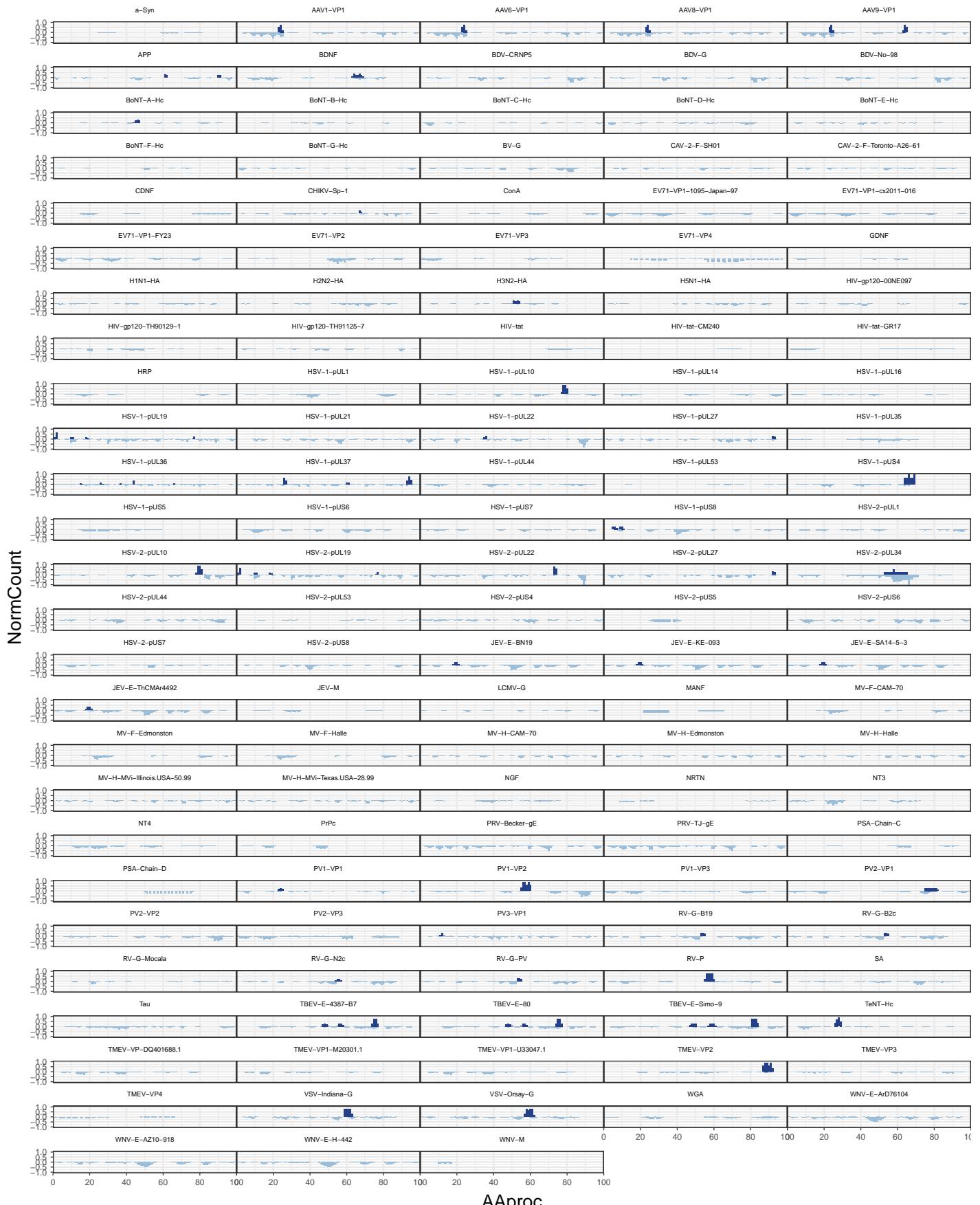




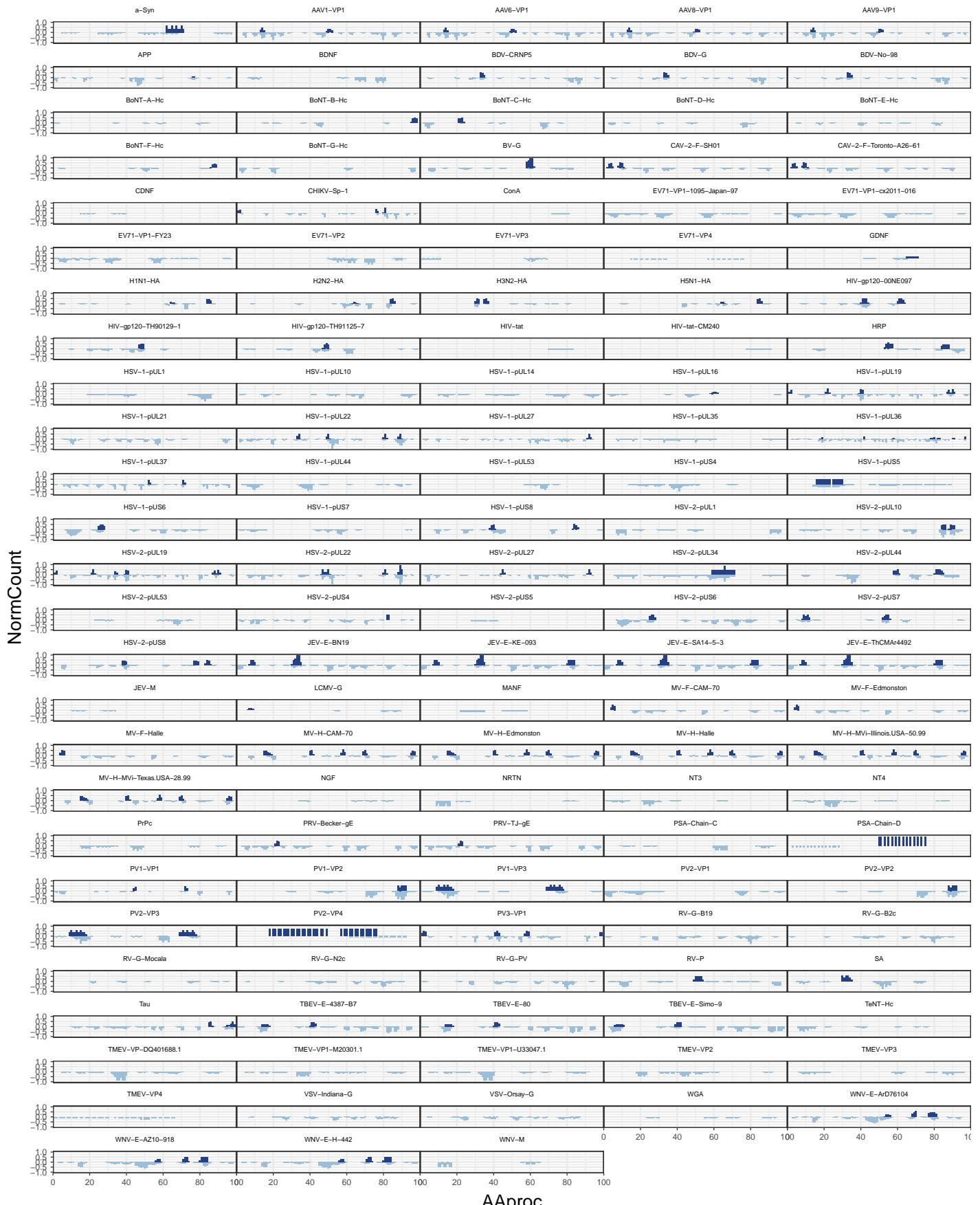




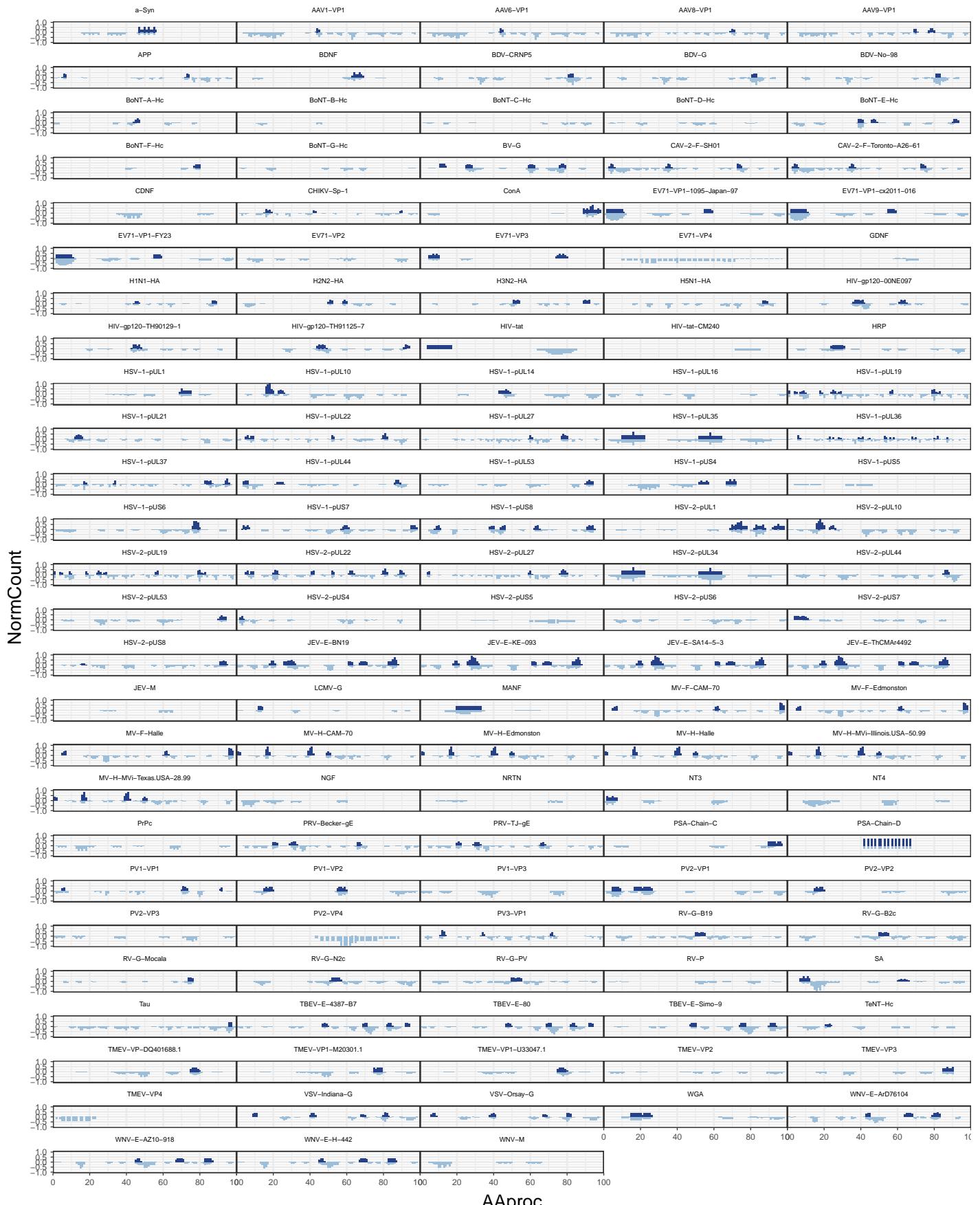
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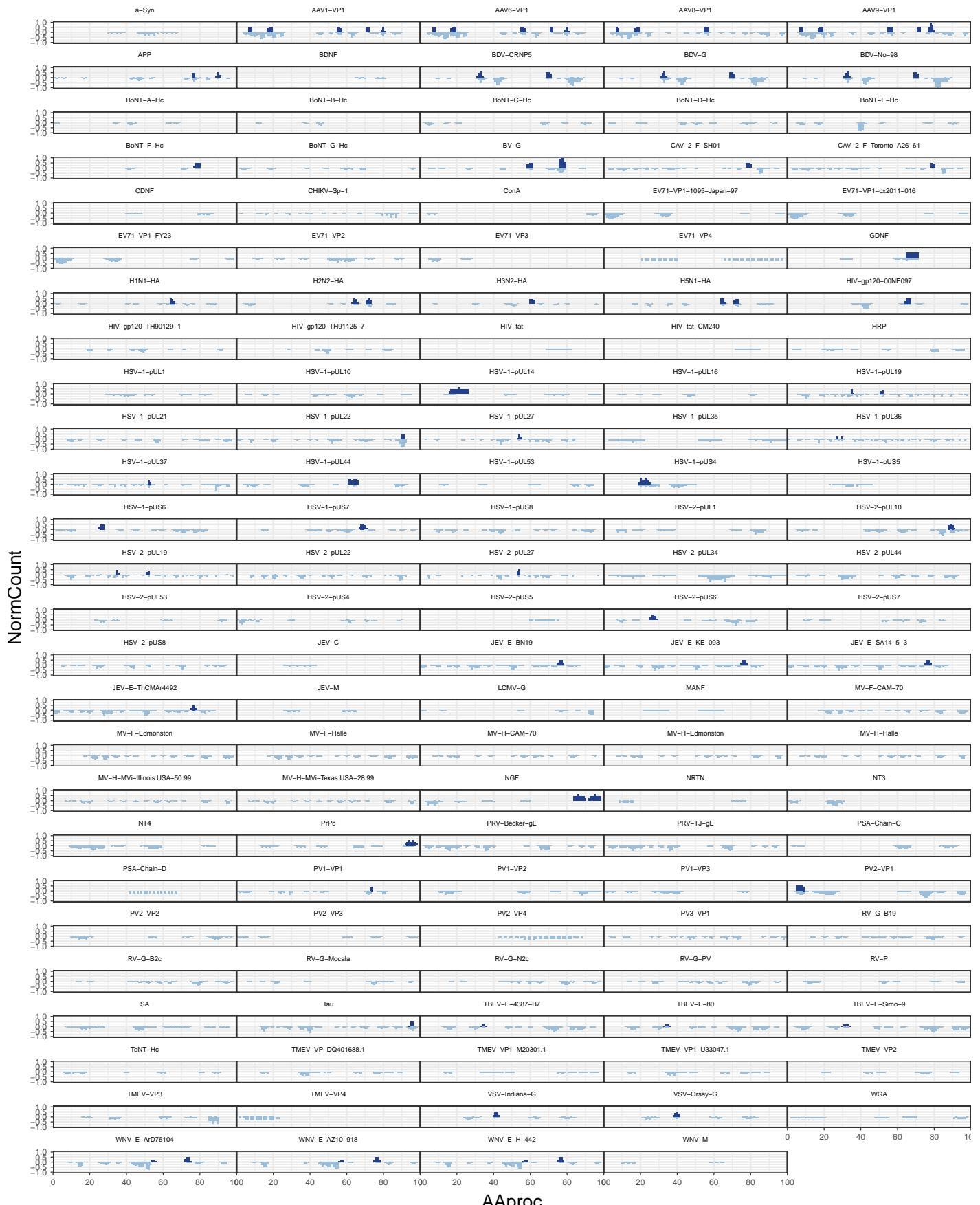


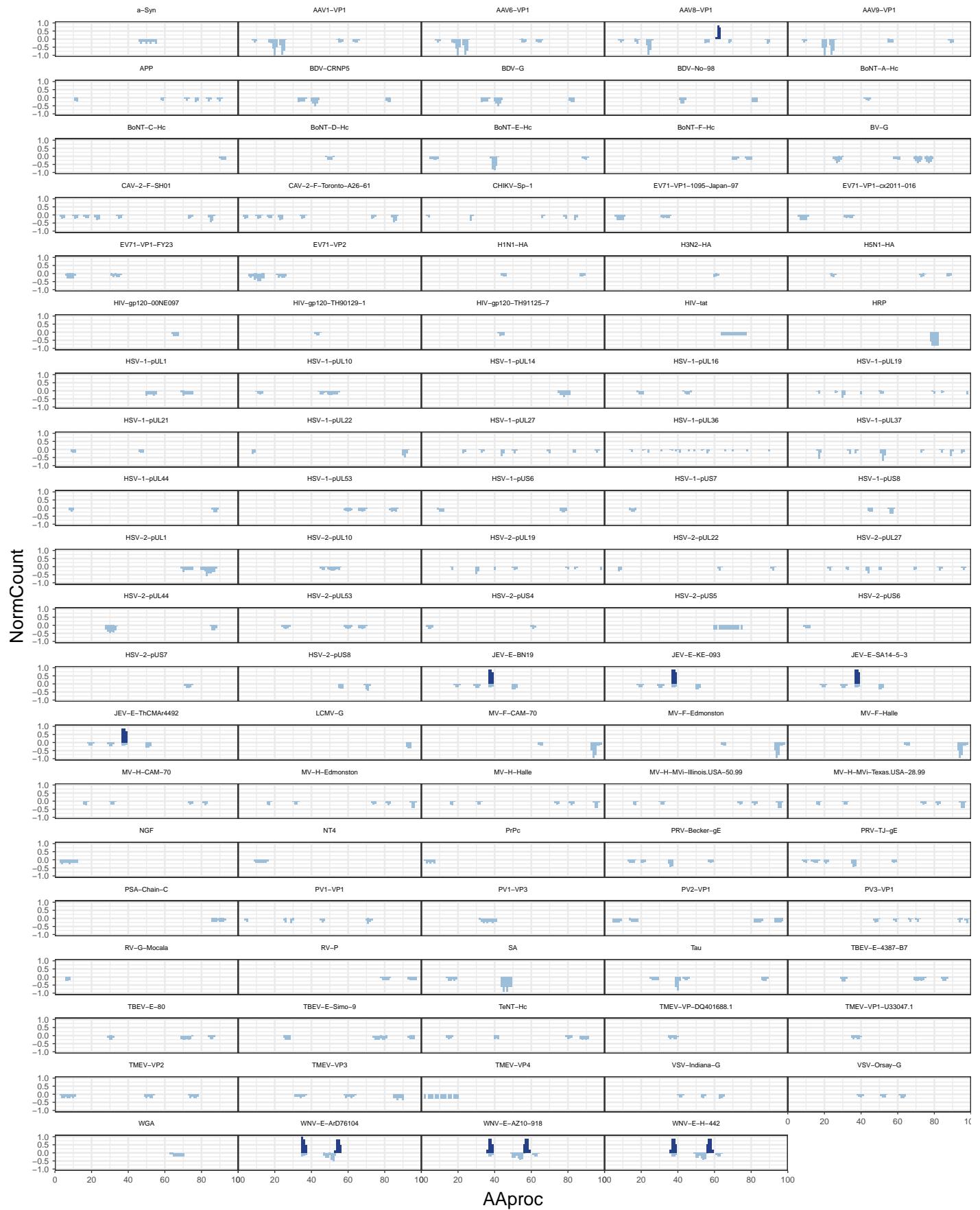
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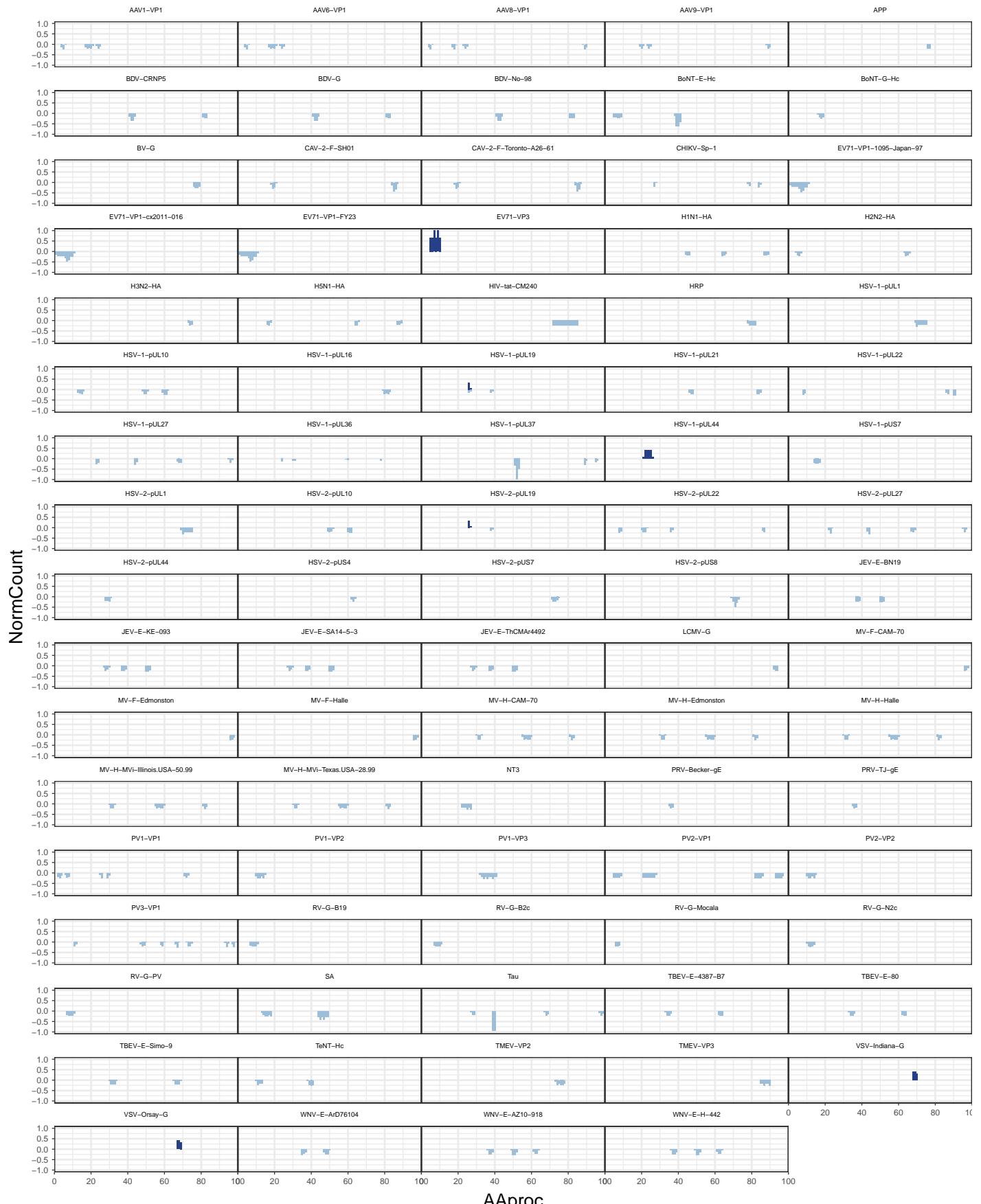
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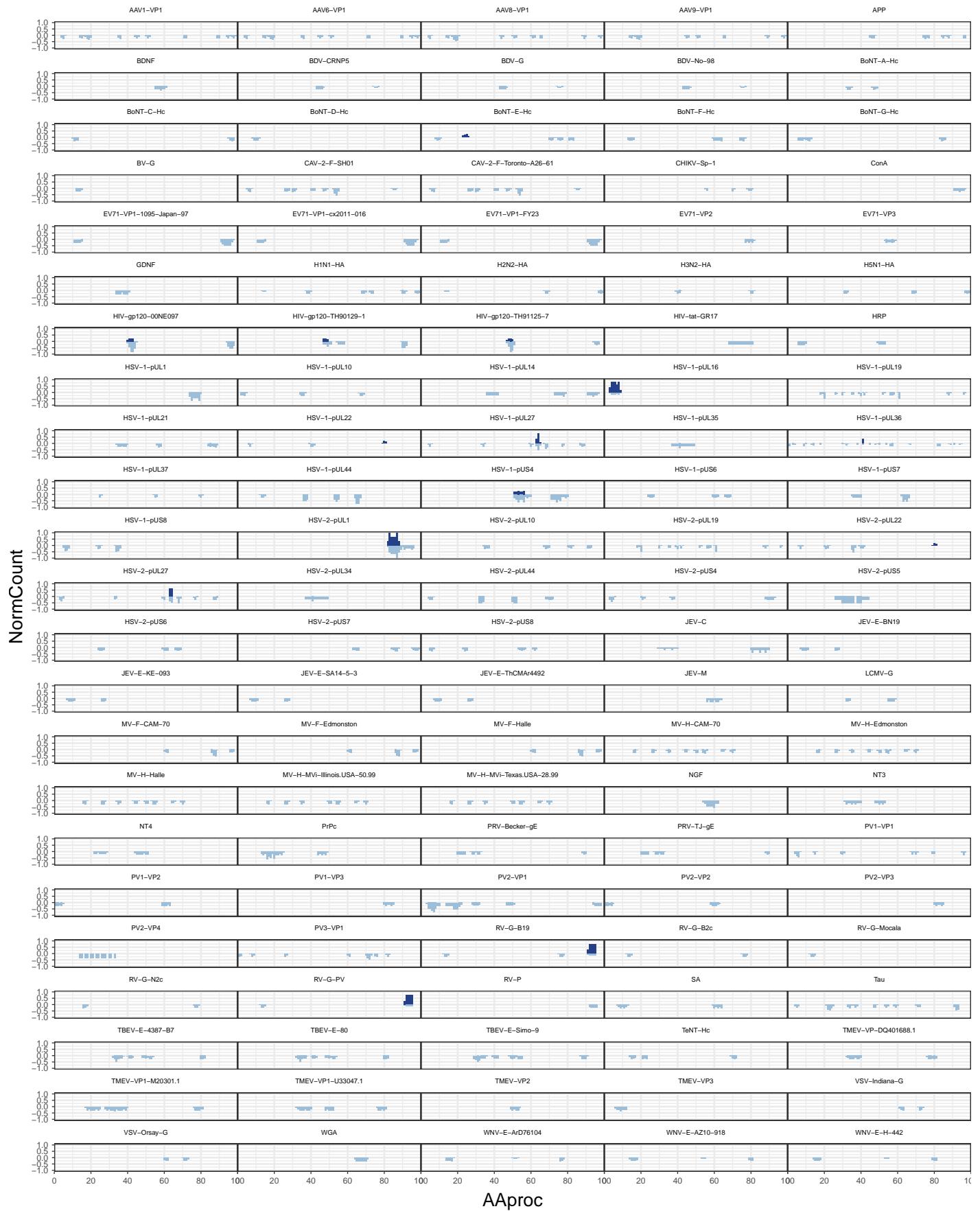






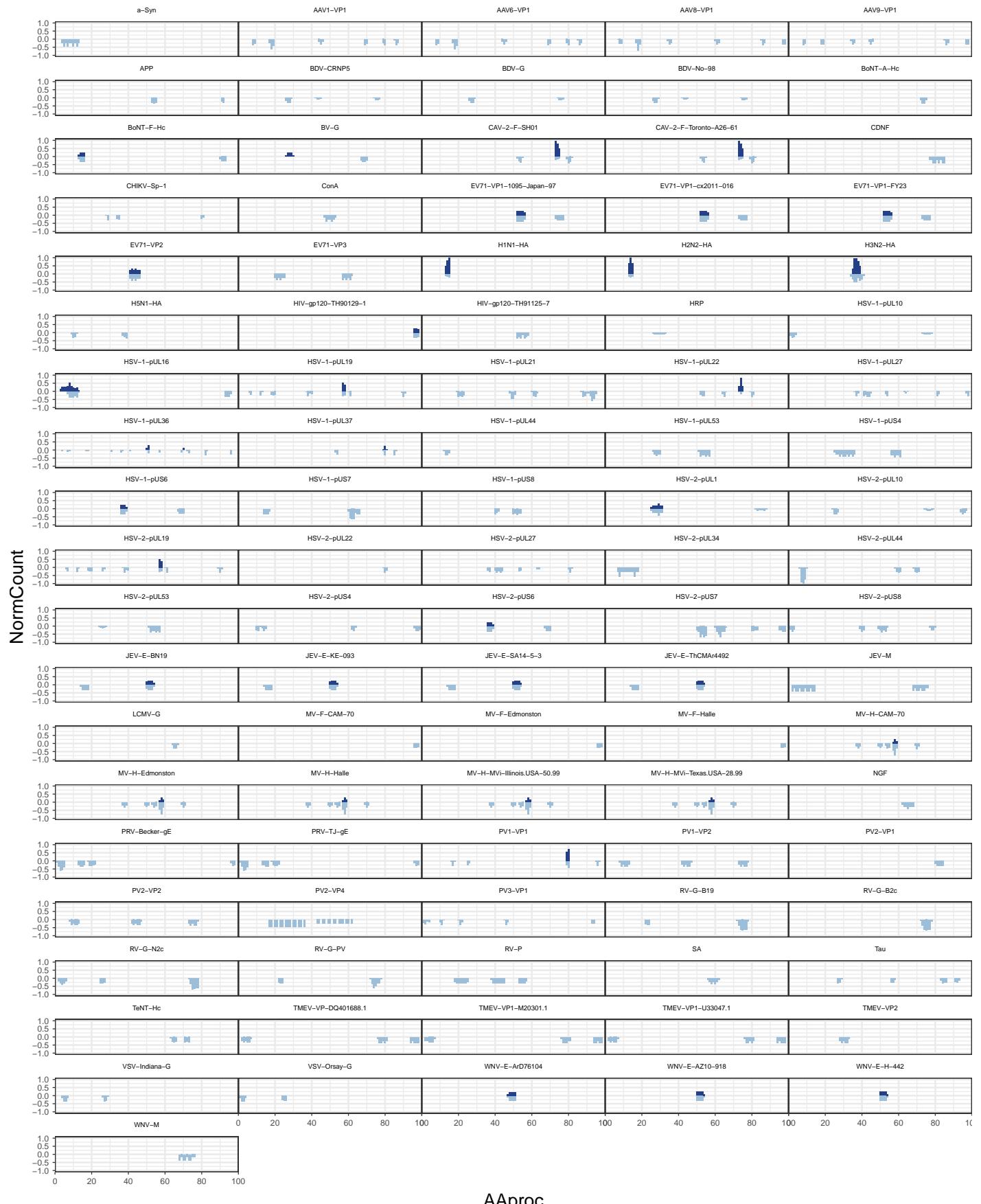
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mRNA_3cpc_pNeuron	AA	NormCount	BCcount	AnimalCount	LUTnrs	mainStruct	mismatches
HSV-1-pUL36	1293	22.540625	1	1	X62972	14aa	0.0
HSV-1-pUL27	582	22.533260	1	1	X24296	14aa	3.5
HSV-1-pUL16	24	22.412921	1	1	X23855	22aa	0.5
RV-G-B19	474	21.604735	1	1	X27641	22aa	0.0
HSV-2-pUL1	192	21.493669	1	1	X40601	14aa	0.0
HSV-1-pUL22	677	6.457672	1	1	X2113	14aa	0.0
HSV-1-pUS4	130	6.457672	1	1	X20542	14aa	1.0
HIV-gp120-00NE097	160	6.457672	1	1	X69282	14aa	1.5
BoNT-E-Hc	118	6.457672	1	1	X70106	14aa	0.0

mRNA_30cpc_pNeuron	AA	NormCount	BCcount	AnimalCount	LUTnrs	mainStruct	mismatches
HSV-1-pUL19	280	49.66815	3	1	X24236,X24237	14aa	1.125
Tau	637	35.80223	2	1	X3376	14aa	0.000
PV1-VP1	54	33.30667	2	1	X42345	22aa	0.000
HSV-1-pUL36	1536	33.23198	2	1	X24780	14aa	0.250
TMEV-VP1-U33047.1	140	33.15391	2	1	X40822	14aa	1.500
HSV-2-pUL27	45	33.11158	2	1	X40487	14aa	1.500
CAV-2-F-SH01	170	33.08158	2	1	X5663	14aa	1.500
HSV-1-pUL36	1436	32.87701	2	1	X42917	14aa	0.250
HSV-1-pUL44	192	32.54908	2	1	X22235,X22239	14aa	0.250
HSV-1-pUL19	845	32.00999	2	1	X47263,X7795	14aa,14aaA5	0.250
HSV-1-pUL36	1785	31.99688	2	1	X27098,X66496	14aa,22aa	1.000
HSV-1-pUL36	443	31.89655	2	1	X57048,X61275	14aa,14aaA5	0.000
HSV-1-pUL27	582	31.72976	2	1	X24296	14aa	2.250
HSV-2-pUL1	192	31.11019	2	1	X40601	14aa	0.500
HSV-1-pUL44	279	31.10510	2	1	X17514,X19211	14aa	0.500
EV71-VP1-1095-Japan-97	282	30.58918	2	1	X39846,X71238	14aa,22aa	2.750
HSV-1-pUL36	2978	29.79895	2	1	X1454	14aa	2.000
HSV-1-pUL27	584	17.57660	1	1	X41804	14aa	0.000
MV-H-CAM-70	168	17.31125	1	1	X38148	14aa	1.000
HRP	26	17.28662	1	1	X67516	14aa	0.000
HSV-2-pUL1	211	17.26244	1	1	X41713	14aa	1.000
TMEV-VP-DQ401688.1	219	17.12981	1	1	X5791	14aa	0.000
BoNT-G-Hc	52	17.08274	1	1	X12601	14aa	0.000
TBEV-E-4387-B7	404	17.07210	1	1	X10677	14aa	0.000
HIV-gp120-TH91125-7	439	17.02513	1	1	X69338	14aa	0.000
GDNF	73	16.90391	1	1	X42437	14aa	0.000
Tau	165	16.86372	1	1	X64141	22aa	0.000
HSV-1-pUL36	1808	16.77645	1	1	X27290	14aa	1.000
TMEV-VP3	23	16.72271	1	1	X10225	14aa	0.000
HSV-1-pUL27	625	16.71541	1	1	X63739	14aa	0.000
AAV8-VP1	330	16.68844	1	1	X65893	14aa	0.000
WNV-E-AZ10-918	84	16.63932	1	1	X44931	22aa	1.000
HSV-1-pUL19	369	16.61973	1	1	X27734	14aa	1.500

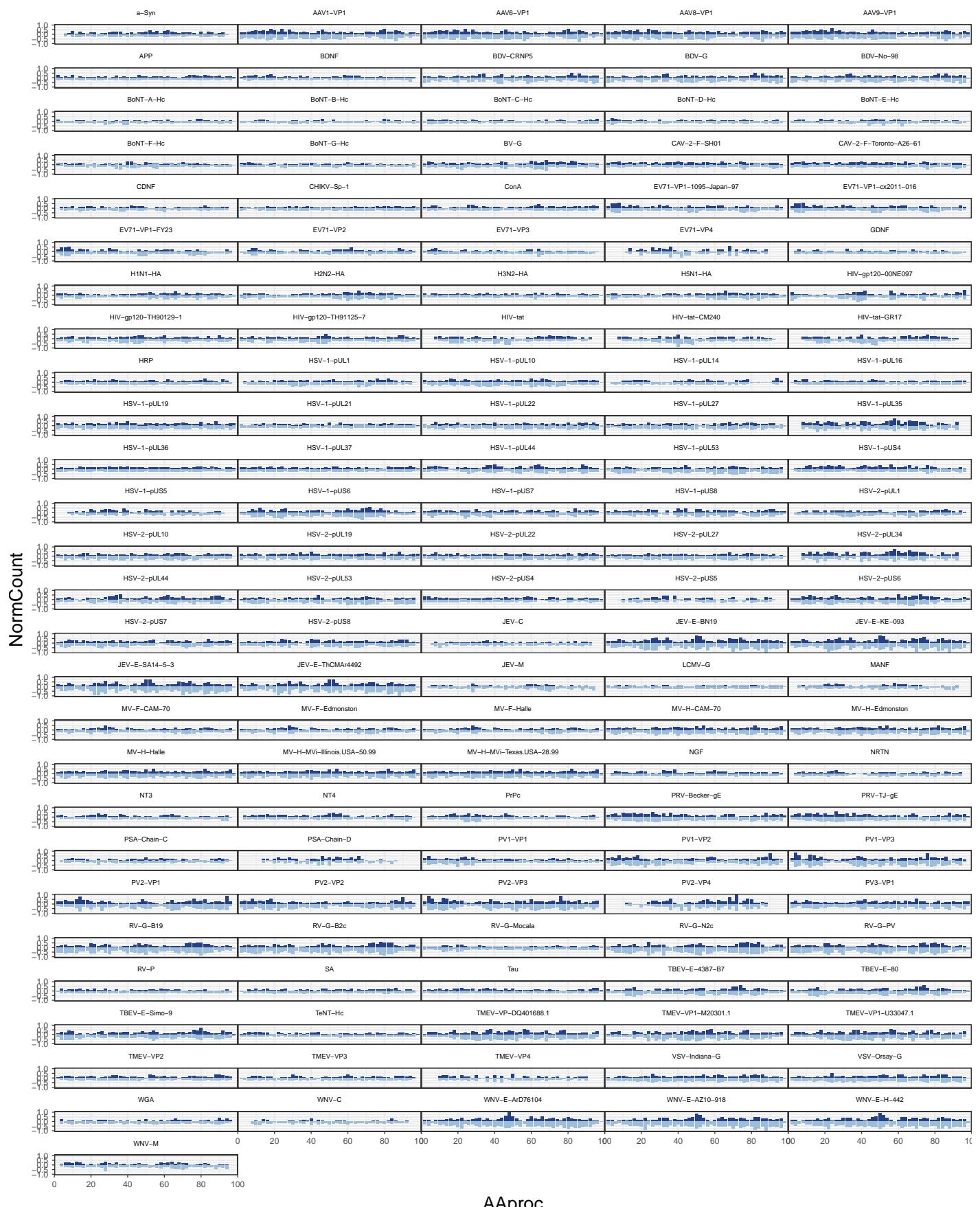


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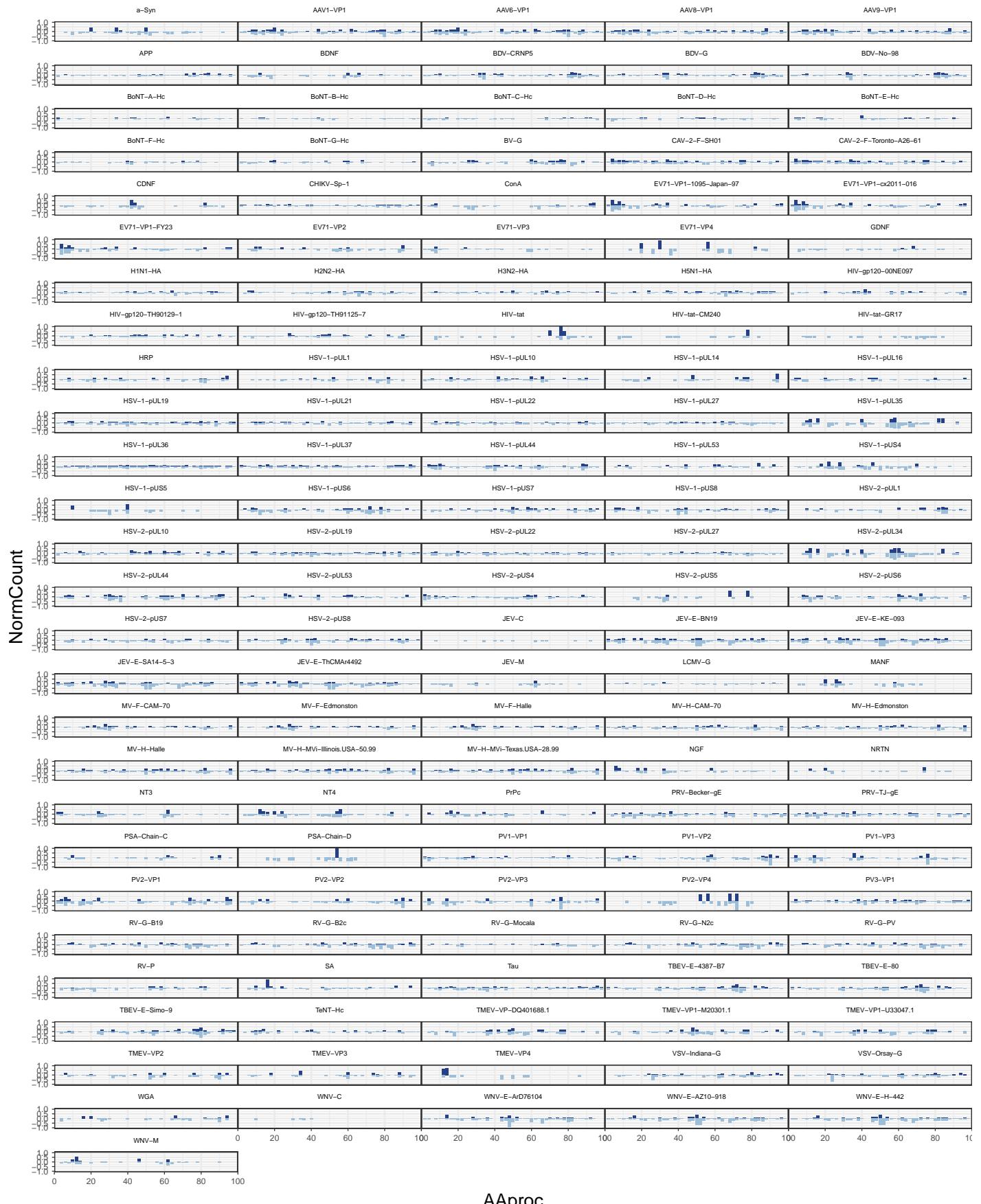
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H1N1-HA	84	22.298735	1	1	X73886	14aa	0.0
PV1-VP1	773	21.311446	1	1	X58768	14aaA5	1.0
HSV-1-pUL36	1603	21.153264	1	1	X3867	14aa	0.0
H3N2-HA	213	21.147690	1	1	X10222	22aa	0.0
HSV-1-pUL19	796	21.125575	1	1	X42219	14aa	0.0
HSV-1-pUL22	625	20.968060	1	1	X39331	14aa	0.5
CAV-2-F-SH01	403	20.780364	1	1	X66190	14aa	0.0
EV71-VP1-1095-Japan-97	162	6.576355	1	1	X76120	14aa	0.0
EV71-VP2	112	6.576355	1	1	X65579	14aa	0.5
HSV-1-pUL16	24	6.166348	1	1	X23855	22aa	0.5
HIV-gp120-TH90129-1	473	6.166348	1	1	X37851	14aa	1.0
BV-G	113	5.591394	1	1	X27539	14aa	3.5
HSV-1-pUL16	39	5.591394	1	1	X42230	22aa	0.5
HSV-1-pUL36	2209	5.591394	1	1	X38260	14aa	0.0
HSV-1-pUL37	904	5.591394	1	1	X76395	14aa	3.0
HSV-1-pUS6	149	5.591394	1	1	X39539	14aa	0.0
HSV-2-pUL1	65	5.591394	1	1	X56056	14aaA5	1.5
JEV-E-BN19	261	5.591394	1	1	X13674	22aa	0.0
MV-H-CAM-70	362	5.591394	1	1	X27592	14aa	1.0
BoNT-F-Hc	64	5.591394	1	1	X917	14aa	1.5

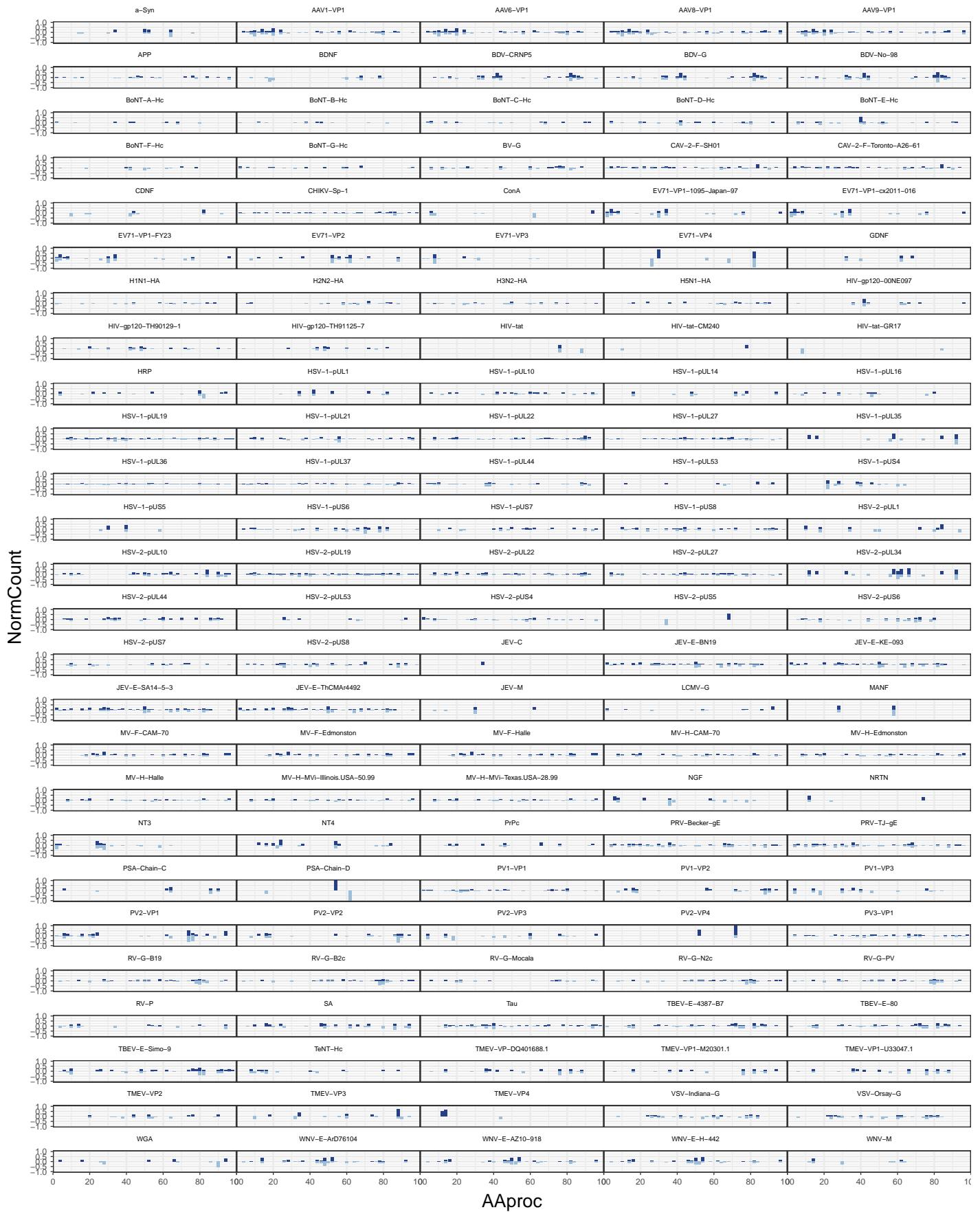
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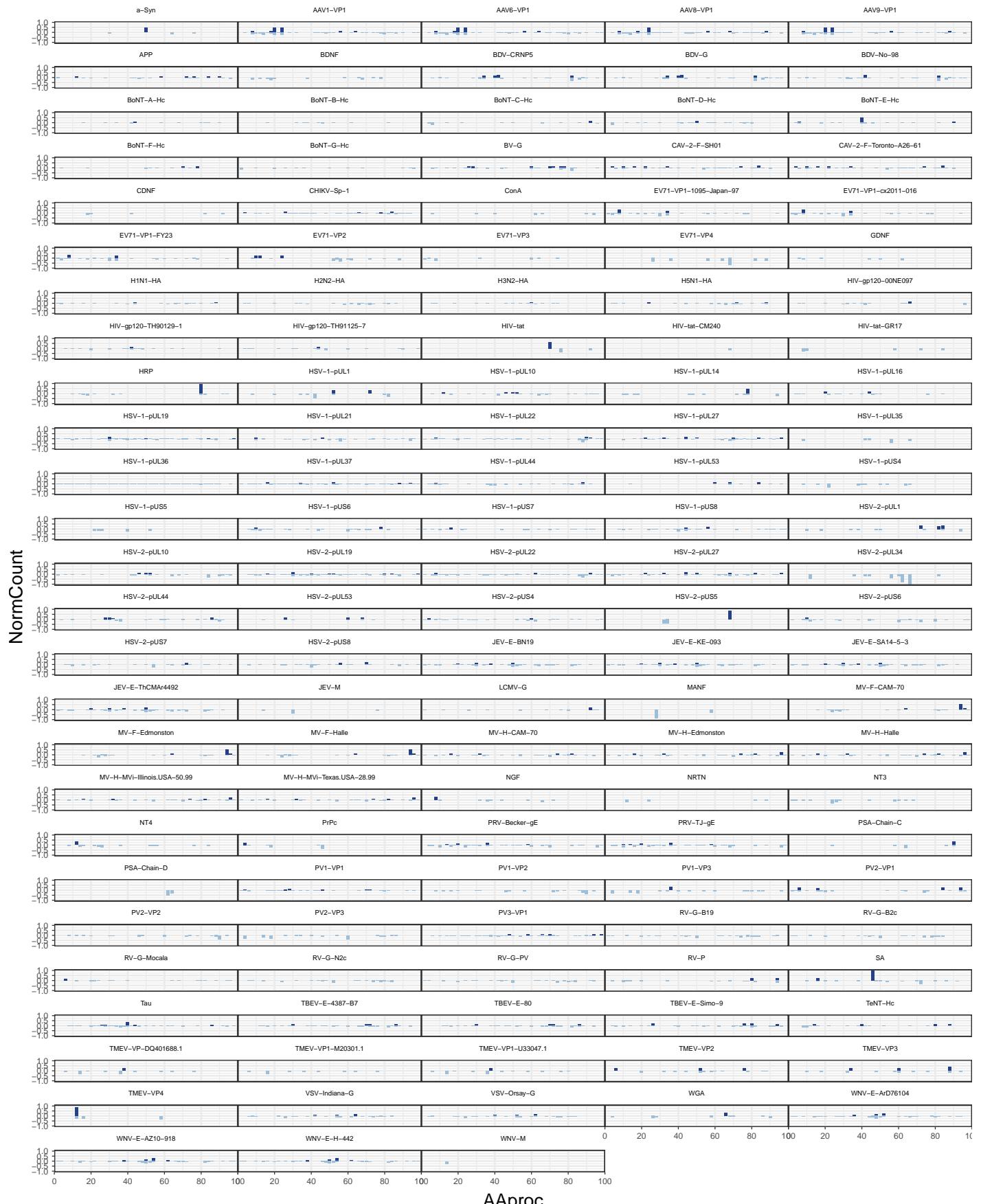
mRNA_30cpc_HEK293T	AA	NormCount	BCcount	AnimalCount	LUTnrs	mainStruct	mismatches
MV-H-CAM-70	360	34.00131	2	1	X11283	14aa	0.0
HSV-2-pUL44	41	33.01510	2	1	X9283	14aa	0.0
HSV-2-pUL44	42	32.46500	2	1	X69016	14aa	0.0
EV71-VP1-1095-Japan-97	162	19.35789	1	1	X76120	14aa	0.0
CAV-2-F-SH01	439	18.72065	1	1	X10467	14aa	0.0
EV71-VP2	112	18.45133	1	1	X65579	14aa	0.5
HSV-1-pUL21	269	18.38387	1	1	X50562	14aaA5	3.0
APP	420	18.20264	1	1	X66812	22aa	1.5
VSV-Indiana-G	31	18.13810	1	1	X16997	14aa	1.0
HSV-1-pUS4	142	18.08170	1	1	X702	14aa	1.0
HSV-1-pUL19	277	17.92440	1	1	X27468	14aa	0.0
HSV-1-pUS6	149	17.65008	1	1	X39539	14aa	0.0
HSV-1-pUL16	39	17.55365	1	1	X42230	22aa	0.5
HSV-1-pUL19	797	17.48011	1	1	X27258	14aa	1.0
HSV-2-pUS7	362	17.36617	1	1	X30845	14aa	0.5
BoNT-F-Hc	64	17.29382	1	1	X917	14aa	1.5
HSV-1-pUL36	248	17.25072	1	1	X9379	14aa	1.0
HSV-1-pUL36	2601	17.22149	1	1	X26960	14aa	0.0
HSV-1-pUL22	677	17.15593	1	1	X2113	14aa	0.0
HSV-1-pUL53	186	17.14863	1	1	X30100	22aa	0.0
RV-G-N2c	24	17.09670	1	1	X65456	22aa	0.0
TMEV-VP-DQ401688.1	267	17.08355	1	1	X7512	14aa	1.5
AAV8-VP1	456	17.08091	1	1	X11800	14aa	0.0
HSV-1-pUL21	498	17.07481	1	1	X44648	14aa	2.0
CDNF	134	17.07242	1	1	X29850	14aa	1.0
CHIKV-Sp-1	1010	17.06815	1	1	X44074	14aa	2.0
MV-H-CAM-70	362	17.05932	1	1	X27592	14aa	1.0
RV-G-B19	120	17.05474	1	1	X17010	14aa	0.0
PV1-VP2	206	16.97355	1	1	X30460	14aa	0.0
PRV-Becker-gE	87	16.90913	1	1	X12187	22aa	3.5
TMEV-VP-DQ401688.1	210	16.88764	1	1	X55589	14aa	1.0



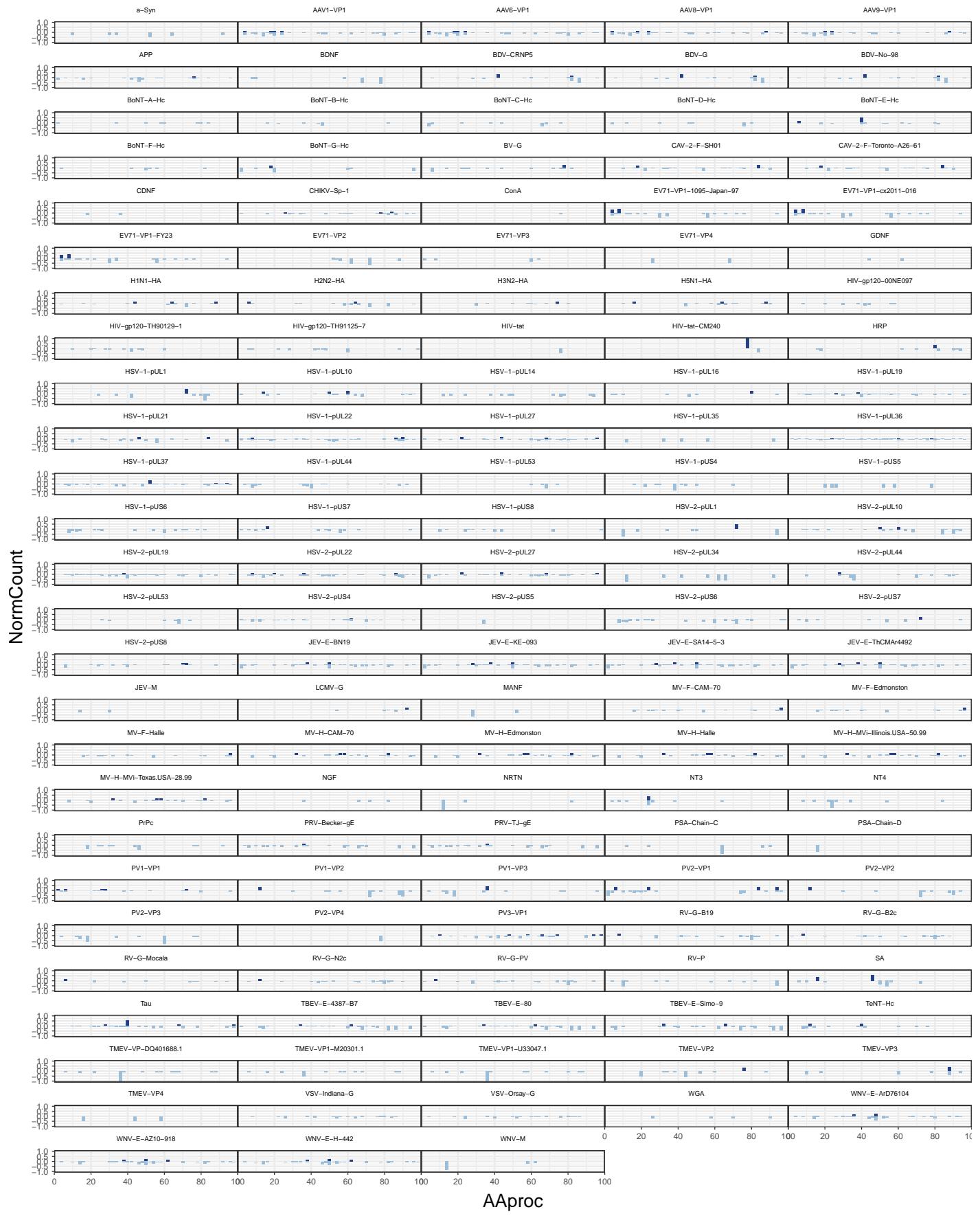
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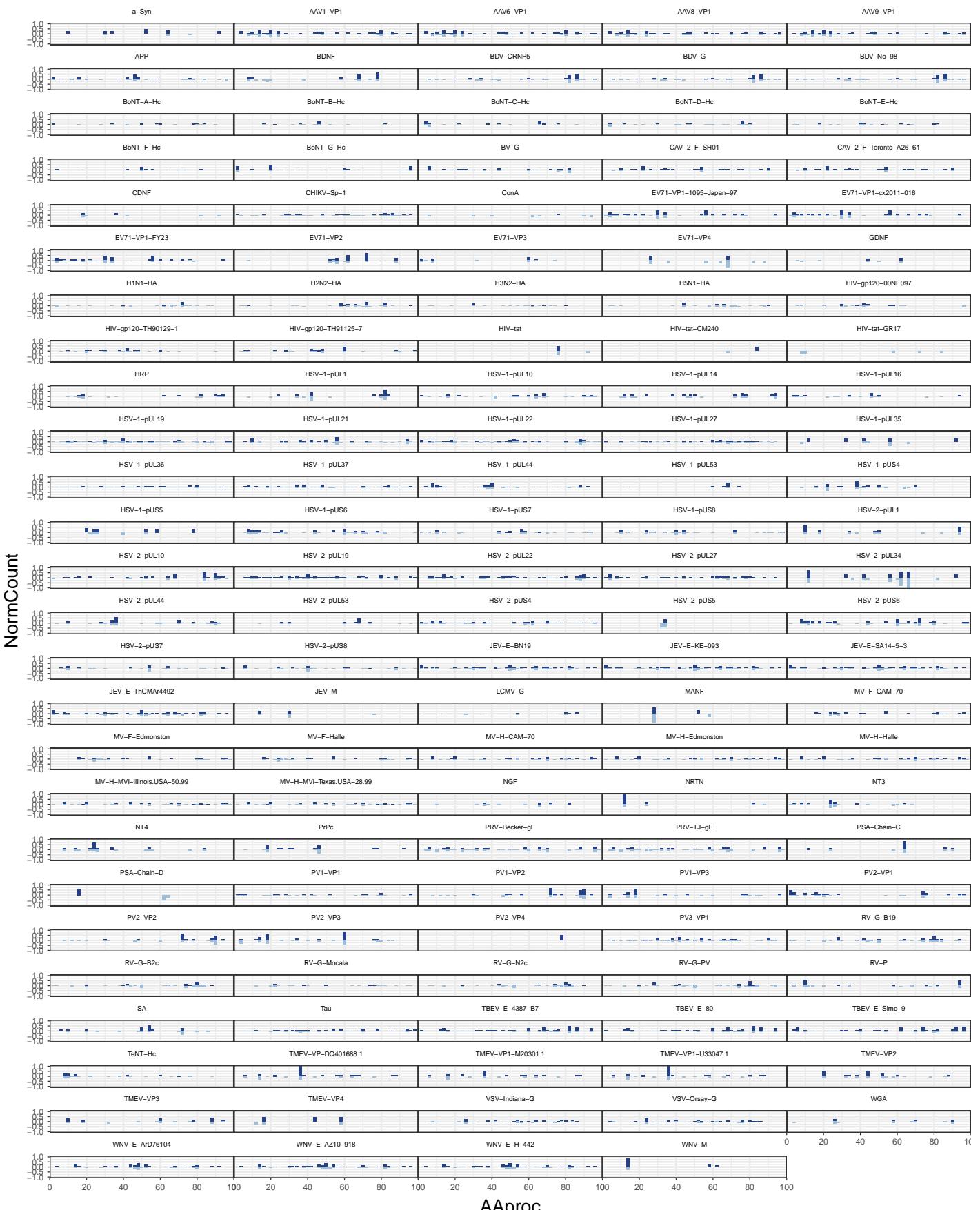


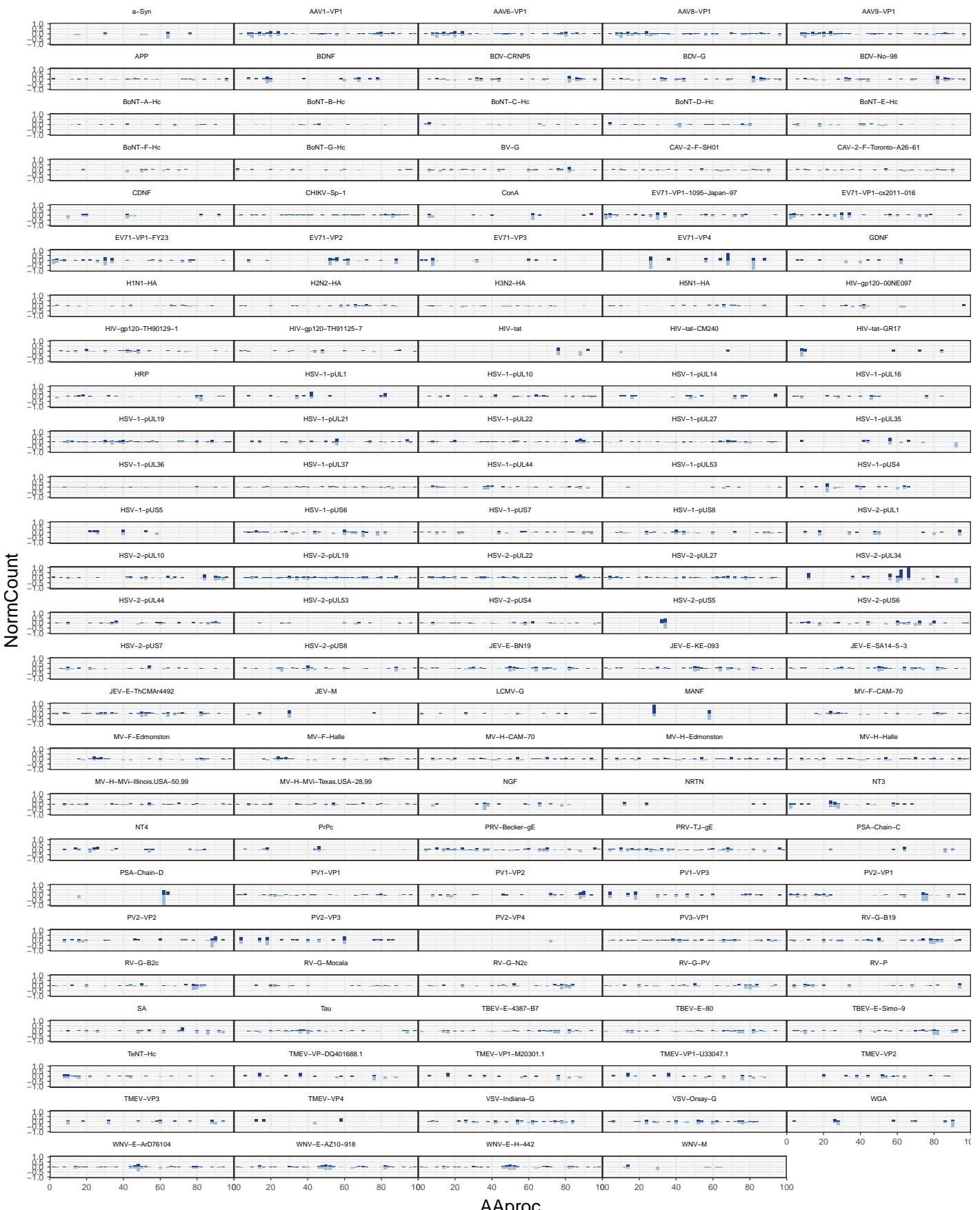


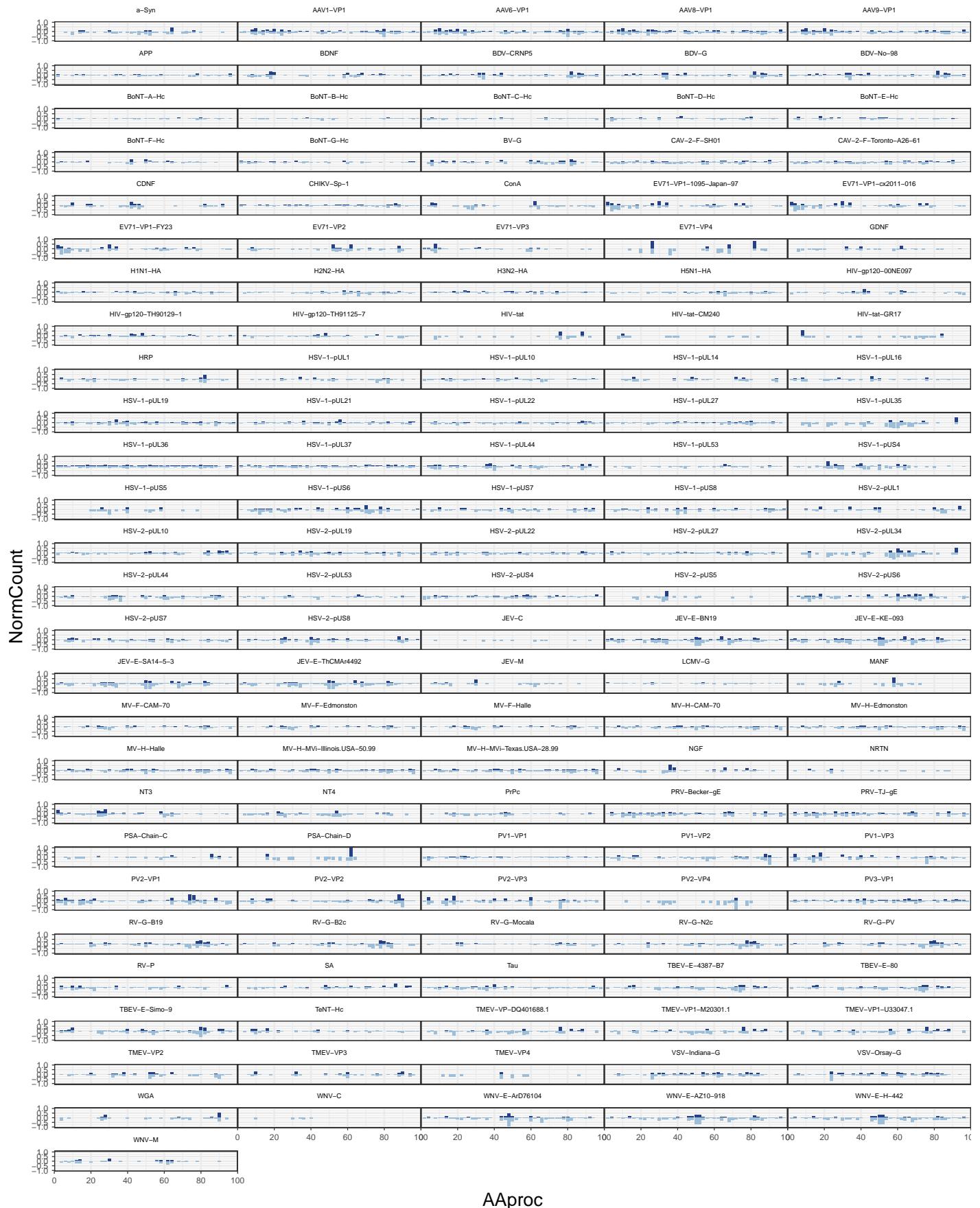
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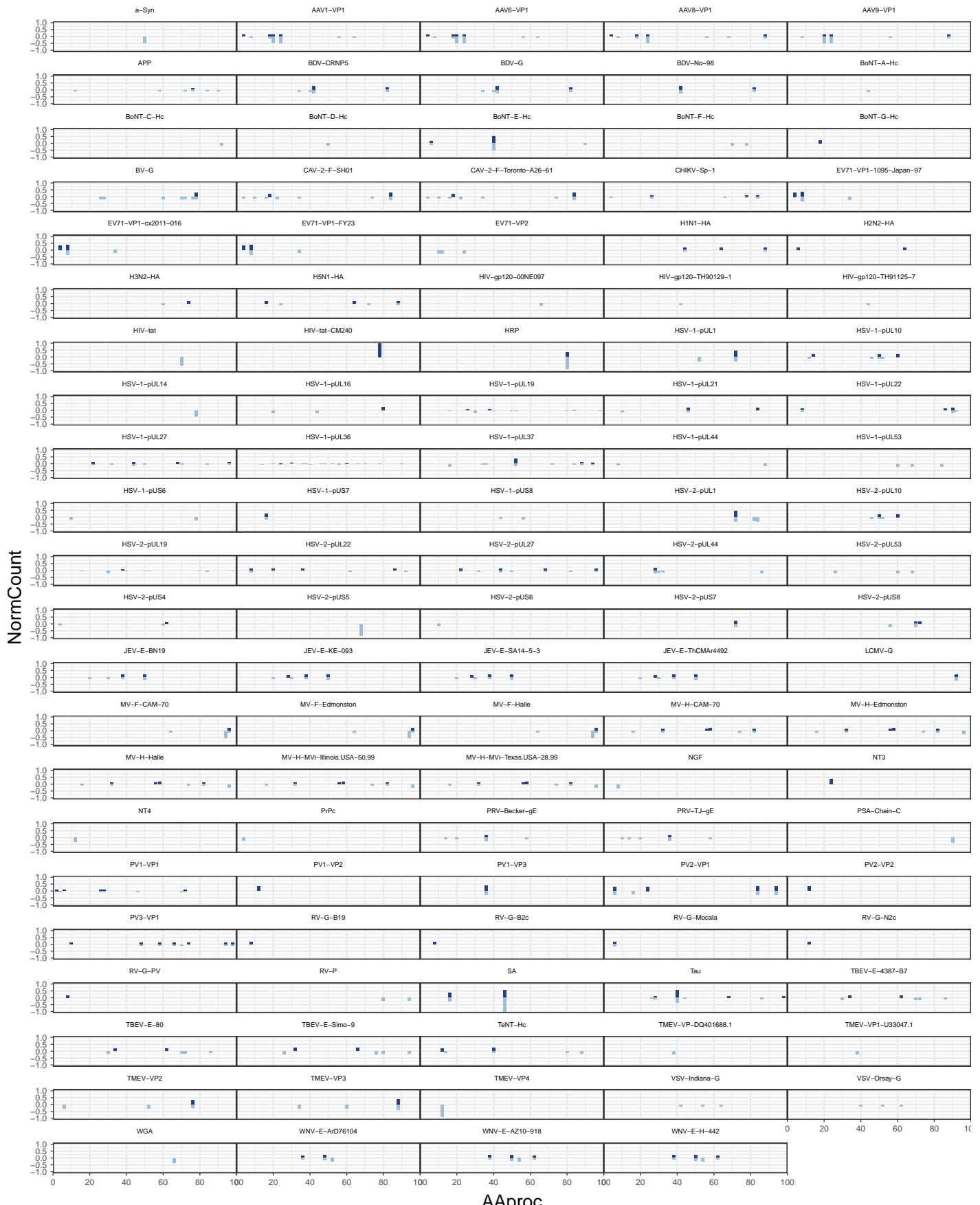


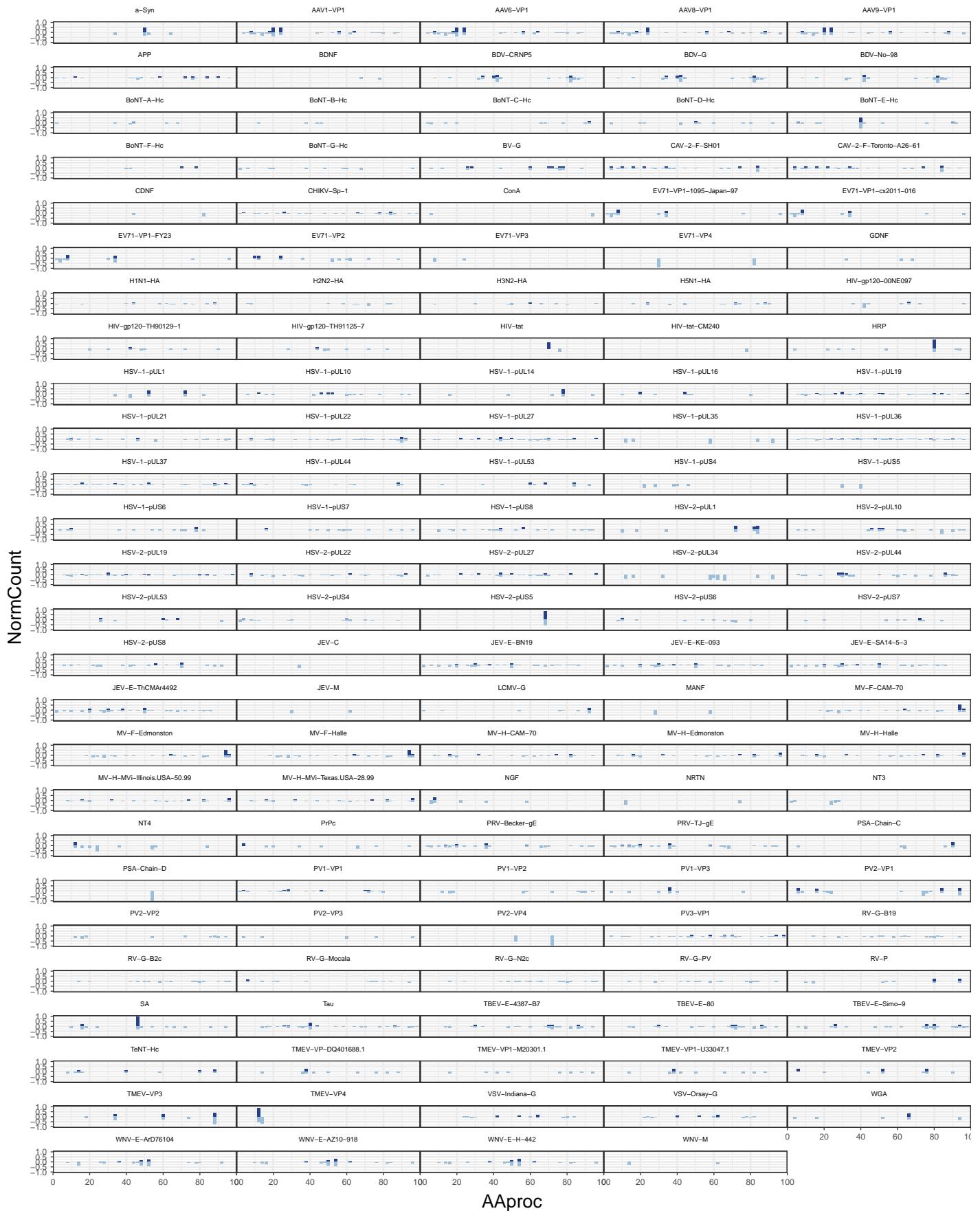
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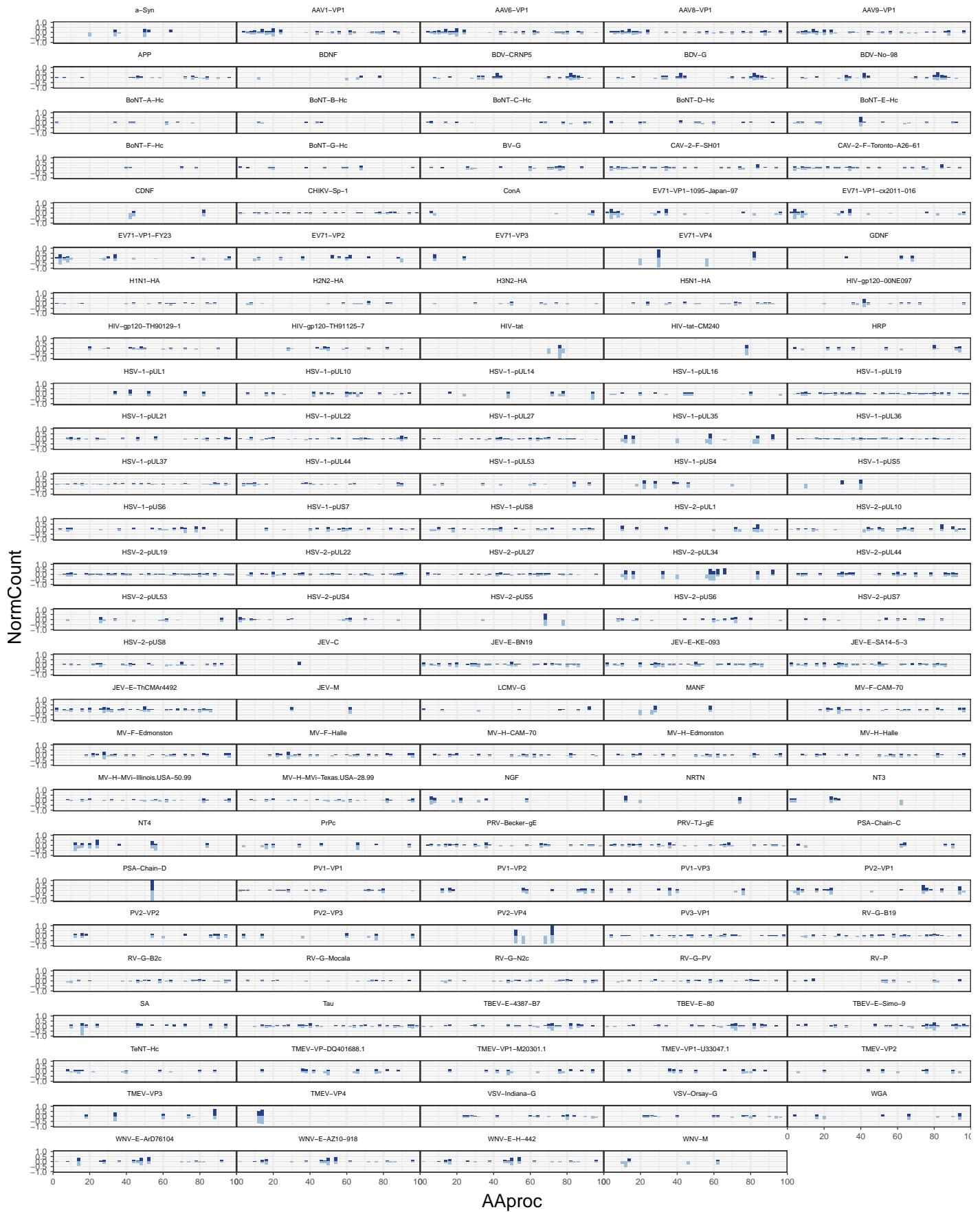




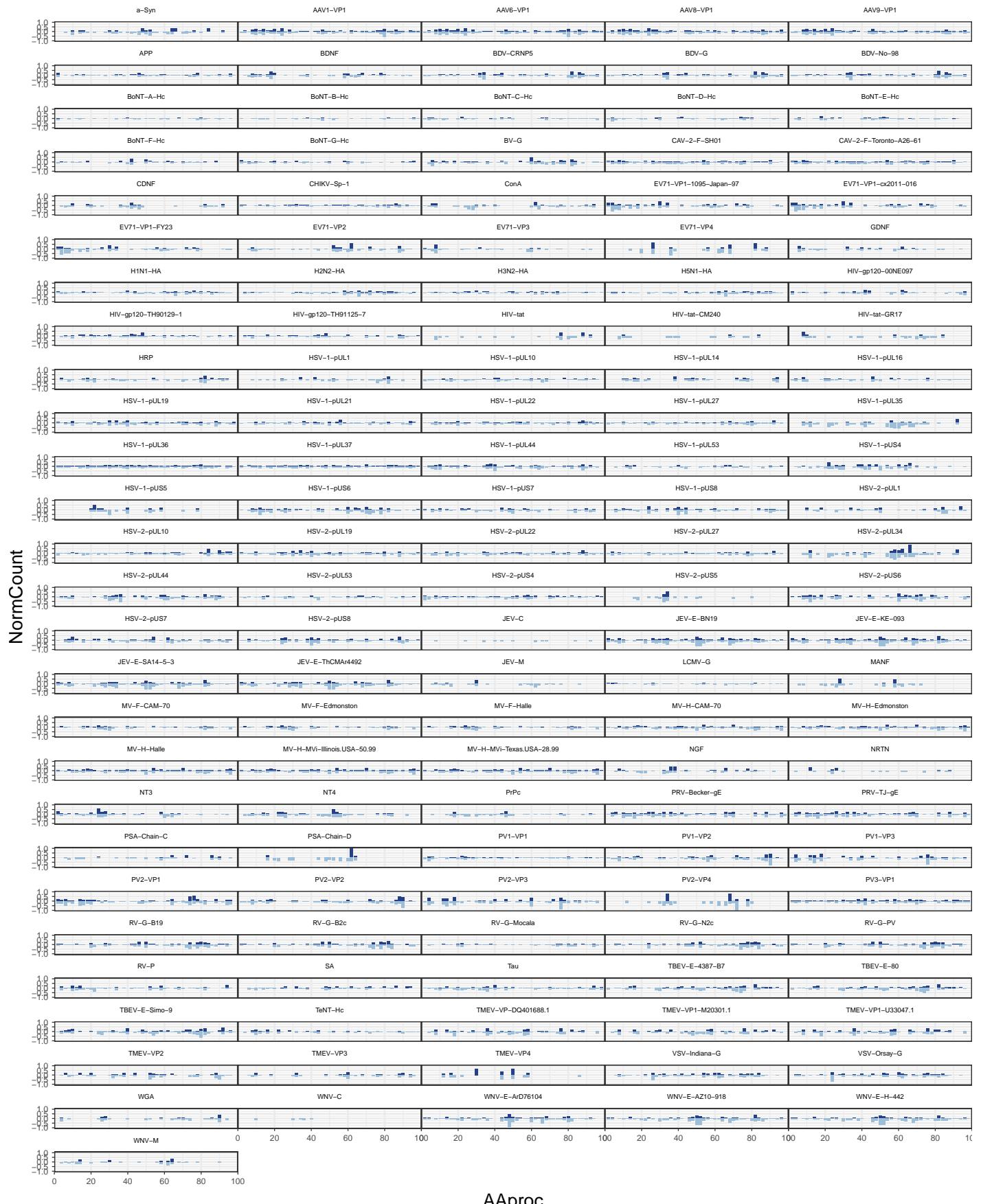


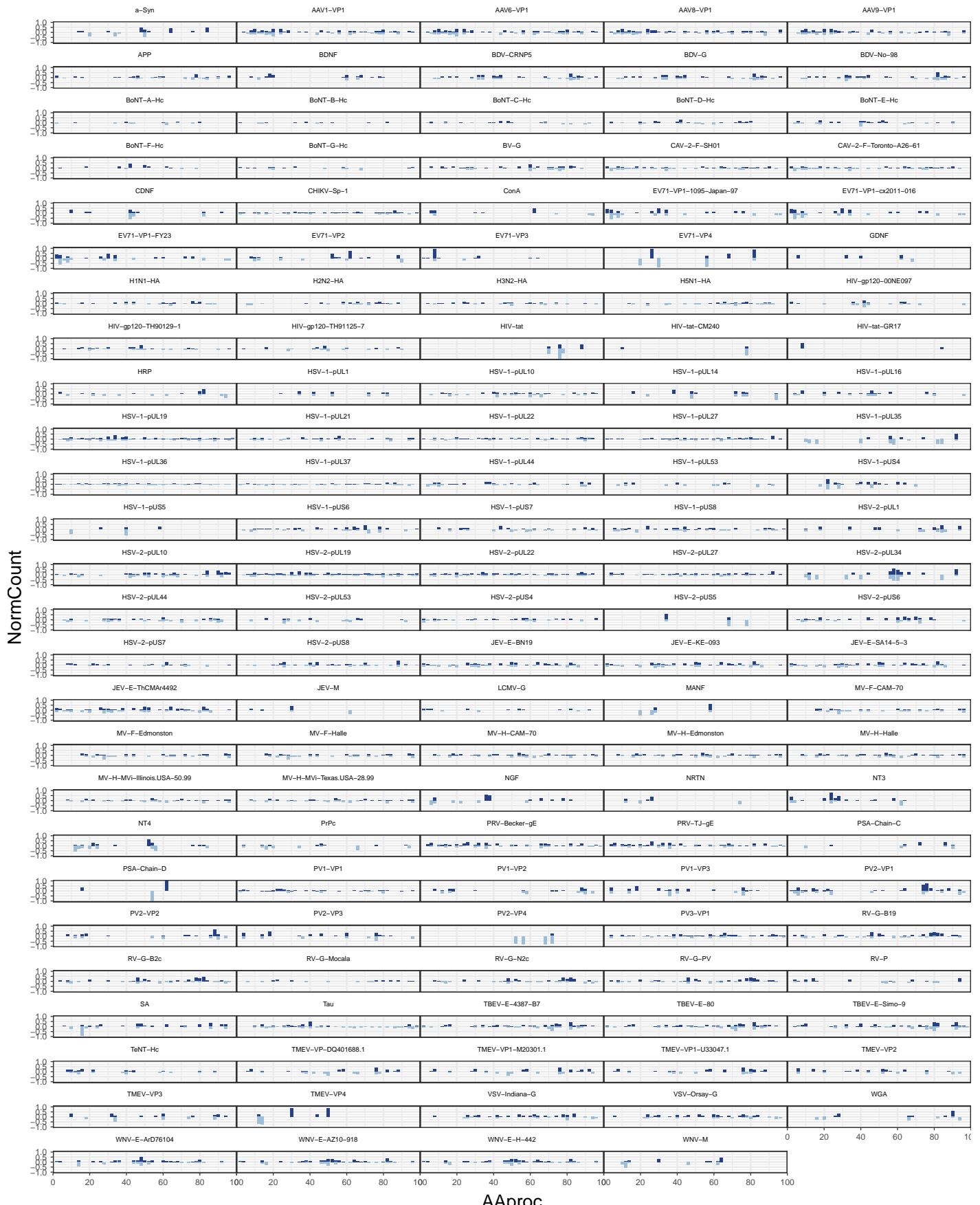


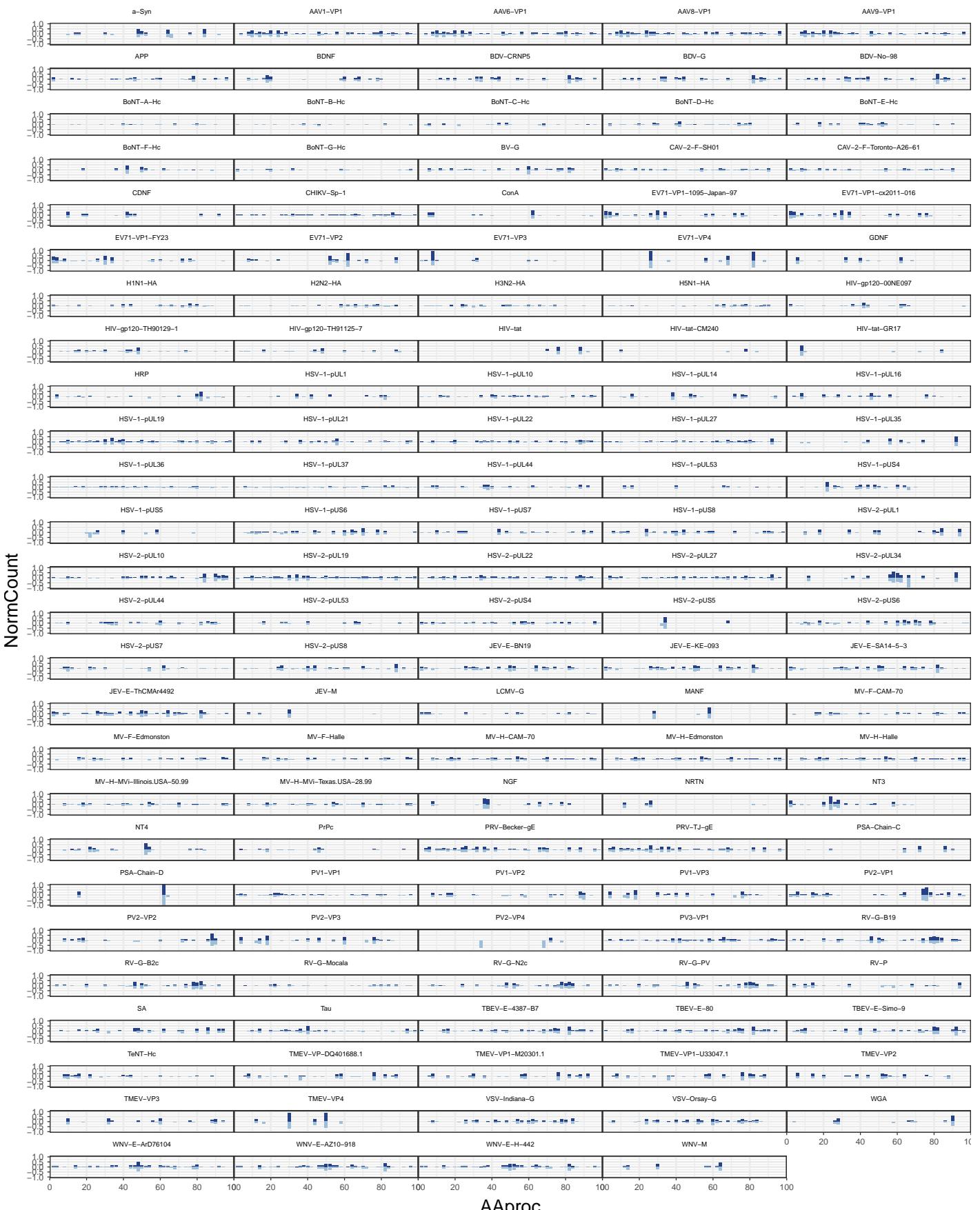
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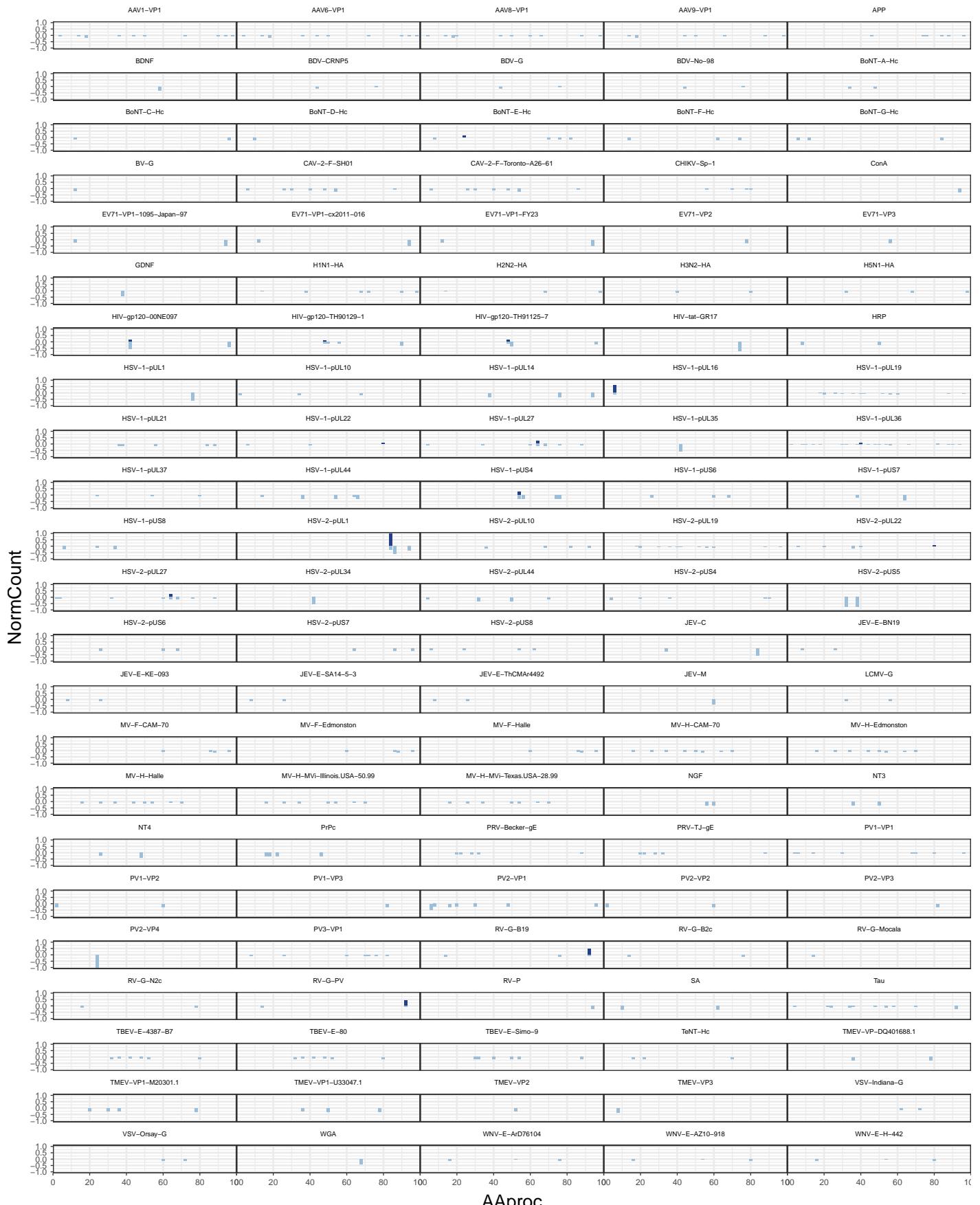
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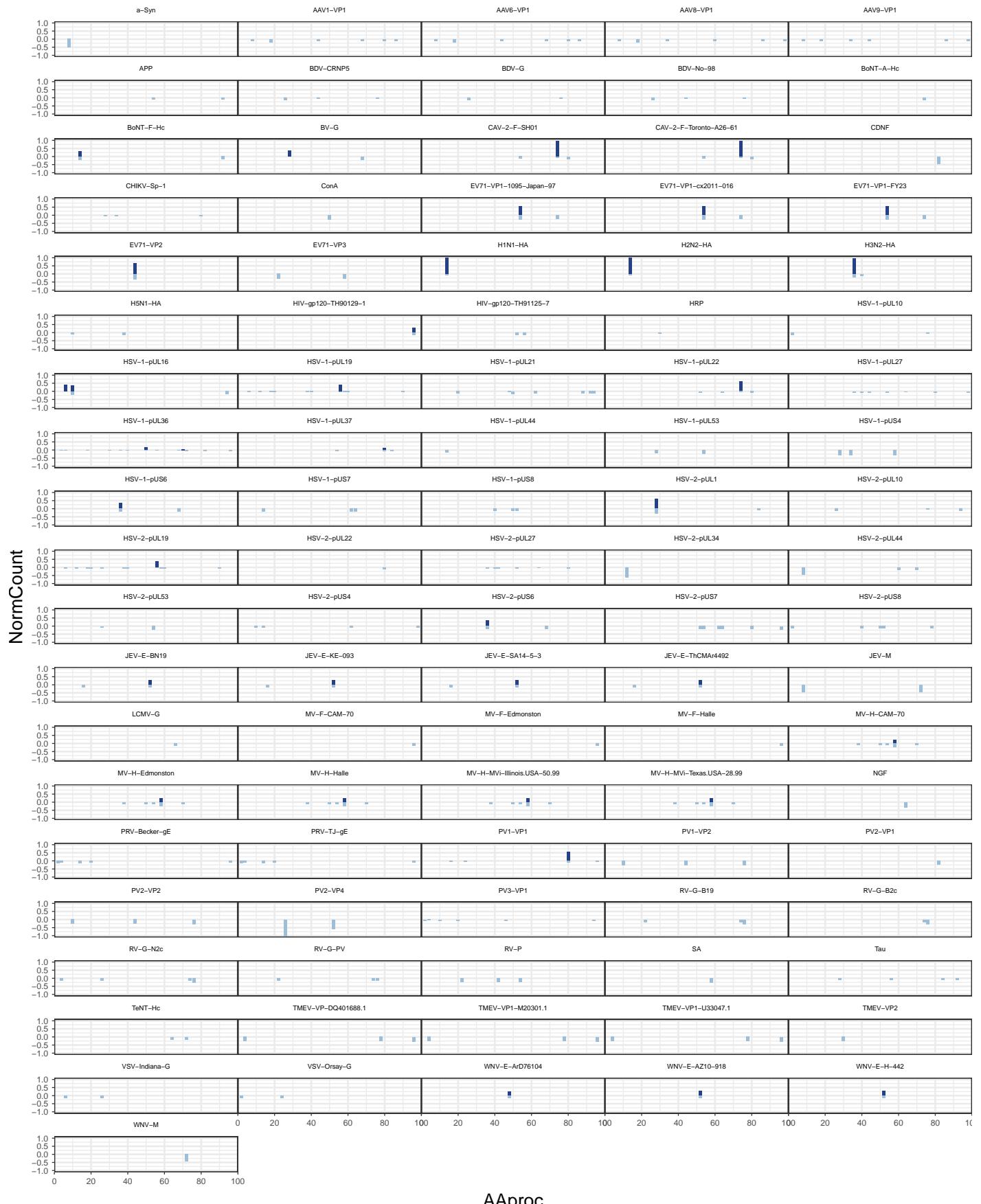




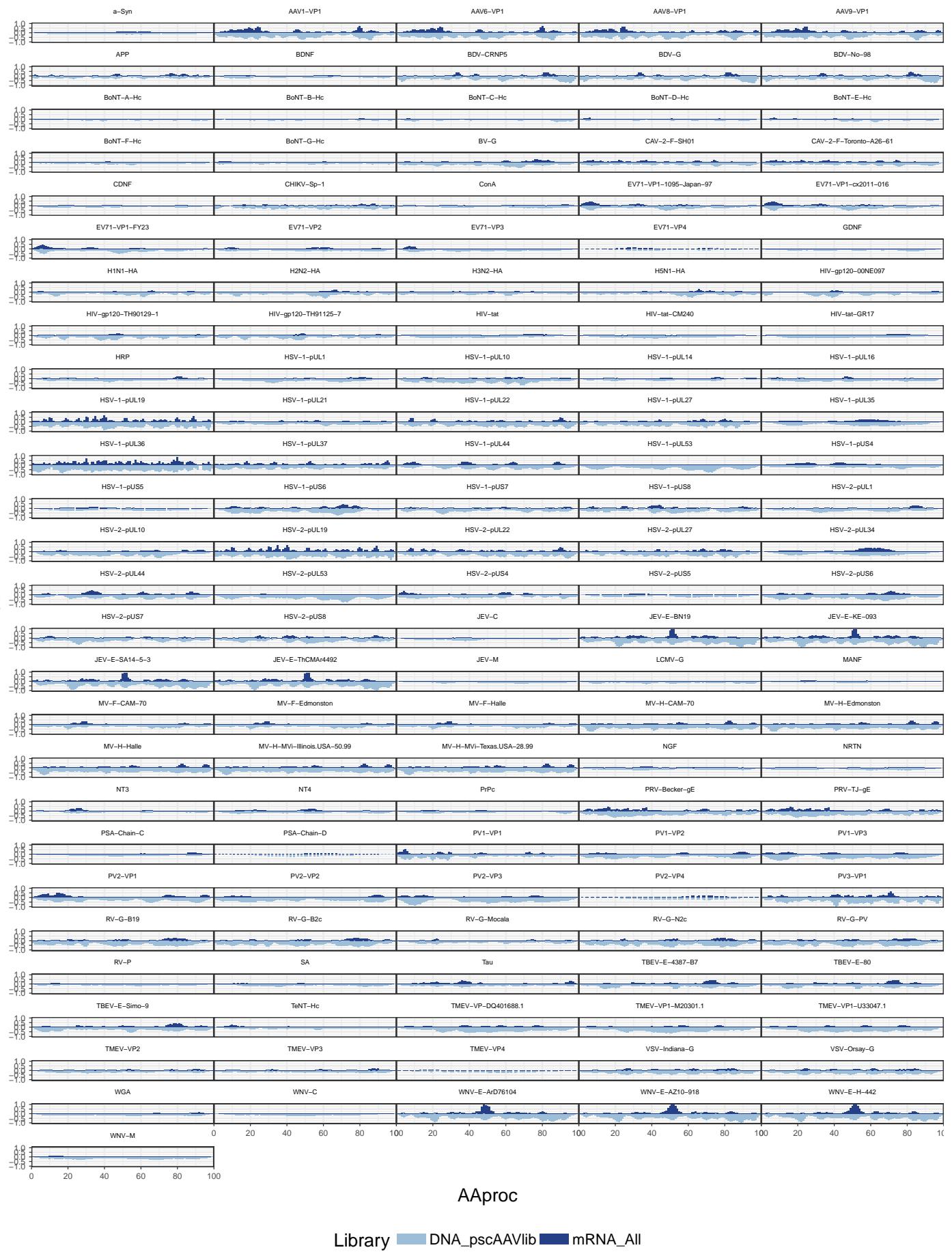
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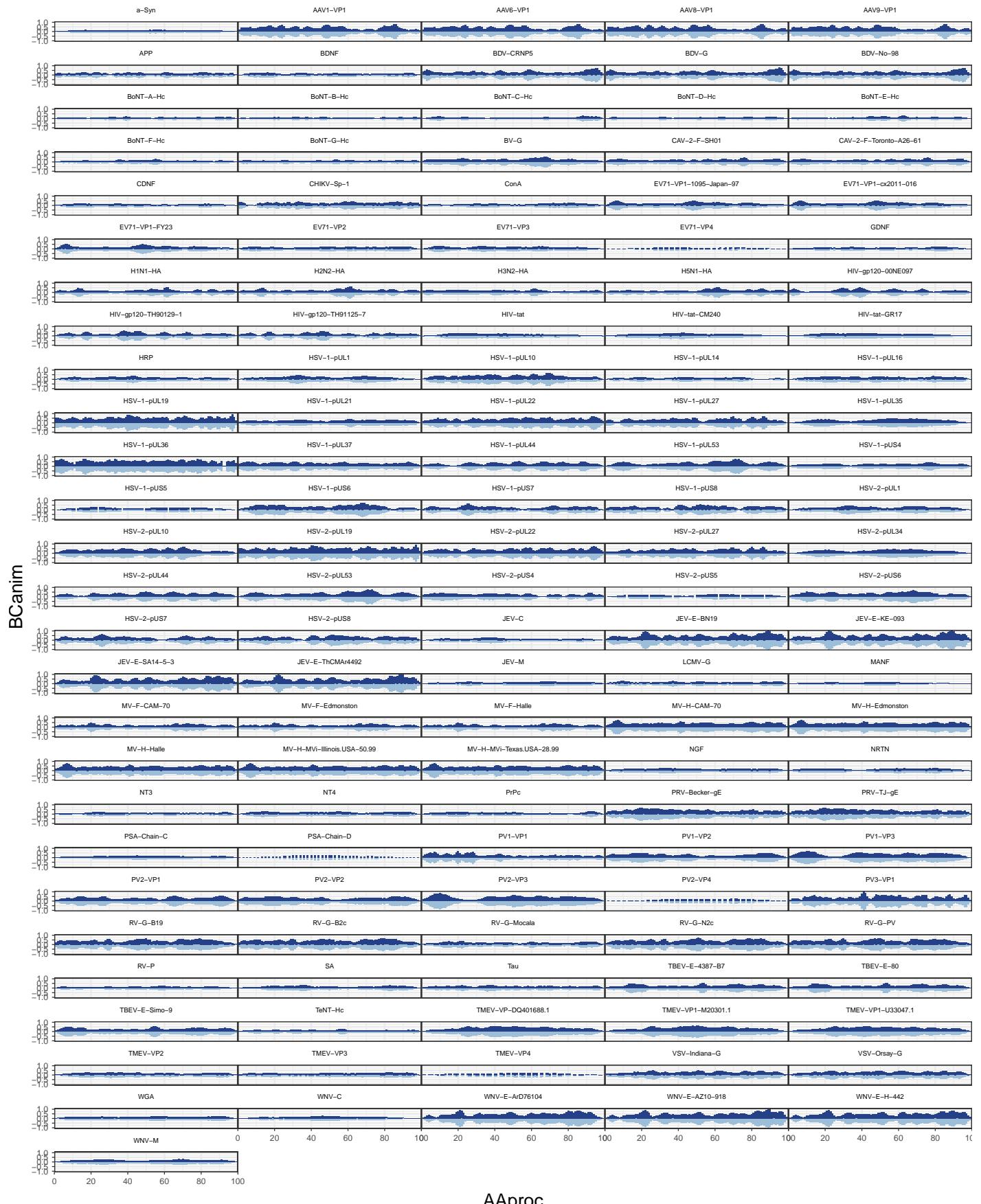


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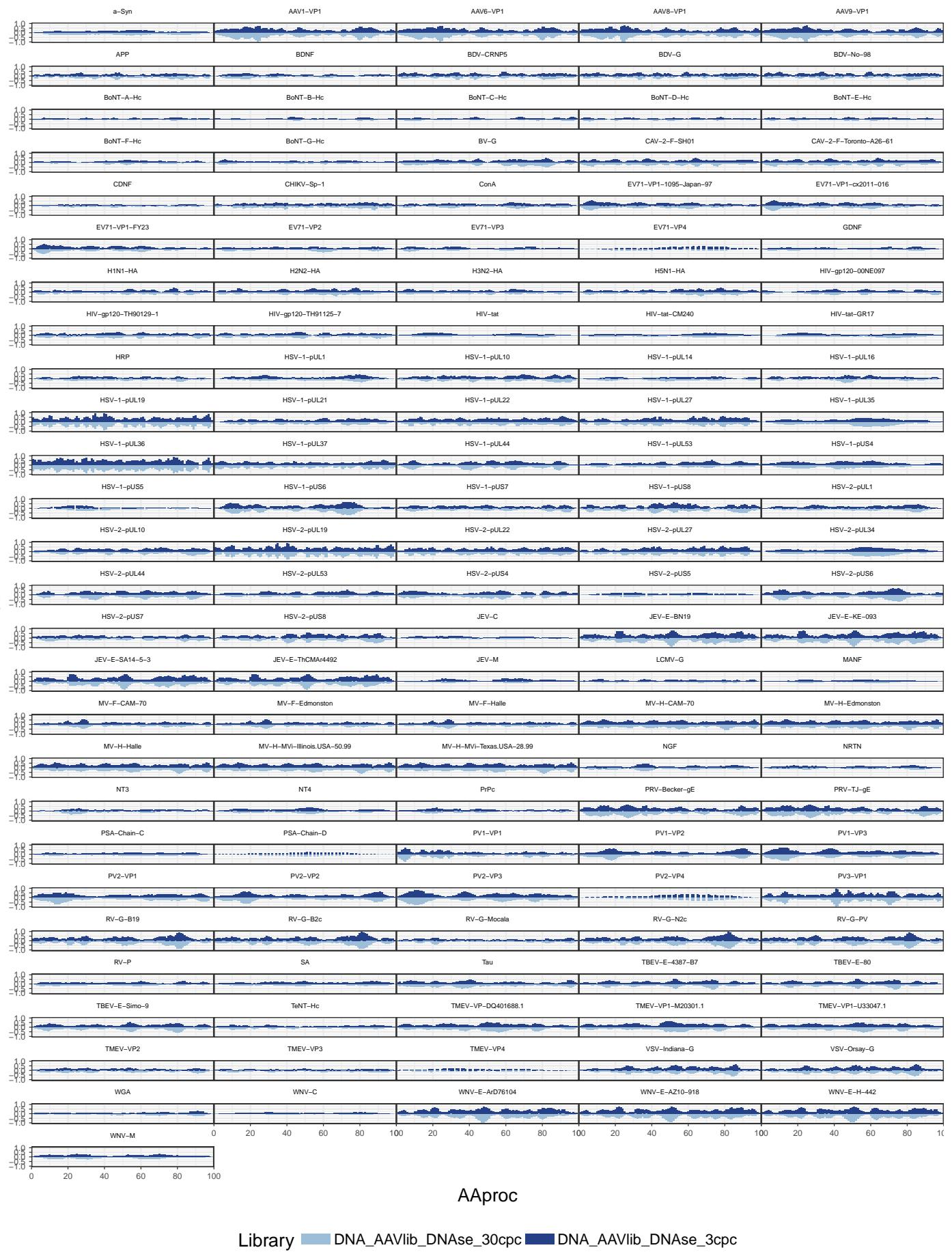


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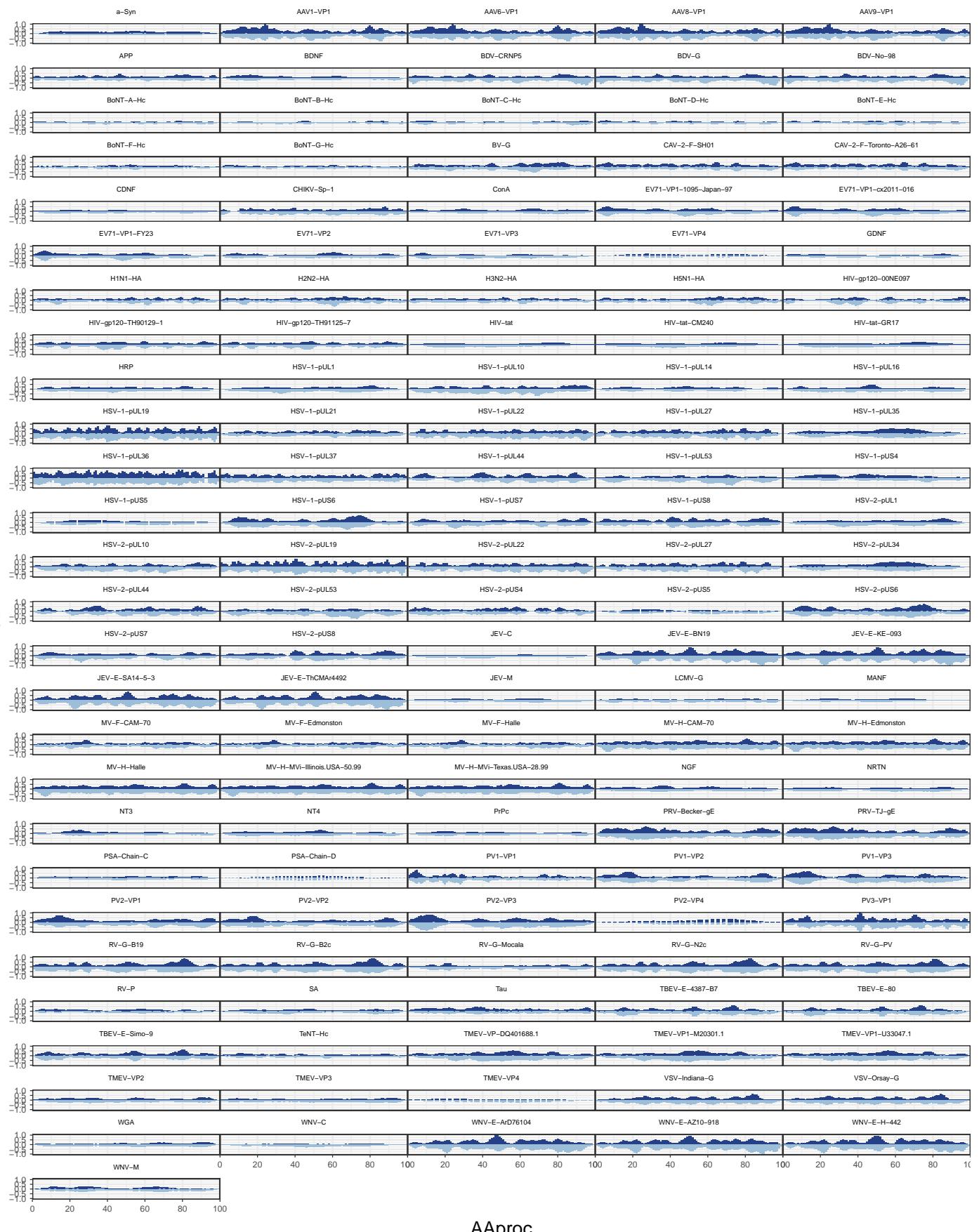


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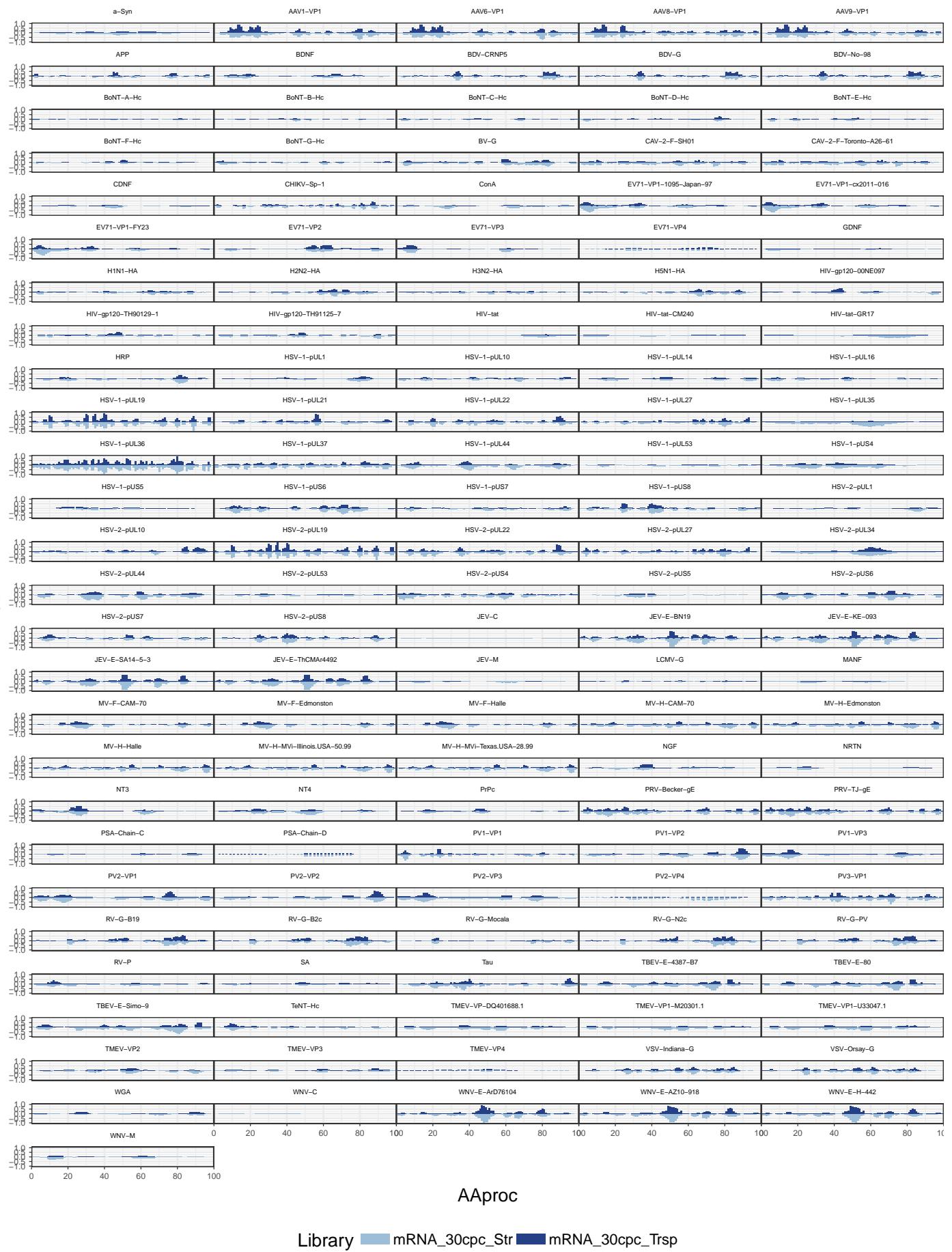
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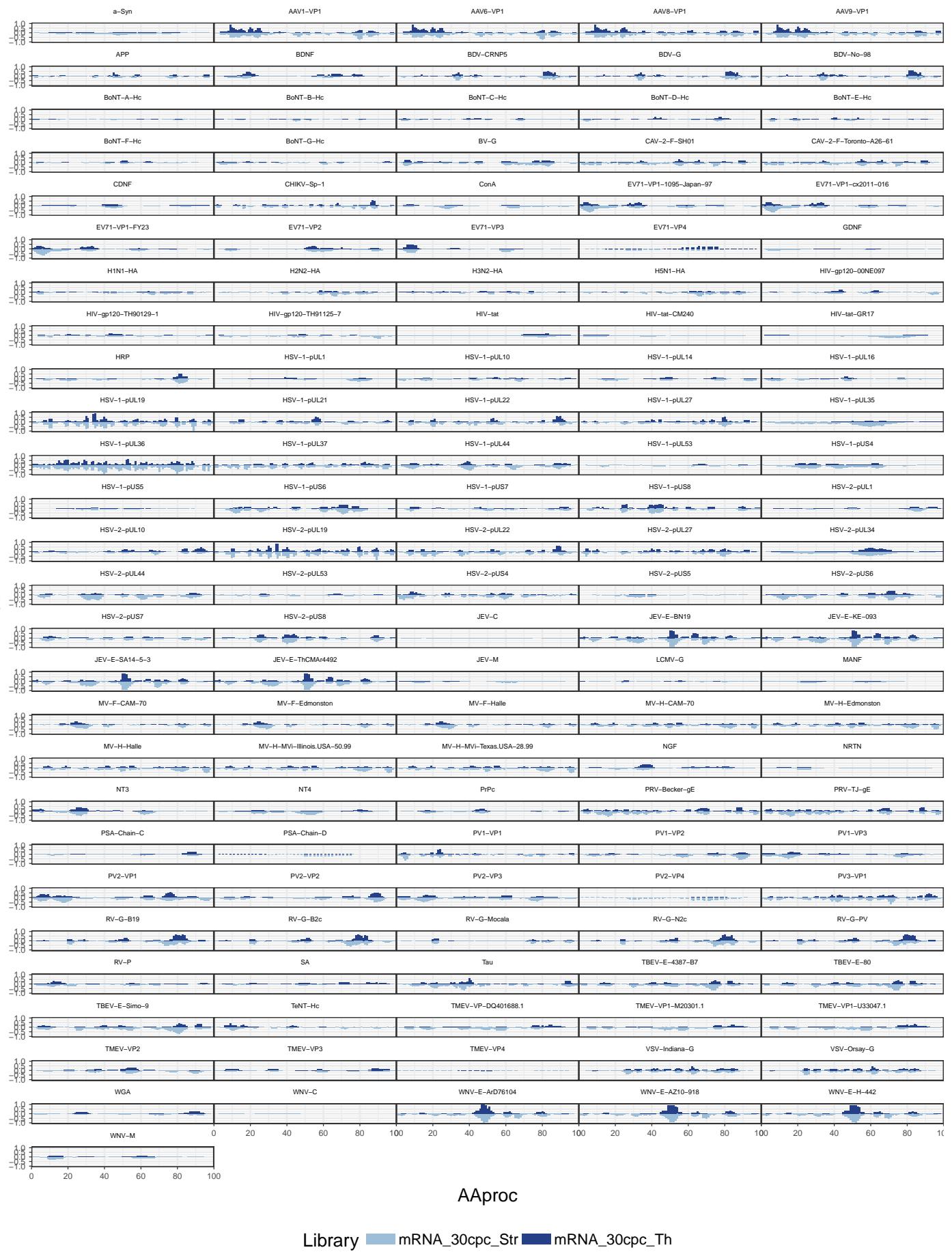
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mRNA_30cpc_Trsp	AA	NormCount	BCcount	AnimalCount	LUTnrs	mainStruct	mismatches	BCanim
HSV-1-pUL22	750	336.55599	3	9	X23667,X66790	14aa,22aa	2.000	27
HSV-1-pUS6	282	170.63858	3	9	X10394,X22271	14aa,22aa	0.500	27
HSV-2-pUL10	395	155.45120	3	9	X35006,X54361,X85651	14aa,14aaA5,14aaG4S	0.000	27
AAV1-VP1	105	98.95678	3	9	X1081,X43336	14aa,22aa	1.625	27
HSV-1-pUL21	309	144.56573	4	6	X27207	14aa	3.000	24
HIV-gp120-00NE097	161	150.50206	3	8	X14423,X66291	14aa,22aa	0.500	24
AAV1-VP1	80	97.28324	3	8	X31578,X53462,X84751	14aa,14aaA5,14aaG4S	0.000	24
HSV-1-pUL21	82	143.96310	3	7	X27483	14aa	0.500	21
EV71-VP3	23	124.77609	3	7	X47355,X8142	14aa,14aaA5	0.750	21
AAV1-VP1	151	189.89519	3	6	X25958,X25959	14aa	1.500	18
HSV-1-pUL19	426	171.52088	3	6	X18063,X28277	14aa,22aa	0.500	18
PV1-VP2	246	143.15377	3	6	X40367,X66448	14aa	0.750	18
PV1-VP1	230	87.94987	3	6	X42697,X78705,X8350	14aa,14aaG4S	1.000	18
HSV-1-pUL27	405	203.30587	2	9	X1574	14aa	0.000	18
JEV-E-BN19	261	67.11198	4	4	X13674,X18847,X18855	22aa	0.000	16
Tau	487	129.92661	3	5	X11521	14aa	0.000	15
PV1-VP2	243	115.34427	3	5	X22754,X28523	14aa,22aa	0.500	15
HSV-1-pUL19	789	113.88331	3	5	X24782,X26450	14aa,22aa	0.250	15
HSV-1-pUL14	107	93.09244	3	5	X23530	14aa	0.000	15
HSV-1-pUL36	1702	86.35900	3	5	X2210	14aa	1.000	15
BoNT-C-Hc	200	78.36035	3	5	X15439	14aa	3.000	15
HSV-1-pUL19	425	75.33421	3	5	X41345,X87279	14aa,14aaG4S	0.500	15
HSV-1-pUL27	669	57.05321	3	5	X42897,X43062	14aa	0.500	15
HSV-1-pUL19	417	53.83147	3	5	X1332,X32520	14aa,22aa	0.875	15
HSV-1-pUS6	309	45.45509	3	5	X23162,X42520	14aa,22aa	1.250	15
MV-F-CAM-70	134	143.97129	2	7	X57985,X89275	14aaA5,14aaG4S	1.000	14
NT3	59	127.53596	2	7	X26899	14aa	1.500	14
CHIKV-Sp-1	1097	125.48095	2	7	X34522	14aa	0.500	14
HSV-2-pUS4	62	119.02586	2	7	X31351	14aa	0.000	14
HSV-1-pUS8	56	103.20071	2	7	X50679,X81969	14aaA5,14aaG4S	0.750	14
HSV-1-pUL22	735	85.82557	2	7	X63395,X63396	14aa	0.000	14
BV-G	238	91.81466	3	4	X24363	14aa	0.000	12
HSV-1-pUL36	3050	72.24083	3	4	X53113	14aaA5	1.000	12
PSA-Chain-D	33	69.76798	3	4	X40186	14aa	0.000	12
HSV-1-pUL36	1091	69.21152	3	4	X32408,X84965	14aa,14aaG4S	2.500	12
SA	123	66.93076	3	4	X13273	14aa	0.000	12
TMEV-VP2	144	63.24634	3	4	X39754	22aa	0.000	12
PRV-Becker-gE	149	60.07497	3	4	X58599,X89889	14aaA5,14aaG4S	0.750	12
AAV1-VP1	107	55.42750	3	4	X60663,X75117	14aa,14aaA5	1.250	12
HSV-1-pUL19	1350	54.54312	3	4	X30498,X30499	14aa	0.250	12

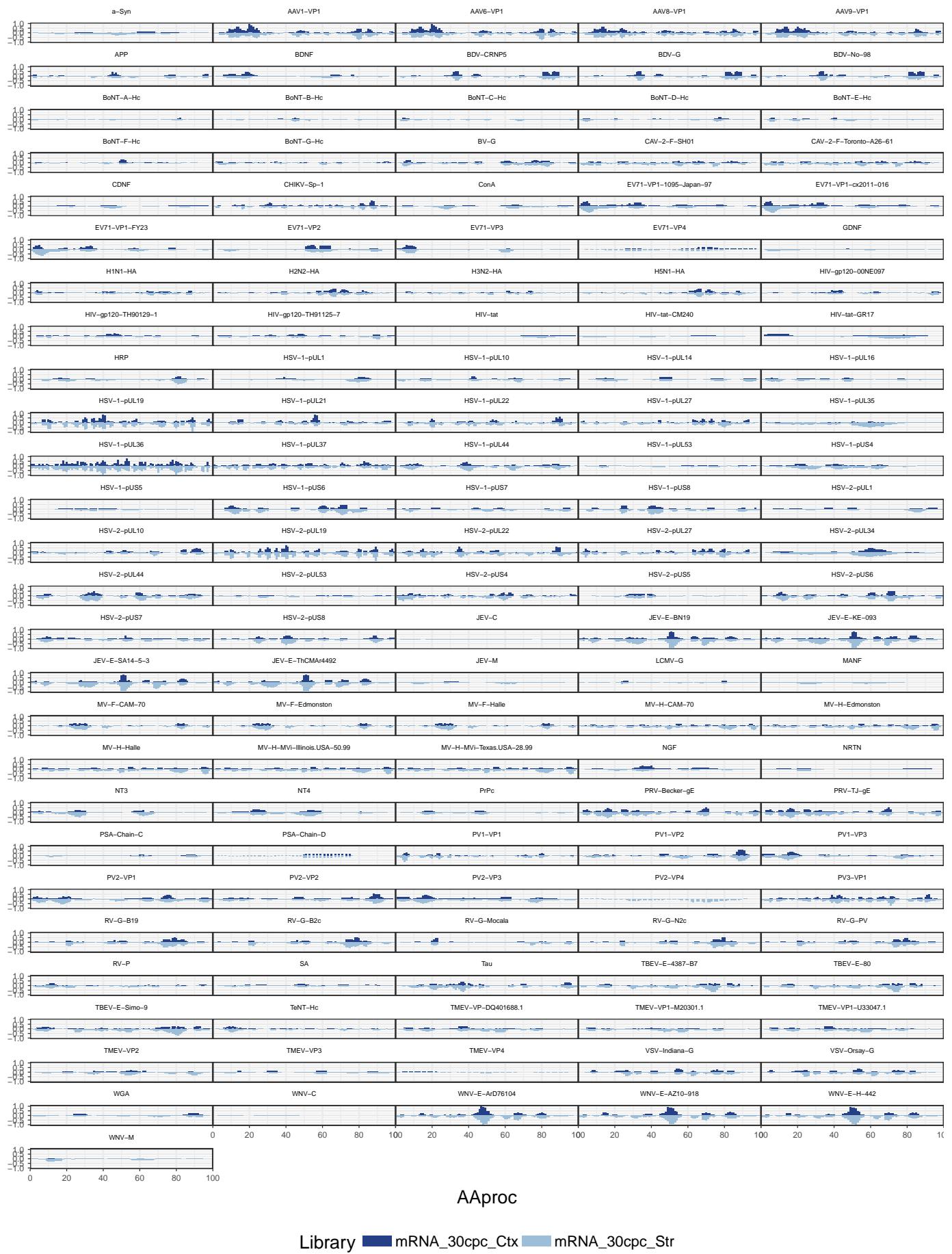
mRNA_30cpc_Str	AA	NormCount	BCcount	AnimalCount	LUTnrs	mainStruct	mismatches	BCanim
JEV-E-BN19	261	149.75457	12	3	X13674,X18847,X18855,X42671,X42673	14aa,22aa	0.000	36
HSV-1-pUL19	147	110.48145	9	3	X40382,X40383	22aa	0.500	27
PV1-VP1	61	182.88622	8	3	X22826,X22827	14aa	0.750	24
HSV-2-pUL10	432	167.52293	8	3	X38890	14aa	0.750	24
WNV-M	23	148.72693	8	3	X40365	14aa	0.000	24
AAV1-VP1	177	132.24473	8	3	X23308,X26310,X26311	14aa,22aa	1.000	24
HSV-1-pUL19	426	130.86368	8	3	X18063,X28276,X28277	14aa,22aa	0.000	24
JEV-E-BN19	348	127.42373	8	3	X13624,X13625,X13626,X67130	14aa,22aa	0.000	24
HSV-2-pUS4	62	111.68901	8	3	X31351,X53390	14aa,14aaA5	0.500	24
HSV-1-pUL19	417	99.20352	8	3	X1332,X1375,X32520,X32522	14aa,22aa	0.125	24
JEV-E-BN19	257	80.02718	8	3	X18848,X18854,X18856,X50148,X81438,X81439	14aa,14aaA5,14aaG4S	0.125	24
CAV-2-F-SH01	413	79.28116	8	3	X57923,X57924,X64694,X64696,X89213	14aa,14aaA5,14aaG4S	1.000	24
Tau	258	180.30252	7	3	X11013	14aa	0.000	21
HSV-1-pUL36	1808	146.18703	7	3	X27290,X83604	14aa,14aaG4S	0.500	21
HSV-1-pUL36	2687	130.53998	7	3	X22900,X51171	14aa,14aaA5	0.875	21
NRTN	42	106.95035	7	3	X27177,X31910	14aa,22aa	2.000	21
AAV1-VP1	593	105.10283	7	3	X10626,X10628,X48025,X48026	14aa,14aaA5	0.000	21
RV-G-Mocala	380	103.33519	7	3	X15453,X49294	14aa,14aaA5	0.250	21
AAV1-VP1	594	100.59174	7	3	X10606,X10607,X1625,X2938	14aa,22aa	1.250	21
HSV-1-pUL19	425	94.61652	7	3	X41345,X41347,X55989	14aa,14aaA5	0.750	21
NT3	68	88.37553	7	3	X25281,X51761	14aa,14aaA5	1.500	21
Tau	253	87.93997	7	3	X13281	14aa	0.000	21
HSV-1-pUL19	540	81.57799	7	3	X19289,X37753	14aa,22aa	0.000	21
MV-H-Edmonston	593	81.53251	7	3	X42886,X56376	14aa,14aaA5	1.500	21
EV71-VP3	149	77.96254	7	3	X30132,X53081,X84371	14aa,14aaA5,14aaG4S	0.000	21
AAV1-VP1	107	76.56444	7	3	X60662,X60663,X75117,X91953	14aa,14aaA5,14aaG4S	0.750	21
HSV-1-pUL14	107	120.73570	6	3	X23530	14aa	0.000	18
HSV-1-pUL19	424	114.16045	6	3	X43511	14aa	1.000	18
JEV-E-BN19	258	105.87153	6	3	X13673,X13675,X40166,X80121	14aa,14aaG4S,22aa	0.000	18
HSV-1-pUL19	273	104.75374	6	3	X18041,X22412,X22413	14aa,22aa	1.000	18
HRP	257	103.75275	6	3	X38318,X86475	14aa,14aaG4S	0.250	18
HSV-1-pUS6	56	102.56628	6	3	X58760,X58761,X67836,X90050	14aa,14aaA5,14aaG4S	1.750	18
VSV-Indiana-G	143	100.86707	6	3	X47359,X8158,X8159	14aa,14aaA5	1.500	18
HSV-2-pUL19	762	100.79206	6	3	X25455	14aa	1.000	18
TBEV-E-4387-B7	351	99.58750	6	3	X15491,X44593	14aa,22aa	0.750	18
HRP	258	97.05560	6	3	X12450,X33533	14aa,22aa	1.000	18
HSV-1-pUL19	566	96.76591	6	3	X24018,X24021,X82731	14aa,14aaG4S	0.500	18
Tau	656	95.25608	6	3	X11612,X48295	14aa,14aaA5	1.500	18
EV71-VP1-1095-Japan-97	15	92.18160	6	3	X16069,X68716	14aa,22aa	1.250	18
HSV-1-pUL19	1112	91.65176	6	3	X58031,X58032,X65106	14aa,14aaA5	1.000	18
JEV-E-BN19	349	89.10987	6	3	X68553,X68554,X68556,X90237	14aa,14aaG4S	0.125	18
PSA-Chain-D	33	88.79146	6	3	X40186	14aa	0.000	18
HSV-1-pUL19	1220	88.31447	6	3	X59241,X69674	14aa,14aaA5	0.000	18
HSV-1-pUS6	284	86.97783	6	3	X30911,X30913,X53288,X53289,X84578	14aa,14aaA5,14aaG4S	0.500	18
HSV-1-pUL36	2517	86.28829	6	3	X42996,X7412	14aa,22aa	0.625	18
HSV-1-pUL19	1355	84.30567	6	3	X36146,X45865,X77155	14aa,14aaA5,14aaG4S	1.000	18
HSV-1-pUL44	450	82.07083	6	3	X26530,X83398	14aa,14aaG4S	0.750	18

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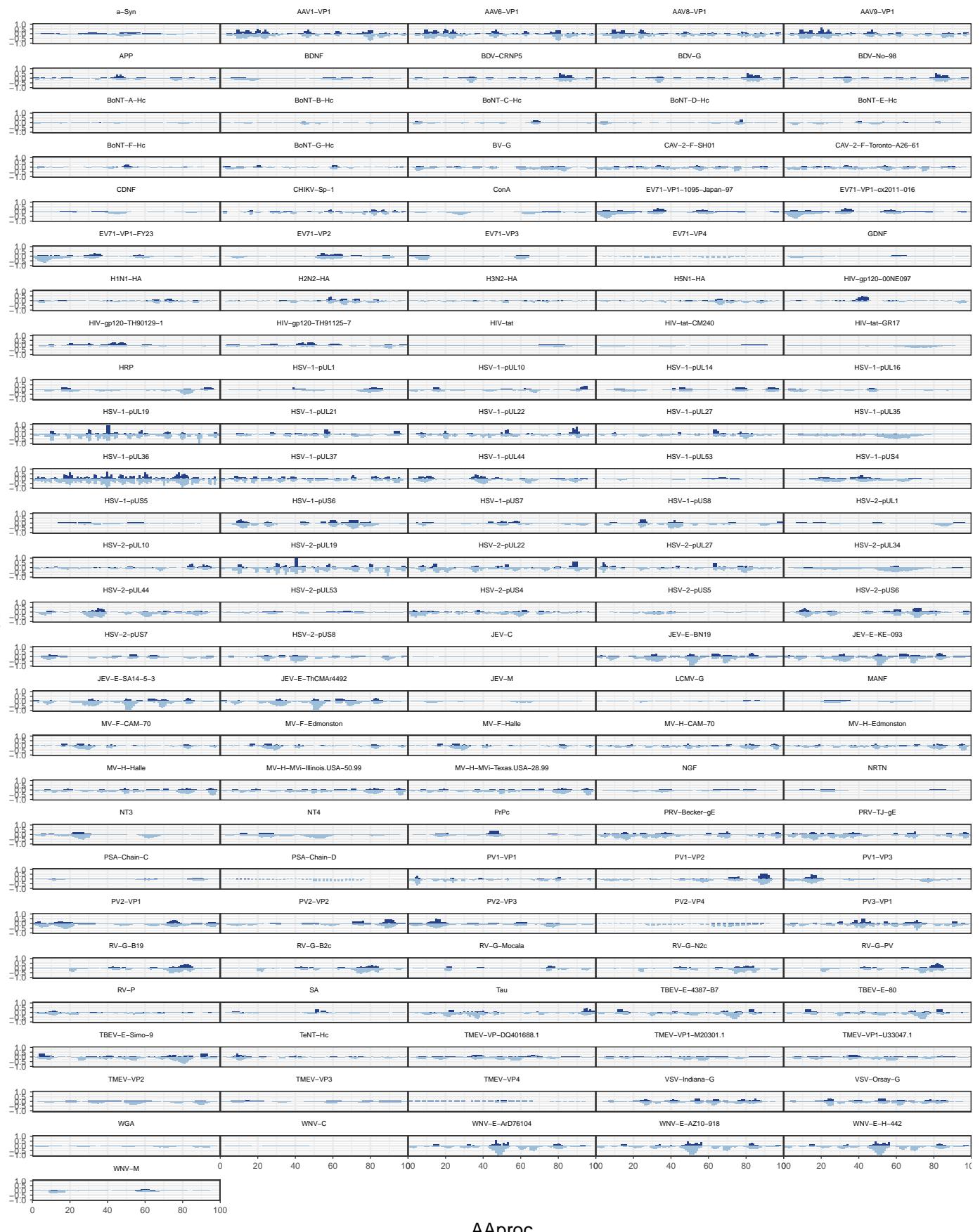
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HSV-1-pUL21	82	63.97800	3	3	X27483	14aa	0.75	9
HSV-1-pUS6	282	60.26591	3	3	X10394,X22271	14aa,22aa	0.50	9
EV71-VP3	23	49.25185	3	3	X47355,X8142	14aa,14aaA5	0.75	9
HSV-1-pUL22	750	46.49370	3	3	X23667,X66790	14aa,22aa	1.75	9
AAV1-VP1	80	32.48528	3	3	X31578,X53462,X84751	14aa,14aaA5,14aaG4S	0.00	9
JEV-E-BN19	261	35.05680	4	2	X13674,X18847,X18855	22aa	0.50	8
AAV1-VP1	151	66.03702	3	2	X25958,X25959	14aa	1.50	6
TMEV-VP2	144	37.92619	3	2	X39754	22aa	0.00	6
HSV-1-pUL27	669	23.17816	3	2	X42897,X43062	14aa	0.50	6
HSV-1-pUL27	405	62.49015	2	3	X1574	14aa	0.00	6
CHIKV-Sp-1	1097	47.05060	2	3	X34522	14aa	0.50	6
HRP	250	46.00842	2	3	X63143	14aa	0.00	6
BDNF	158	42.16045	2	3	X84727	14aaG4S	0.50	6
PV1-VP1	230	41.12631	2	3	X78705,X8350	14aa,14aaG4S	0.75	6
AAV1-VP1	105	28.38826	2	3	X1081,X43336	14aa,22aa	1.50	6
HSV-2-pUL10	395	28.16743	2	3	X35006,X54361	14aa,14aaA5	0.50	6
BDV-CRNP5	416	19.93301	2	3	X46864,X53375	14aaA5	2.25	6
HSV-1-pUL37	927	65.70792	2	2	X43814	14aa	0.50	4
BDV-CRNP5	419	44.56444	2	2	X40857,X87144	14aa,14aaG4S	0.25	4
WNV-E-AZ10-918	237	39.04684	2	2	X10815	22aa	0.00	4
CHIKV-Sp-1	1088	37.09374	2	2	X44622,X56814	14aa,14aaA5	0.00	4
Tau	104	34.33951	2	2	X16497,X49559	14aa,14aaA5	0.75	4
VSV-Indiana-G	215	33.27654	2	2	X36144	14aa	1.00	4
AAV1-VP1	81	32.19009	2	2	X43758,X43759	22aa	2.50	4
PSA-Chain-C	158	30.88018	2	2	X13960	14aa	2.50	4
HIV-gp120-00NE097	161	30.73112	2	2	X14423,X66291	14aa,22aa	0.50	4
HRP	259	30.39647	2	2	X74767	14aa	0.25	4
HSV-2-pUS4	62	30.38032	2	2	X31351	14aa	0.25	4
HSV-1-pUL36	649	29.76911	2	2	X26789	14aa	0.50	4
RV-G-B19	395	29.73577	2	2	X17334,X53447	14aaA5,22aa	0.25	4
HSV-1-pUS4	53	29.51257	2	2	X38804,X86598	14aa,14aaG4S	0.50	4
HSV-2-pUL44	49	27.77817	2	2	X9950	14aa	1.00	4
HSV-1-pUL19	426	27.75077	2	2	X18063	14aa	0.00	4
HSV-2-pUL19	477	27.68301	2	2	X35980	14aa	3.00	4
HSV-1-pUL19	476	27.65405	2	2	X58843,X68179	14aa,14aaA5	1.50	4
PV2-VP2	242	27.15214	2	2	X22728,X82417	14aa,14aaG4S	0.50	4
BoNT-C-Hc	200	26.96828	2	2	X15439	14aa	1.50	4
HSV-1-pUL27	658	26.75853	2	2	X38689	14aa	0.50	4
HSV-1-pUL36	1659	26.58116	2	2	X25291,X31307	14aa,22aa	0.00	4
HSV-1-pUL14	107	26.57651	2	2	X23530	14aa	0.00	4
PV-C	28	25.68221	2	2	X44169	14aa	1.00	4

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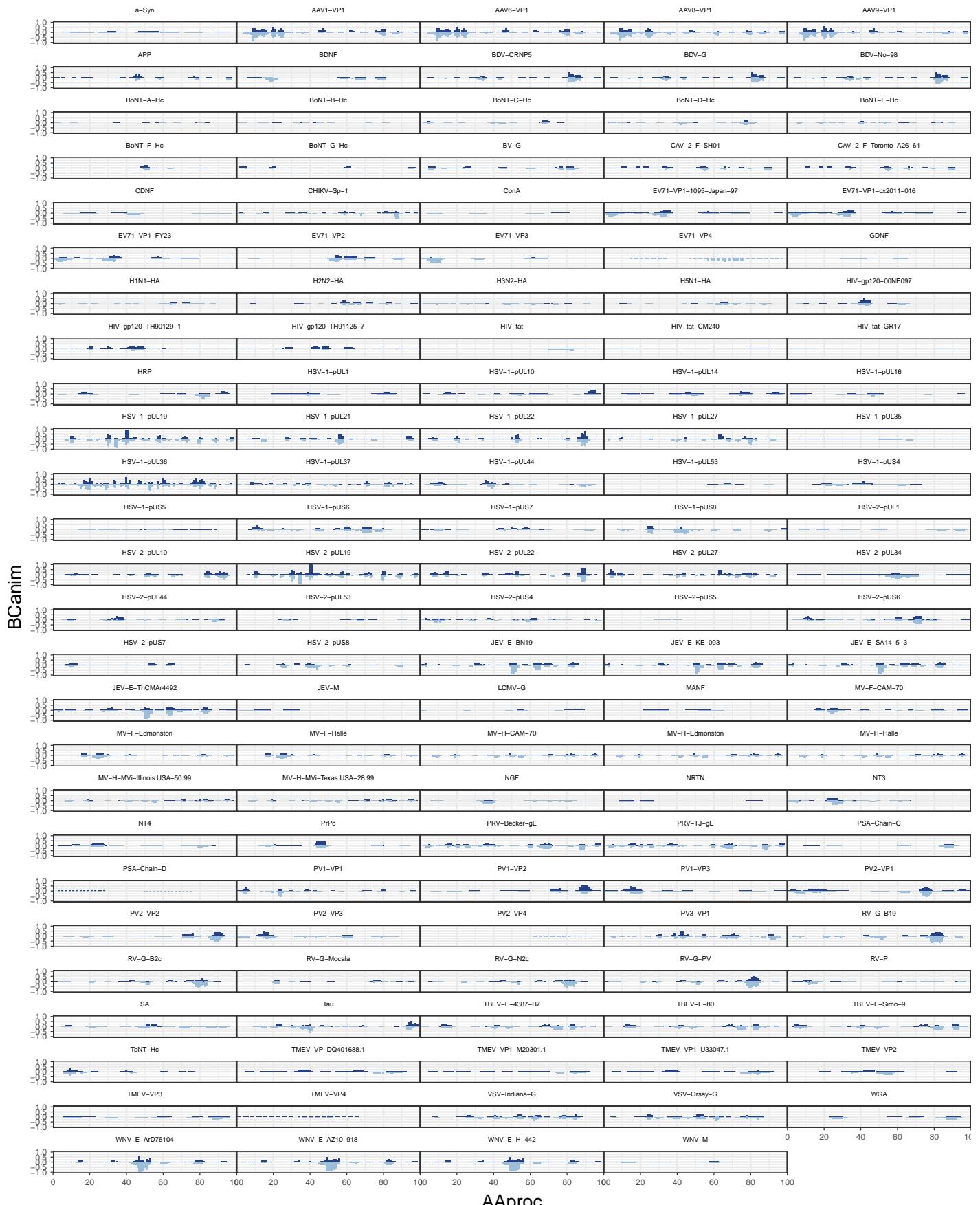


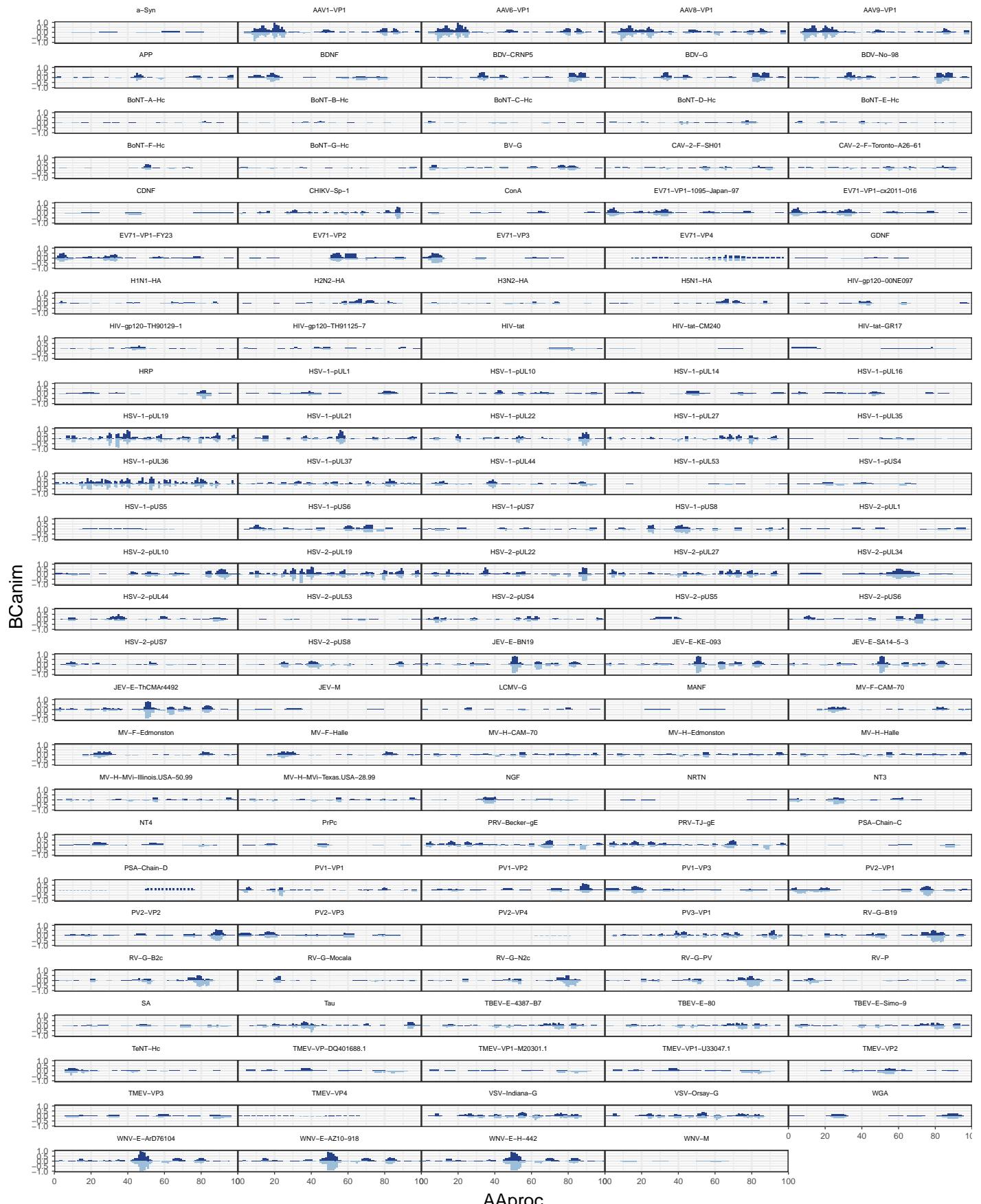
mRNA_30cpc_Ctx	AA	NormCount	BCcount	AnimalCount	LUTnrs	mainStruct	mismatches	BCanim
HSV-1-pUL22	750	111.81378	3	3	X23667,X66790	14aa,22aa	1.75	9
HSV-2-pUL10	395	42.65047	3	3	X35006,X54361,X85651	14aa,14aaA5,14aaG4S	0.00	9
HSV-1-pUL21	82	22.34252	3	3	X27483	14aa	0.75	9
AAV1-VP1	151	39.57467	3	2	X25958,X25959	14aa	1.50	6
Tau	487	38.38665	3	2	X11521	14aa	0.00	6
PV1-VP2	243	26.98110	3	2	X22754,X28523	14aa,22aa	0.50	6
HSV-1-pUL36	3050	17.97941	3	2	X53113	14aaaA5	1.00	6
HSV-1-pUL14	107	16.75689	3	2	X23530	14aa	0.00	6
HSV-1-pUL27	669	14.09075	3	2	X42897,X43062	14aa	0.50	6
HSV-1-pUL36	2532	13.54842	3	2	X23791,X41564	14aa,22aa	1.25	6
HSV-1-pUL27	405	32.68687	2	3	X1574	14aa	0.00	6
HSV-2-pUS4	62	23.64996	2	3	X31351	14aa	0.00	6
CHIKV-Sp-1	1097	22.34252	2	3	X34522	14aa	0.50	6
HSV-1-pUS6	282	22.34252	2	3	X10394	14aa	0.00	6
AAV1-VP1	80	14.09075	2	3	X53462,X84751	14aaaA5,14aaG4S	2.50	6
HSV-1-pUL19	789	51.86785	2	2	X24782	22aa	0.00	4
MV-F-CAM-70	134	47.93424	2	2	X57985,X89275	14aaaA5,14aaG4S	1.00	4
HSV-1-pUL19	426	44.81269	2	2	X18063,X28277	14aa,22aa	0.50	4
HSV-2-pUL34	74	41.24429	2	2	X47029,X6900	14aa,14aaaA5	0.25	4
AAV1-VP1	144	32.58864	2	2	X38647	22aa	0.00	4
PRV-Becker-gE	149	28.99700	2	2	X58599	14aaaA5	0.00	4
HSV-1-pUL37	285	28.96177	2	2	X35753	22aa	0.00	4
HSV-1-pUL21	309	27.99031	2	2	X27207	14aa	3.00	4
WNV-E-AZ10-918	237	23.83739	2	2	X10815	22aa	0.00	4
PV1-VP1	774	23.64996	2	2	X9983	22aa	0.50	4
HSV-1-pUL37	927	23.35267	2	2	X43814	14aa	1.00	4
PRV-Becker-gE	150	23.03343	2	2	X23215	14aa	0.00	4
VSV-Indiana-G	215	22.92156	2	2	X36144	14aa	0.00	4
NT4	47	22.44272	2	2	X31713	14aa	0.50	4
HSV-1-pUL22	735	21.69315	2	2	X63395,X63396	14aa	0.00	4
HSV-1-pUS4	53	21.61067	2	2	X38804,X86598	14aa,14aaG4S	0.50	4
EV71-VP1-1095-Japan-97	93	21.43341	2	2	X14147,X27284	14aa,22aa	0.50	4
HSV-1-pUS8	225	21.13990	2	2	X18219,X23254	14aa,22aa	0.00	4
CHIKV-Sp-1	1026	20.29650	2	2	X10127,X25004	14aa,22aa	0.25	4
RV-G-B19	395	19.73382	2	2	X17334,X53447	14aaaA5,22aa	0.25	4
CHIKV-Sp-1	1088	19.08564	2	2	X44622,X56814	14aa,14aaaA5	0.00	4
HIV-tat-GR17	10	17.60899	2	2	X23922	14aa	0.00	4
HSV-1-pUL36	1067	17.50156	2	2	X35298,X54428	14aa,14aaaA5	0.50	4
HSV-1-pUL22	764	17.35892	2	2	X18980,X81477	14aa,14aaG4S	1.50	4
HSV-1-pUL27	658	17.20388	2	2	X38689	14aa	1.00	4
HSV-2-pUL10	429	17.20288	2	2	X25745	22aa	0.50	4

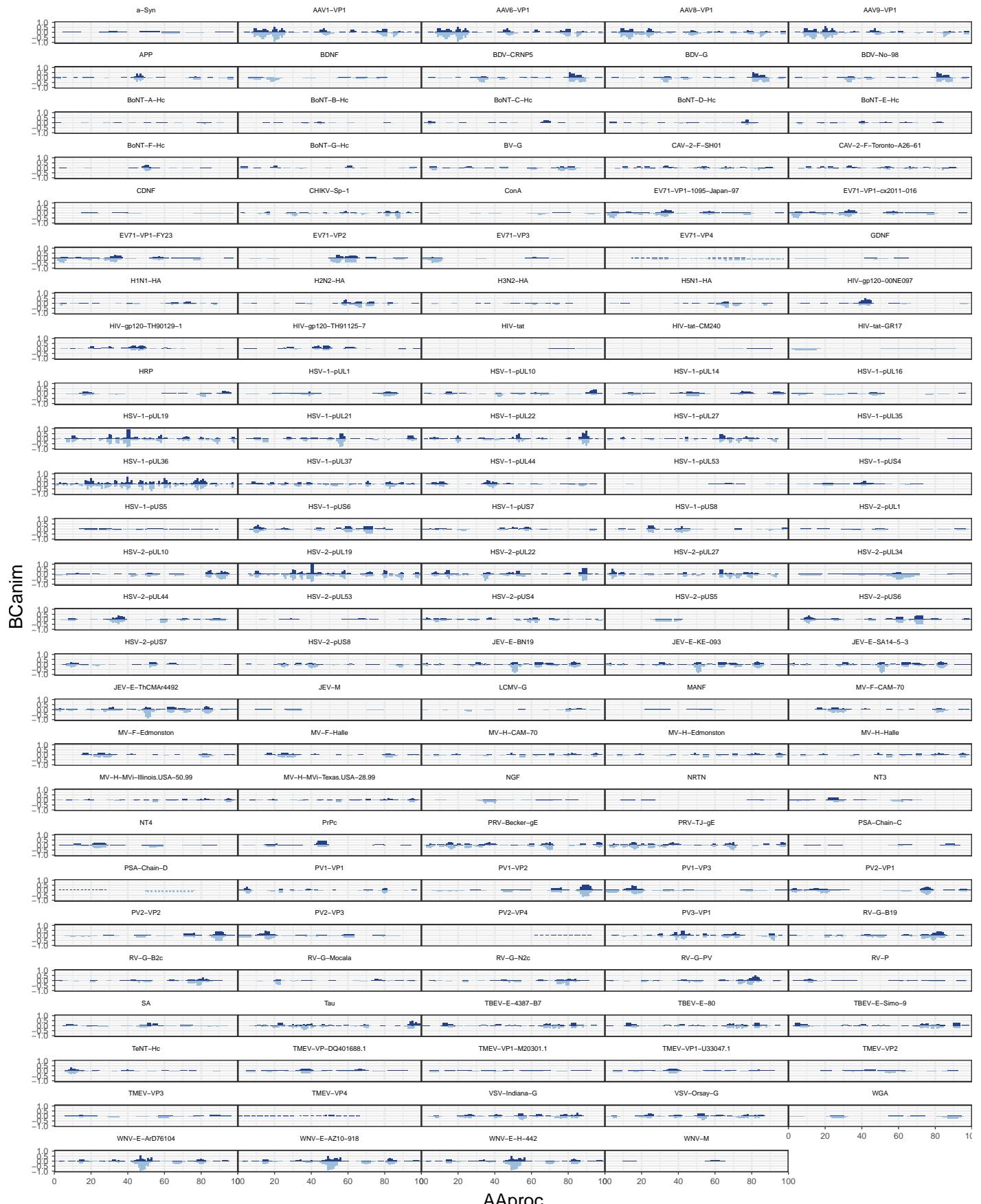
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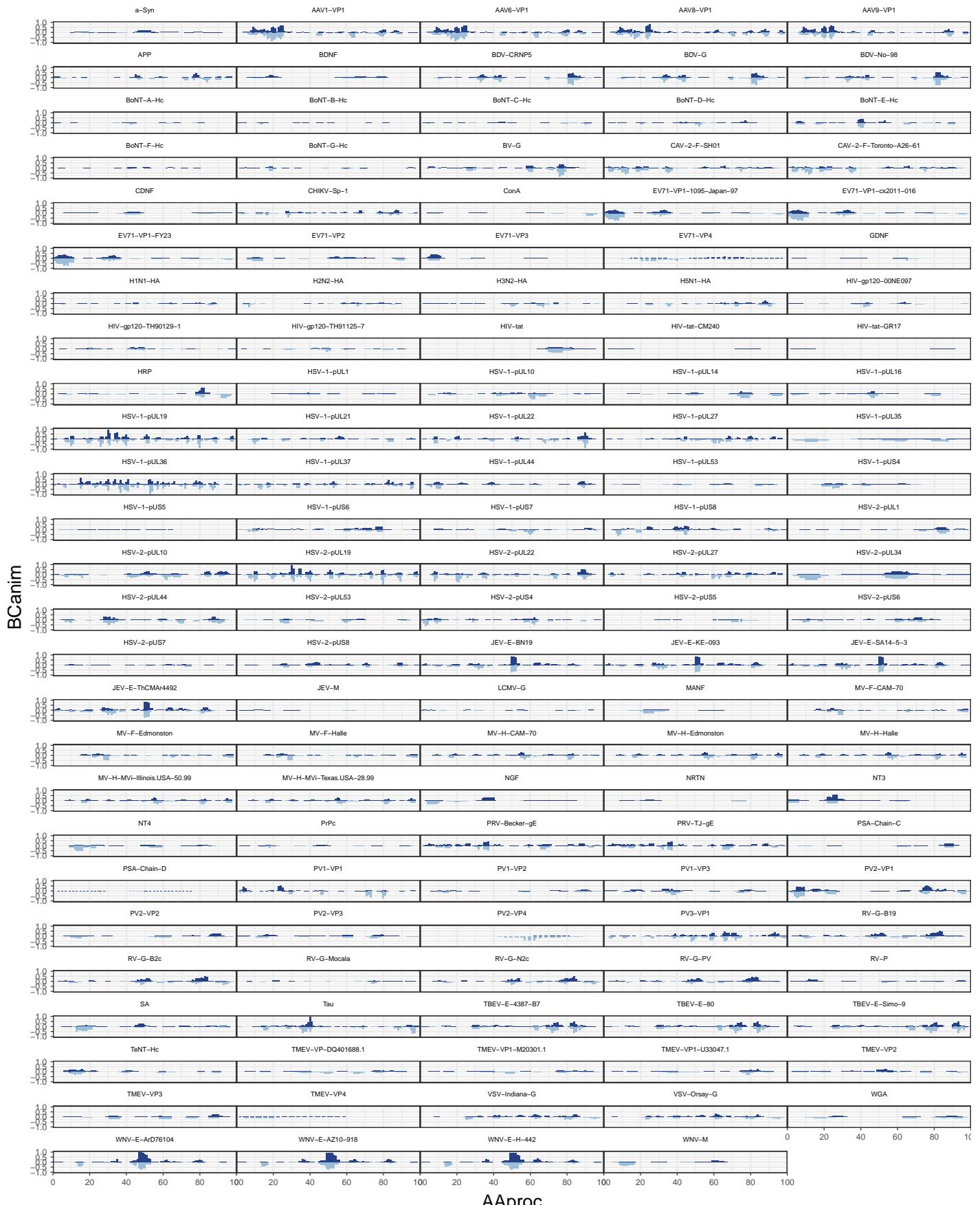
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HSV-1-pUL21	309	64.184054	3	2	X27207	14aa	2.25	6
HSV-1-pUL19	426	30.844566	3	2	X18063,X28277	14aa,22aa	0.50	6
HSV-1-pUL27	405	40.887409	2	3	X1574	14aa	0.00	6
HIV-gp120-00NE097	161	18.655803	2	3	X14423,X66291	14aa,22aa	0.50	6
HSV-2-pUL10	395	17.530562	2	3	X35006,X54361	14aa,14aaaA5	0.50	6
HSV-1-pUL22	735	16.736092	2	3	X63395,X63396	14aa	0.00	6
HSV-1-pUS6	282	16.431969	2	3	X10394	14aa	0.00	6
BoNT-G-Hc	17	53.817918	2	2	X27569	14aa	0.50	4
AAV1-VP1	594	45.934493	2	2	X10606	14aa	1.00	4
PV1-VP1	774	43.908907	2	2	X9983	22aa	0.50	4
AAV1-VP1	151	36.776777	2	2	X25958,X25959	14aa	1.50	4
HSV-1-pUL36	2441	35.877398	2	2	X58700,X89990	14aaaA5,14aaaG4S	0.50	4
H1N1-HA	413	33.556771	2	2	X75725,X92115	14aa,14aaaG4S	0.50	4
HSV-2-pUS4	62	33.034273	2	2	X31351	14aa	0.25	4
BoNT-D-Hc	319	32.632793	2	2	X16784	14aa	1.50	4
BV-G	28	31.643610	2	2	X44169	14aa	1.00	4
HSV-1-pUL19	565	27.049687	2	2	X30373	14aa	0.75	4
EV71-VP2	186	19.944542	2	2	X21595,X50833	14aa,14aaaA5	2.00	4
BDV-CRNP5	416	19.455945	2	2	X46864,X53375	14aaaA5	2.25	4
BV-G	325	17.783686	2	2	X20610	14aa	0.00	4
AAV1-VP1	177	17.378279	2	2	X26310	14aa	0.00	4
PV1-VP2	246	16.431969	2	2	X40367	14aa	1.50	4
HSV-1-pUL36	2397	15.867891	2	2	X30247	14aa	0.00	4
PV1-VP2	243	15.463995	2	2	X22754,X28523	14aa,22aa	0.50	4
HSV-1-pUS8	542	15.219120	2	2	X25884	14aa	2.00	4
HIV-gp120-TH90129-1	209	14.525991	2	2	X59919,X72199	14aa,14aaaA5	0.75	4
HSV-1-pUL22	56	14.261355	2	2	X26612,X52129	14aa,14aaaA5	1.75	4
HSV-1-pUL37	104	11.270800	2	2	X41363,X87286	14aa,14aaaG4S	0.00	4
BoNT-C-Hc	305	10.146080	2	2	X1780	14aa	0.75	4
EV71-VP1-1095-Japan-97	102	9.637104	2	2	X30268	14aa	0.75	4
HSV-1-pUL27	582	9.637104	2	2	X24296	14aa	1.75	4
AAV1-VP1	469	9.018699	2	2	X33538	14aa	0.00	4
EV71-VP1-1095-Japan-97	106	9.018699	2	2	X61485	14aa	1.00	4
HRP	293	8.933826	2	2	X57002,X61103	14aa,14aaaA5	1.00	4
AAV1-VP1	80	8.624624	2	2	X31578,X84751	14aa,14aaaG4S	2.50	4
HSV-1-pUL19	845	8.080694	2	2	X47263,X7795	14aa,14aaaA5	0.25	4







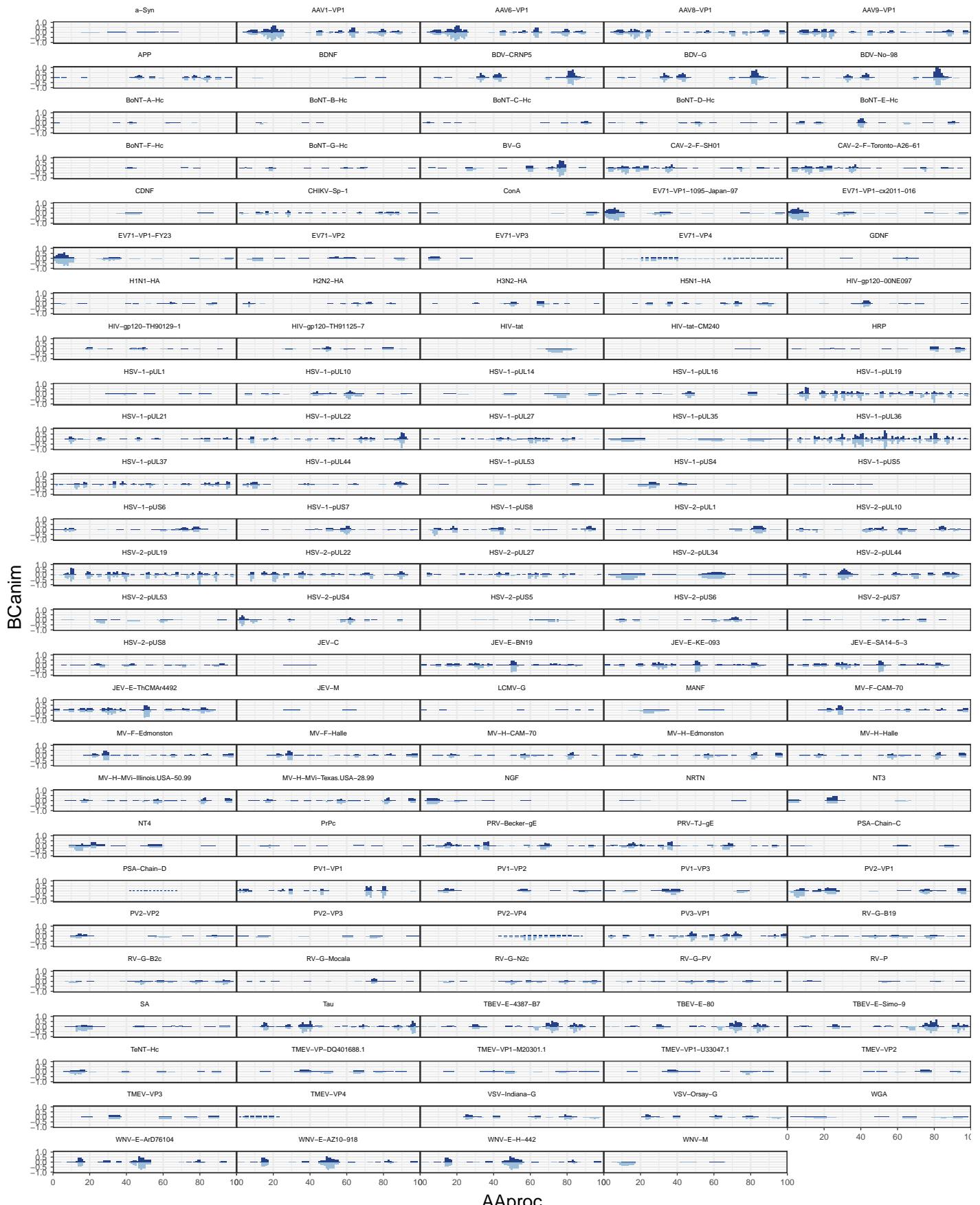
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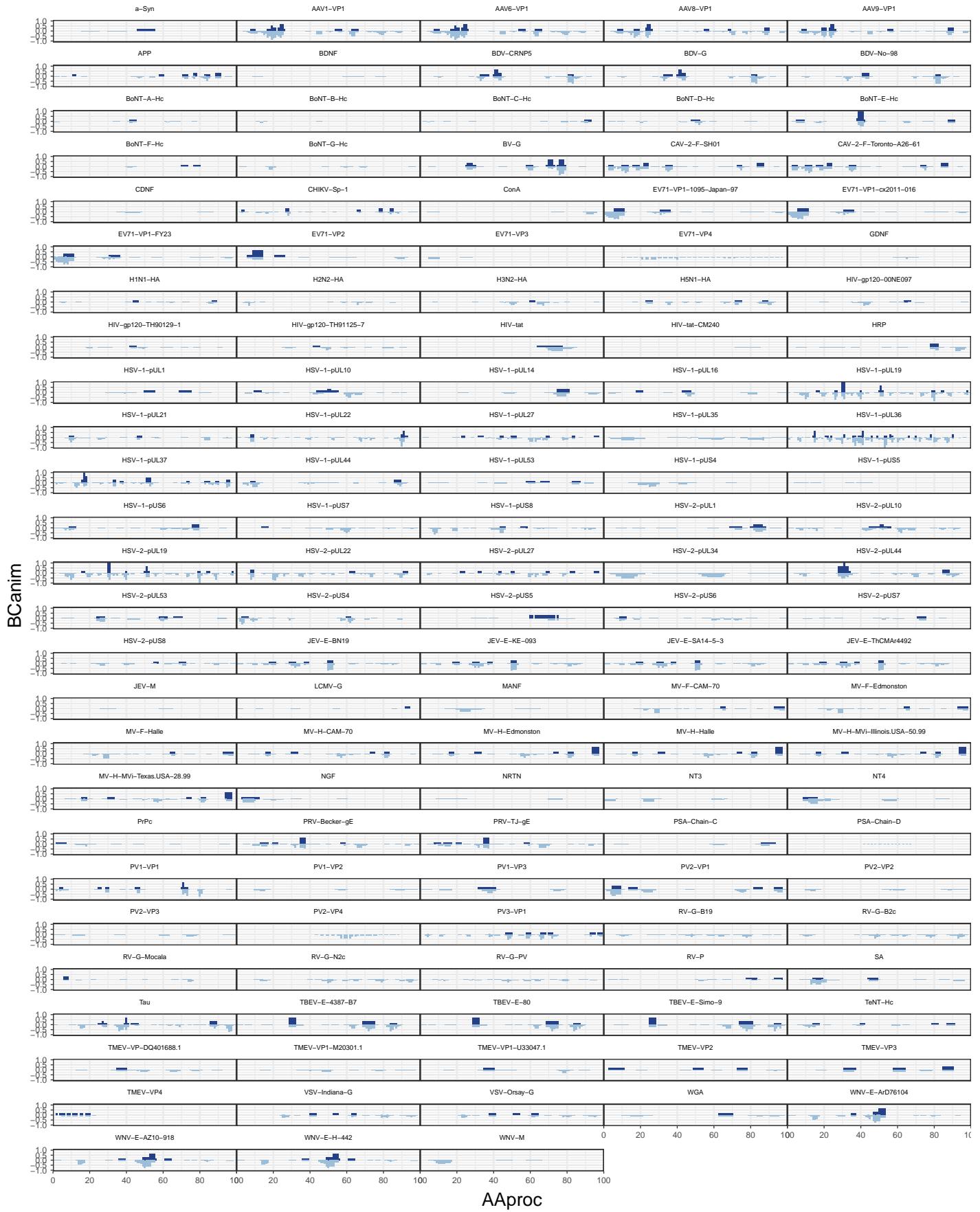
mRNA_3cpc_Trsp	AA	NormCount	BCcount	AnimalCount	LUTnrs	mainStruct	mismatches	BCanim
HRP	250	142.63551	2	7	X63143	14aa	0.000	14
AAV1-VP1	151	127.15850	3	4	X25958,X25959	14aa	1.500	12
PV1-VP1	230	57.33912	3	4	X42697,X78705,X8350	14aa,14aaG4S	1.000	12
AAV1-VP1	105	47.98157	3	4	X1081,X43336	14aa,22aa	1.625	12
PRV-Becker-gE	212	24.31880	3	4	X44646,X44647	14aa	1.000	12
HSV-1-pUL27	405	93.91714	2	5	X1574	14aa	0.000	10
PV2-VP1	23	49.42497	2	5	X2154,X77095	14aa,14aaG4S	2.500	10
BDV-CRNP5	416	36.81236	2	5	X46864,X53375	14aaaA5	2.250	10
HSV-1-pUL21	82	63.97800	3	3	X27483	14aa	0.750	9
HSV-1-pUS6	282	60.26591	3	3	X10394,X22271	14aa,22aa	0.500	9
EV71-VP3	23	49.25185	3	3	X47355,X8142	14aa,14aaA5	0.750	9
BoNT-C-Hc	200	47.01354	3	3	X15439	14aa	1.500	9
HSV-1-pUL22	750	46.49370	3	3	X23667,X66790	14aa,22aa	1.750	9
HSV-1-pUL19	1350	41.74702	3	3	X30498,X30499	14aa	0.125	9
H3N2-HA	423	37.76715	3	3	X12745	14aa	1.000	9
BV-G	309	33.80088	3	3	X25013,X27394	14aa,22aa	0.250	9
AAV1-VP1	80	32.48528	3	3	X31578,X53462,X84751	14aa,14aaA5,14aaG4S	0.000	9
JEV-E-BN19	261	35.05680	4	2	X13674,X18847,X18855	22aa	0.500	8
VSV-Indiana-G	355	51.26419	2	4	X27778	14aa	0.500	8
HSV-1-pUL19	426	46.78716	2	4	X18063	14aa	0.000	8
JEV-E-BN19	257	45.11847	2	4	X18848,X50146	14aa,14aaA5	0.500	8
HSV-2-pUL44	143	27.77506	2	4	X43146	14aa	2.000	8
HSV-1-pUL37	591	162.82357	1	7	X12949	22aa	0.000	7
BoNT-E-Hc	191	76.23391	1	7	X38325	14aa	0.500	7
BoNT-E-Hc	245	49.68832	3	2	X47834,X79124	14aaaA5,14aaG4S	0.125	6
TMEV-VP2	144	37.92619	3	2	X39754	22aa	0.000	6
HSV-1-pUL36	1091	36.58077	3	2	X32408,X84965	14aa,14aaG4S	2.750	6
HSV-1-pUL27	669	23.17816	3	2	X42897,X43062	14aa	0.500	6
Tau	275	90.50399	2	3	X74747	14aa	0.000	6
VSV-Indiana-G	215	49.91581	2	3	X36144	14aa	0.000	6
CHIKV-Sp-1	1097	47.05060	2	3	X34522	14aa	0.500	6
NT3	59	45.63683	2	3	X26899	14aa	1.500	6
HSV-1-pUL19	476	44.90050	2	3	X58843,X68179	14aa,14aaA5	1.500	6
HSV-1-pUS6	308	44.19308	2	3	X12954	14aa	3.000	6
HSV-1-pUL19	425	42.35297	2	3	X41345,X87279	14aa,14aaG4S	0.500	6
BDNF	158	42.16045	2	3	X84727	14aaG4S	0.500	6
HSV-2-pUL10	395	28.16743	2	3	X35006,X54361	14aa,14aaA5	0.500	6
HSV-1-pUL44	450	26.64260	2	3	X26530,X52108	14aa,14aaA5	0.000	6
CAV-2-F-SH01	129	22.34236	2	3	X38436	14aa	0.000	6
CHIKV-Sp-1	989	19.55223	2	3	X75537,X92068	14aa,14aaG4S	1.250	6
HSV-1-pUL27	872	18.75100	2	3	X4882	14aa	0.000	6

mRNA_3cpc_Str	AA	NormCount	BCcount	AnimalCount	LUTnrs	mainStruct	mismatches	BCanim
BV-G	309	139.65256	3	4	X25013	14aa	0.50	12
PV1-VP1	699	120.58105	3	4	X1614,X27075	14aa,22aa	0.50	12
BDV-CRNP5	416	88.93638	3	4	X46864,X53375	14aaaA5	2.25	12
BV-G	305	85.21082	3	3	X27393,X83630	14aa,14aaG4S	1.50	9
AAV1-VP1	151	77.00653	3	3	X25958,X25959	14aa	1.50	9
CAV-2-F-SH01	129	83.44190	2	4	X38436	14aa	0.00	8
H3N2-HA	374	76.56948	2	4	X71740	14aa	1.00	8
HSV-1-pUL37	386	76.13766	2	4	X32561	14aa	0.00	8
CAV-2-F-SH01	108	75.92966	2	4	X14027	14aa	0.00	8
Tau	282	72.30347	2	4	X7067	14aa	0.00	8
HSV-2-pUL53	90	67.19349	2	4	X42274,X71435	14aa,22aa	0.50	8
PRV-Becker-gE	89	65.88816	2	4	X23396,X26959	14aa,22aa	1.00	8
TBEV-E-4387-B7	154	60.54664	2	4	X8898	14aa	0.00	8
Tau	258	58.13195	2	4	X11013	14aa	0.00	8
HSV-1-pUL19	369	57.90429	2	4	X27734	14aa	1.00	8
PV2-VP1	23	46.40636	2	4	X2154,X77095	14aa,14aaG4S	2.50	8
JEV-E-BN19	260	36.24377	3	2	X16286,X68687	14aa	0.50	6
HSV-1-pUL19	426	35.89847	3	2	X18062,X18063	14aa	0.00	6
AAV8-VP1	522	74.19642	2	3	X62811	14aa	1.00	6
HSV-2-pUS4	23	62.76676	2	3	X63200	14aa	0.00	6
TMEV-VP3	143	62.47439	2	3	X4005	14aa	0.00	6
EV71-VP3	20	61.05825	2	3	X75357	14aa	0.00	6
HSV-1-pUL16	305	60.07854	2	3	X75948	14aa	0.00	6
HSV-1-pUL36	1161	58.13588	2	3	X43856,X8573	14aa,22aa	1.00	6
CAV-2-F-SH01	65	57.57169	2	3	X57762	14aaaA5	0.00	6
Tau	666	57.12792	2	3	X8763	14aa	0.00	6
BV-G	238	46.87759	2	3	X24363	14aa	0.50	6
EV71-VP1-1095-Japan-97	15	43.68963	2	3	X68716	22aa	2.00	6
HSV-1-pUL36	1284	43.29802	2	3	X29916	22aa	0.00	6
PV1-VP3	89	43.23793	2	3	X29235,X49402	14aaaA5,22aa	1.25	6
HSV-1-pUL44	29	40.04330	2	3	X59011,X68803	14aa,14aaaA5	0.75	6
HRP	250	33.00303	2	3	X63143	14aa	0.00	6
HSV-2-pUL22	296	31.69955	2	3	X58607,X67280	14aa,14aaaA5	0.50	6
VSV-Indiana-G	329	63.29449	2	2	X41530	14aa	0.50	4
MV-H-CAM-70	106	59.11170	2	2	X16508	14aa	0.50	4
CHIKV-Sp-1	989	56.32458	2	2	X75537,X92068	14aa,14aaG4S	1.25	4

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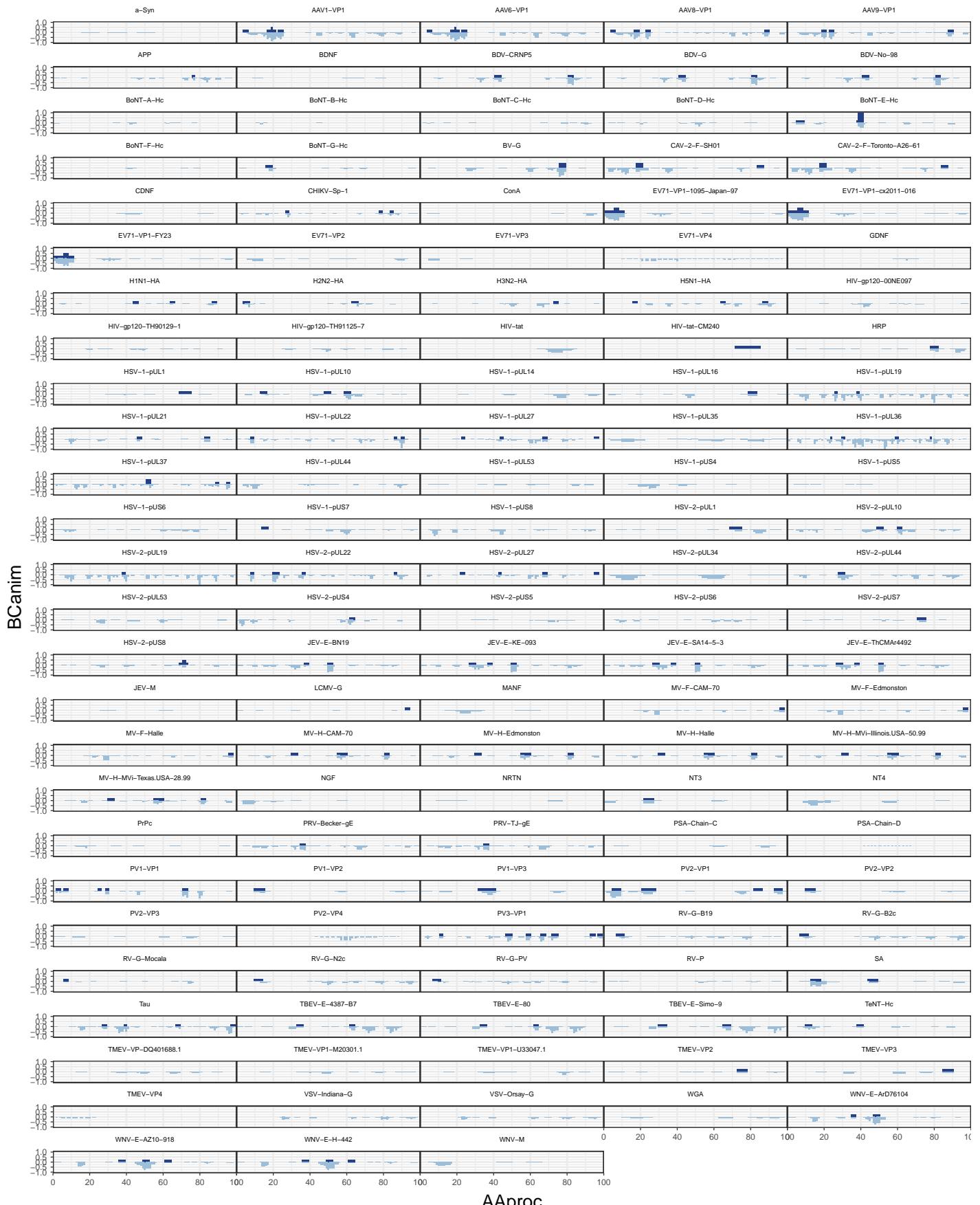


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BV-G	309	54.523109	3	4	X25013	14aa	0.50	12	
BDV-CRNP5	416	45.527699	3	4	X46864,X53375	14aaA5	2.25	12	
AAV1-VP1	151	46.556368	3	3	X25958,X25959	14aa	1.50	9	
BV-G	305	35.929204	3	3	X27393,X83630	14aa,14aaG4S	1.50	9	
HRP	250	59.013906	2	4	X63143	14aa	0.00	8	
HSV-1-pUL37	386	40.548193	2	4	X32561	14aa	0.00	8	
CAV-2-F-SH01	129	32.177172	2	4	X38436	14aa	0.00	8	
PRV-Becker-gE	89	30.826042	2	4	X23396,X26959	14aa,22aa	1.00	8	
H3N2-HA	374	25.746639	2	4	X71740	14aa	1.00	8	
BV-G	238	24.373086	2	4	X24363	14aa	0.50	8	
PV1-VP1	699	32.345443	2	3	X1614,X27075	14aa,22aa	0.50	6	
HSV-1-pUL16	305	29.063256	2	3	X75948	14aa	0.00	6	
Tau	282	28.330669	2	3	X7067	14aa	0.00	6	
HSV-1-pUS6	308	27.784911	2	3	X12954	14aa	3.00	6	
MV-H-Edmonston	593	22.005741	2	3	X42886,X56376	14aa,14aaA5	0.75	6	
∞	TBEV-E-4387-B7	365	21.439004	2	3	X49063	14aaA5	2.50	6
	Tau	258	18.993075	2	3	X11013	14aa	0.00	6
	HSV-1-pUL19	369	18.651121	2	3	X27734	14aa	1.00	6
	HSV-1-pUL36	1187	18.478228	2	3	X56584,X87874	14aaA5,14aaG4S	1.00	6
	HSV-1-pUL27	405	60.008724	2	2	X1574	14aa	0.00	4
VSV-Indiana-G	329	21.621933	2	2	X41530	14aa	1.00	4	
AAV8-VP1	522	19.605254	2	2	X62811	14aa	1.00	4	
HSV-1-pUL19	114	19.605254	2	2	X36094	14aa	1.00	4	
CAV-2-F-SH01	65	18.651121	2	2	X57762	14aaA5	0.00	4	
BV-G	107	18.651121	2	2	X38953	14aa	0.00	4	
Tau	666	18.279815	2	2	X8763	14aa	0.00	4	
BoNT-E-Hc	424	16.925227	2	2	X6725	14aa	1.50	4	
CHIKV-Sp-1	989	16.736704	2	2	X75537,X92068	14aa,14aaG4S	1.25	4	
EV71-VP3	20	16.359658	2	2	X75357	14aa	0.00	4	
AAV1-VP1	335	14.632365	2	2	X2444,X54645	14aa,14aaA5	1.50	4	
TBEV-E-4387-B7	154	14.165335	2	2	X8898	14aa	0.00	4	
VSV-Indiana-G	215	12.873319	2	2	X36144	14aa	0.00	4	
HSV-1-pUL36	940	12.662050	2	2	X43643	14aa	0.00	4	
HSV-1-pUL36	2000	11.616906	2	2	X53085	14aaA5	1.75	4	
HSV-1-pUL36	2266	11.283485	2	2	X8527	14aa	0.25	4	



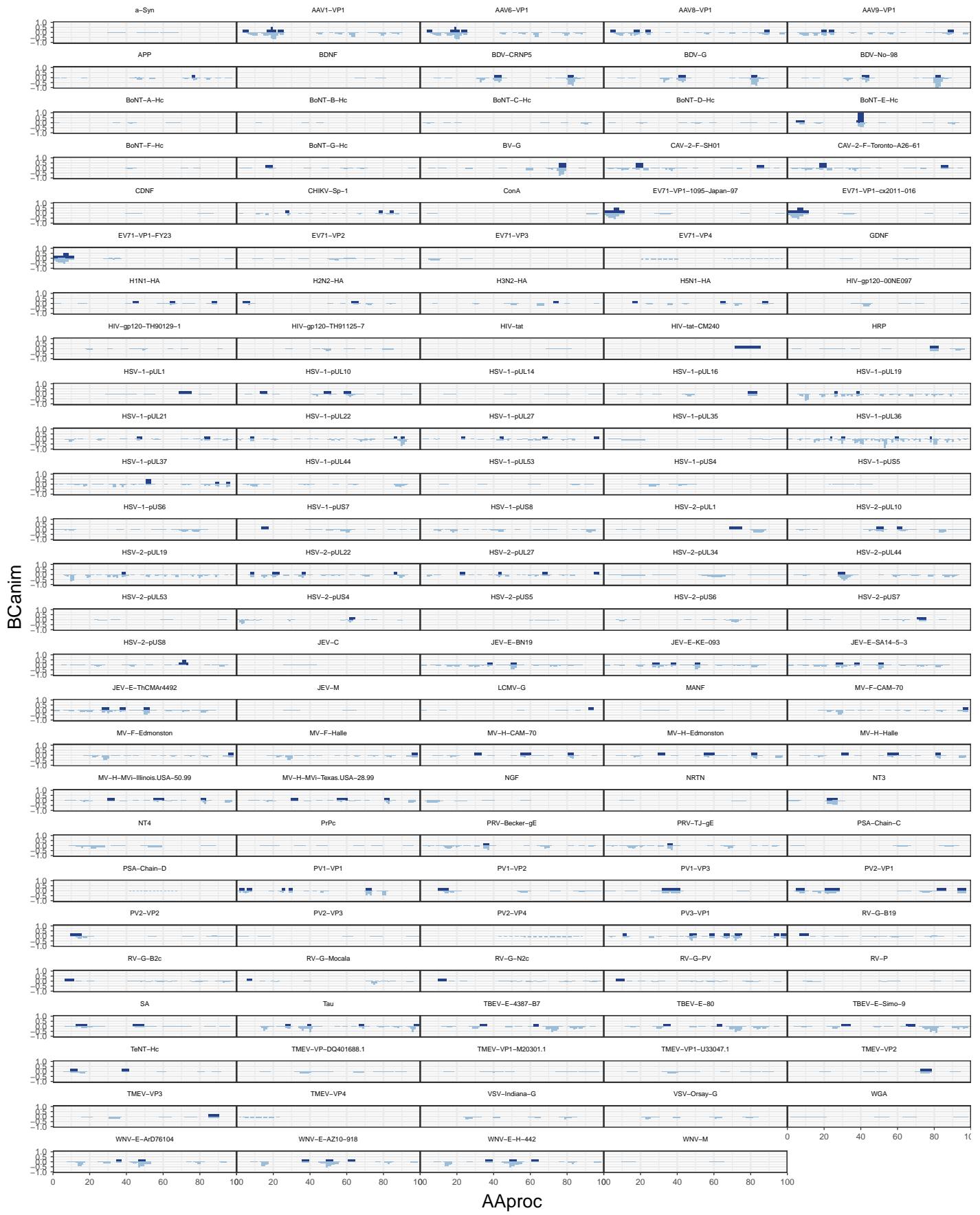
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mRNA_3cpc_Ctx	AA	NormCount	BCcount	AnimalCount	LUTnrs	mainStruct	mismatches	BCanim
MV-H-Edmonston	593	15.781416	2	2	X42886,X56376	14aa,14aaaA5	0.75	4
TBEV-E-4387-B7	154	12.756576	2	2	X8898	14aa	0.00	4
PRV-Becker-gE	212	10.513433	2	2	X44646,X44647	14aa	1.50	4
HSV-1-pUL37	591	45.429529	1	3	X12949	22aa	0.00	3
AAV1-VP1	181	41.454366	1	2	X62390	14aa	0.00	2
HRP	250	40.285720	1	2	X63143	14aa	0.00	2
HSV-1-pUL22	763	21.086275	1	2	X19117	14aa	0.00	2
CHIKV-Sp-1	1058	19.606058	1	2	X59889	14aaaA5	0.00	2
CAV-2-F-SH01	466	18.282011	1	2	X9572	14aa	4.50	2
BDV-CRNP5	217	16.625833	1	2	X75606	14aa	0.00	2
BoNT-E-Hc	191	15.903284	1	2	X38325	14aa	0.50	2
HSV-1-pUL37	1077	14.739181	1	2	X20913	14aa	0.50	2
CHIKV-Sp-1	989	14.297303	1	2	X75537	14aa	0.00	2
EV71-VP1-1095-Japan-97	27	14.048089	1	2	X28941	14aa	1.00	2
JEV-E-BN19	257	14.048089	1	2	X18848	14aa	1.00	2
HSV-1-pUL14	173	13.473998	1	2	X51822	14aaaA5	1.00	2
HSV-1-pUL44	450	13.473998	1	2	X26530	14aa	0.00	2
CAV-2-F-SH01	129	13.137528	1	2	X38436	14aa	0.00	2
TMEV-VP3	205	13.137528	1	2	X70871	14aa	0.00	2
HSV-1-pUL22	75	12.756576	1	2	X22100	14aa	0.00	2
HSV-1-pUL36	2461	12.756576	1	2	X67903	14aa	1.50	2
HSV-1-pUL37	386	12.756576	1	2	X32561	14aa	0.00	2
APP	600	12.756576	1	2	X29756	14aa	0.50	2
AAV8-VP1	663	12.317567	1	2	X67282	14aa	0.00	2
HSV-2-pUL44	143	12.317567	1	2	X43146	14aa	2.00	2
HSV-1-pUL37	201	11.799564	1	2	X11069	14aa	0.00	2
HSV-1-pUS6	308	11.799564	1	2	X12954	14aa	3.00	2
BoNT-E-Hc	189	11.799564	1	2	X9739	14aa	1.00	2
RV-G-Mocala	38	11.799564	1	2	X55263	14aaaA5	0.00	2
TBEV-E-4387-B7	351	11.799564	1	2	X44593	14aa	0.00	2
HSV-1-pUL19	426	11.167764	1	2	X18063	14aa	0.00	2
HSV-1-pUL36	980	11.167764	1	2	X25719	14aa	1.00	2
HSV-1-pUL36	1293	11.167764	1	2	X62972	14aa	0.00	2
HSV-1-pUL36	2834	11.167764	1	2	X82220	14aaaG4S	5.00	2
HSV-1-pUL37	194	11.167764	1	2	X31866	14aa	1.00	2
HSV-2-pUS5	63	11.167764	1	2	X69167	14aa	0.00	2

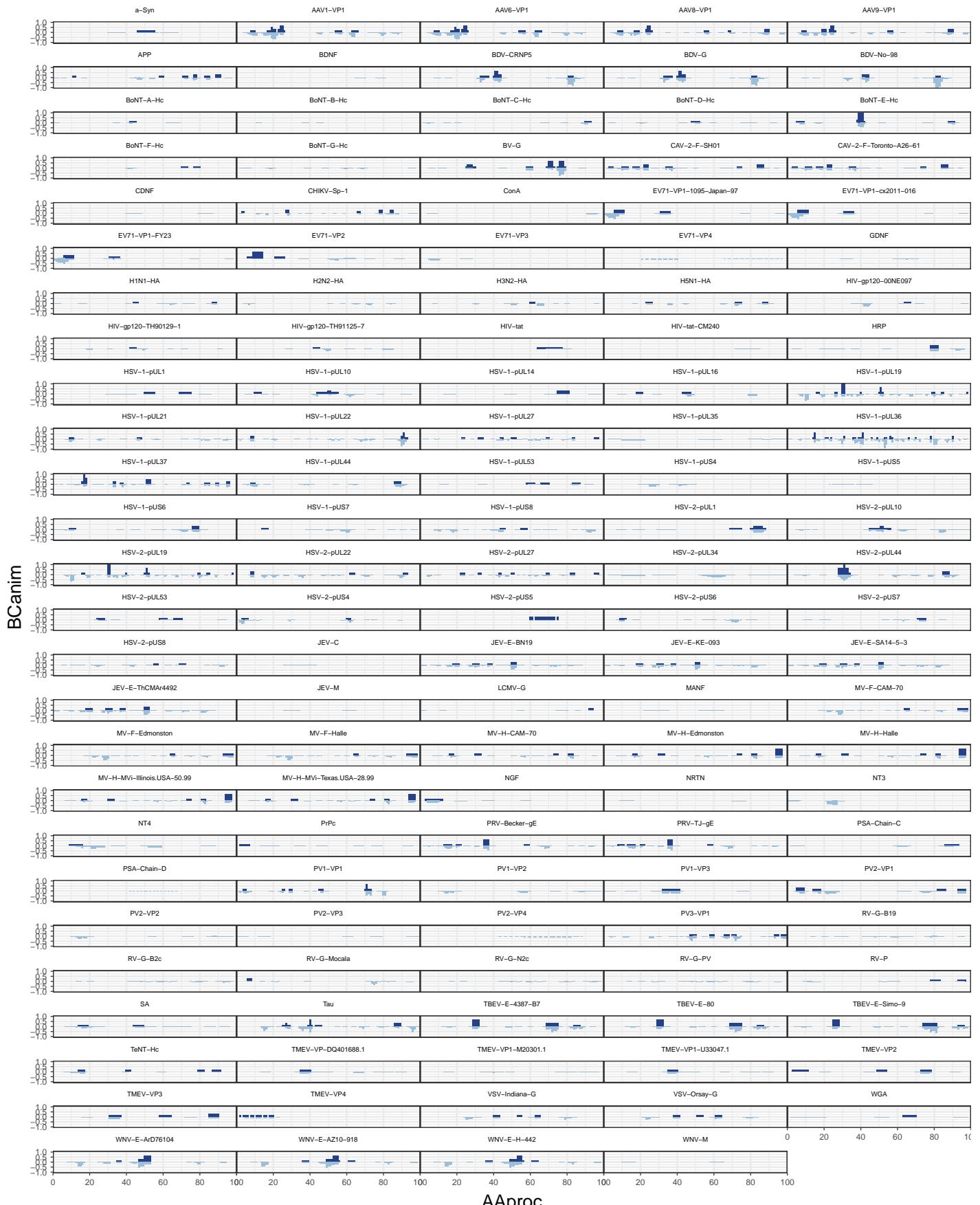


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BV-G	309	14.070078	2	1	X25013	14aa	0.5	2
CAV-2-F-SH01	108	13.108011	2	1	X14027	14aa	0.0	2
HSV-1-pUL37	591	46.510574	1	2	X12949	22aa	0.0	2
BoNT-E-Hc	191	17.487146	1	2	X38325	14aa	0.5	2
Tau	275	22.621791	1	1	X74747	14aa	0.0	1
CAV-2-F-SH01	466	9.504032	1	1	X9572	14aa	4.5	1
BDV-CRNP5	217	8.542444	1	1	X75606	14aa	0.0	1
HSV-1-pUL22	763	8.468647	1	1	X19117	14aa	0.0	1
SA	119	8.308661	1	1	X45740	14aaA5	0.0	1
HSV-1-pUL36	777	8.029528	1	1	X38951	14aa	0.5	1
HSV-1-pUL37	1007	7.808056	1	1	X62663	14aa	1.5	1
CHIKV-Sp-1	1058	7.546308	1	1	X59889	14aaA5	0.0	1
HSV-1-pUL27	405	7.395162	1	1	X1574	14aa	0.0	1
HSV-1-pUL27	216	7.226308	1	1	X10448	14aa	0.0	1
HSV-1-pUL22	75	6.554005	1	1	X22100	14aa	0.0	1
JEV-E-BN19	257	6.554005	1	1	X18848	14aa	1.0	1
PV3-VP1	592	6.554005	1	1	X8366	14aa	0.5	1
EV71-VP1-1095-Japan-97	27	6.235911	1	1	X28941	14aa	1.0	1
TeNT-Hc	183	6.235911	1	1	X35108	14aa	1.5	1
AAV1-VP1	135	5.827240	1	1	X24680	14aa	0.5	1
AAV1-VP1	181	5.827240	1	1	X62390	14aa	0.0	1
HSV-1-pUL1	163	5.827240	1	1	X25027	14aa	0.5	1
HSV-1-pUL10	288	5.827240	1	1	X67991	14aa	0.0	1
HSV-1-pUL19	534	5.827240	1	1	X7350	14aa	0.5	1
HSV-1-pUS7	62	5.827240	1	1	X57702	14aaA5	8.5	1
HSV-2-pUS8	388	5.827240	1	1	X68297	14aa	0.0	1
HRP	250	5.827240	1	1	X63143	14aa	0.0	1
HIV-tat-CM240	80	5.827240	1	1	X51108	14aaA5	1.5	1
JEV-E-BN19	192	5.827240	1	1	X39227	14aa	0.0	1
LCMV-G	467	5.827240	1	1	X6882	14aa	4.0	1
MV-F-CAM-70	538	5.827240	1	1	X68983	14aa	0.0	1
MV-H-CAM-70	366	5.827240	1	1	X42832	14aa	1.0	1
APP	593	5.827240	1	1	X80432	14aaG4S	0.0	1
BoNT-E-Hc	189	5.827240	1	1	X9730	14	1.0	1

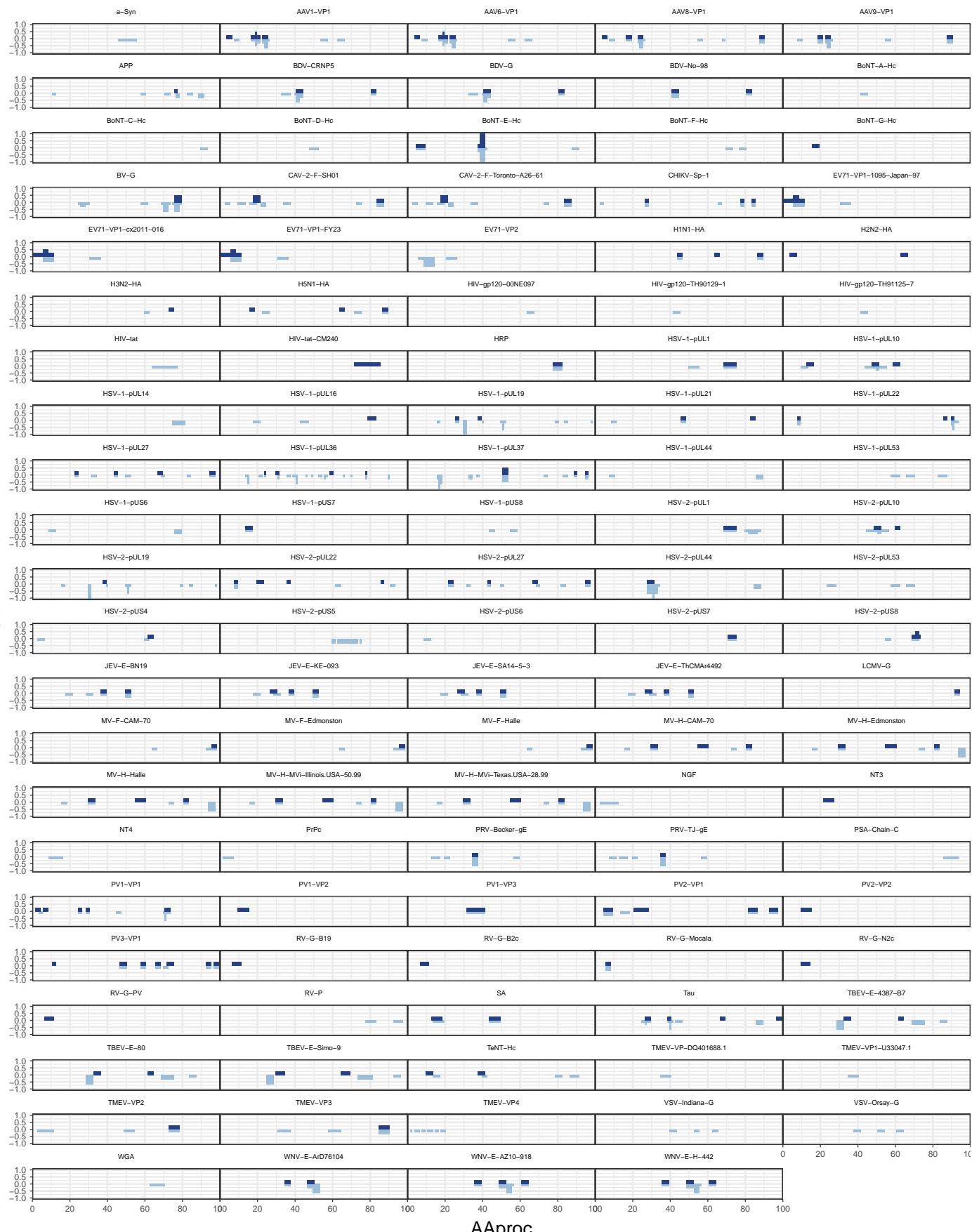


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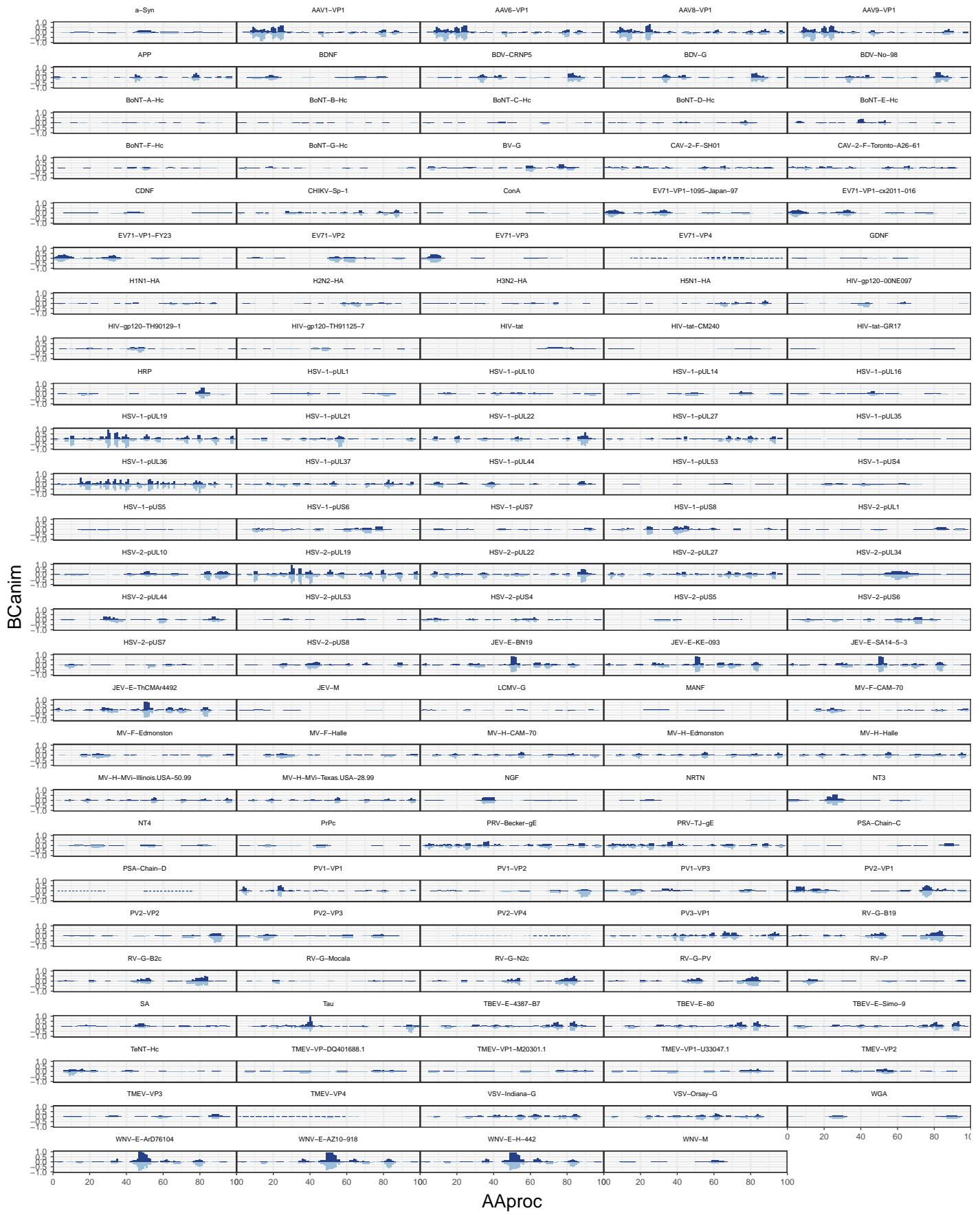


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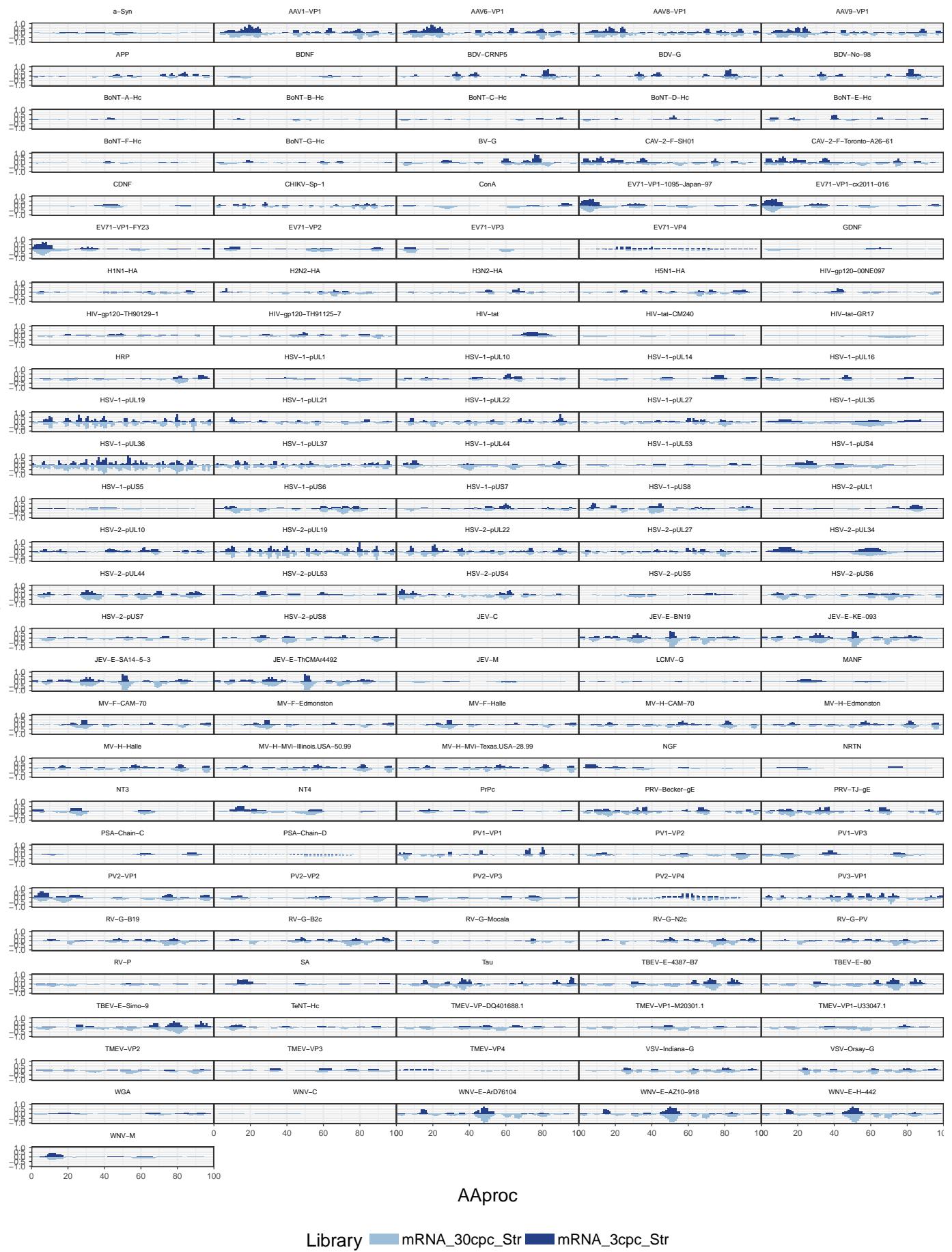
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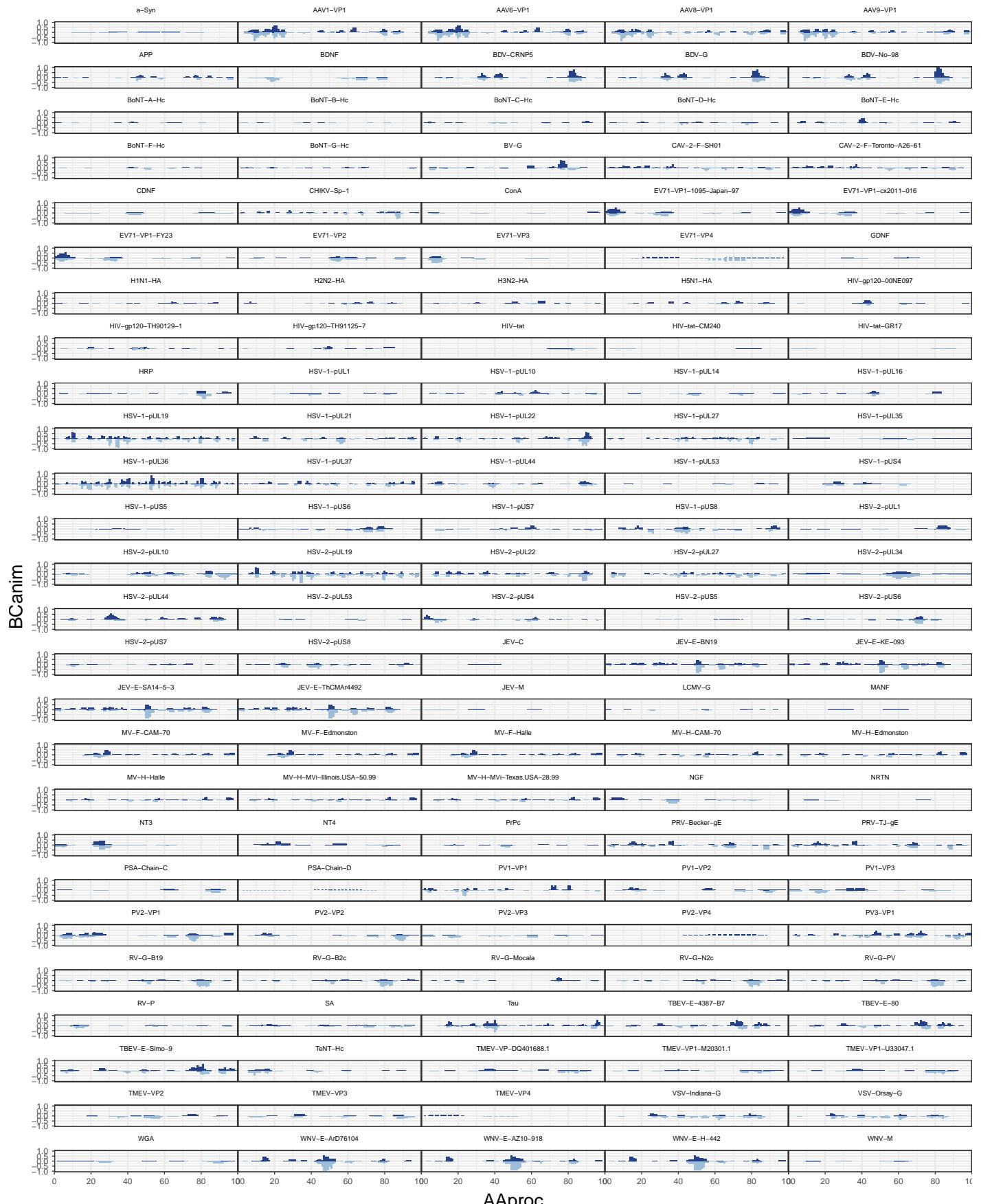


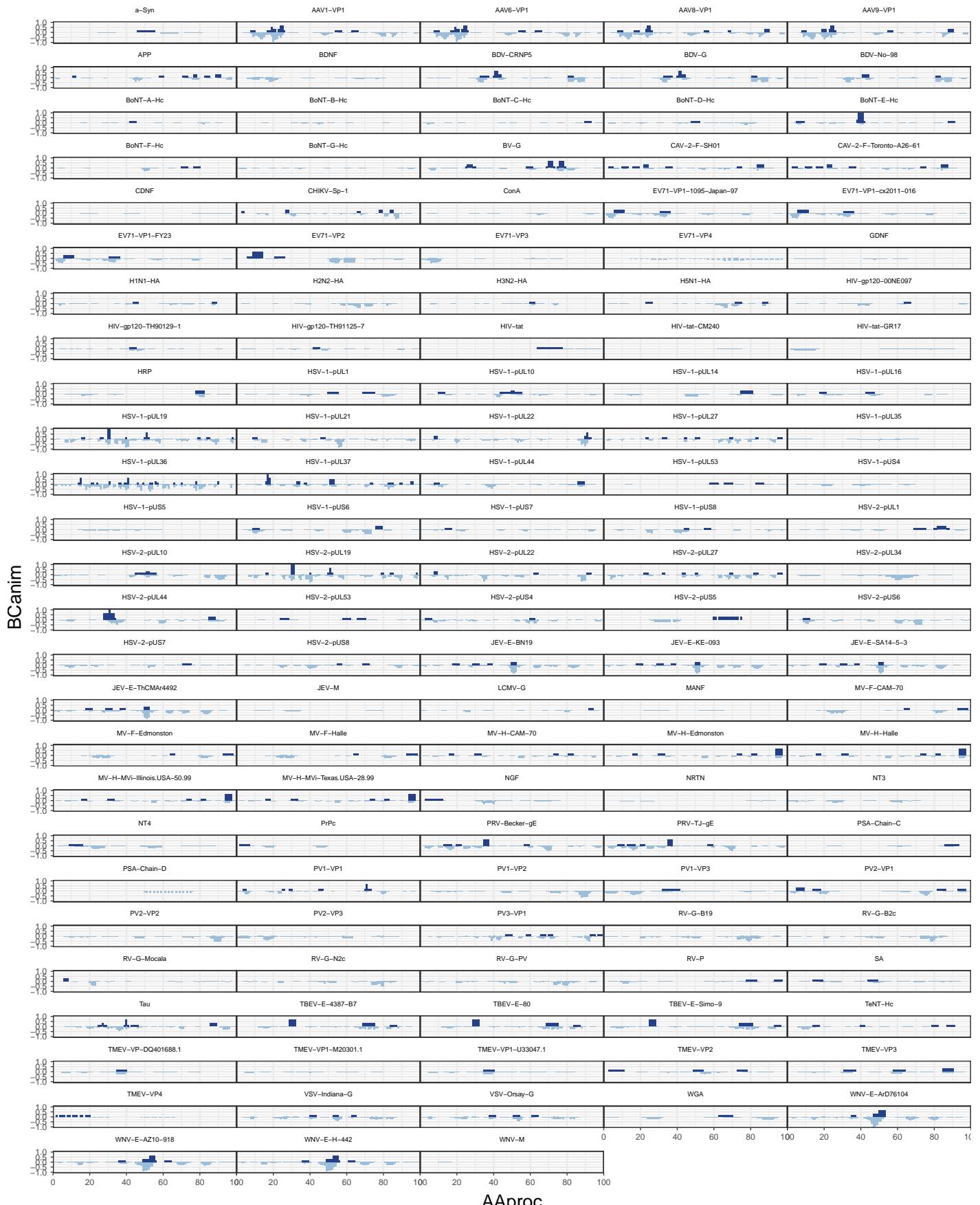
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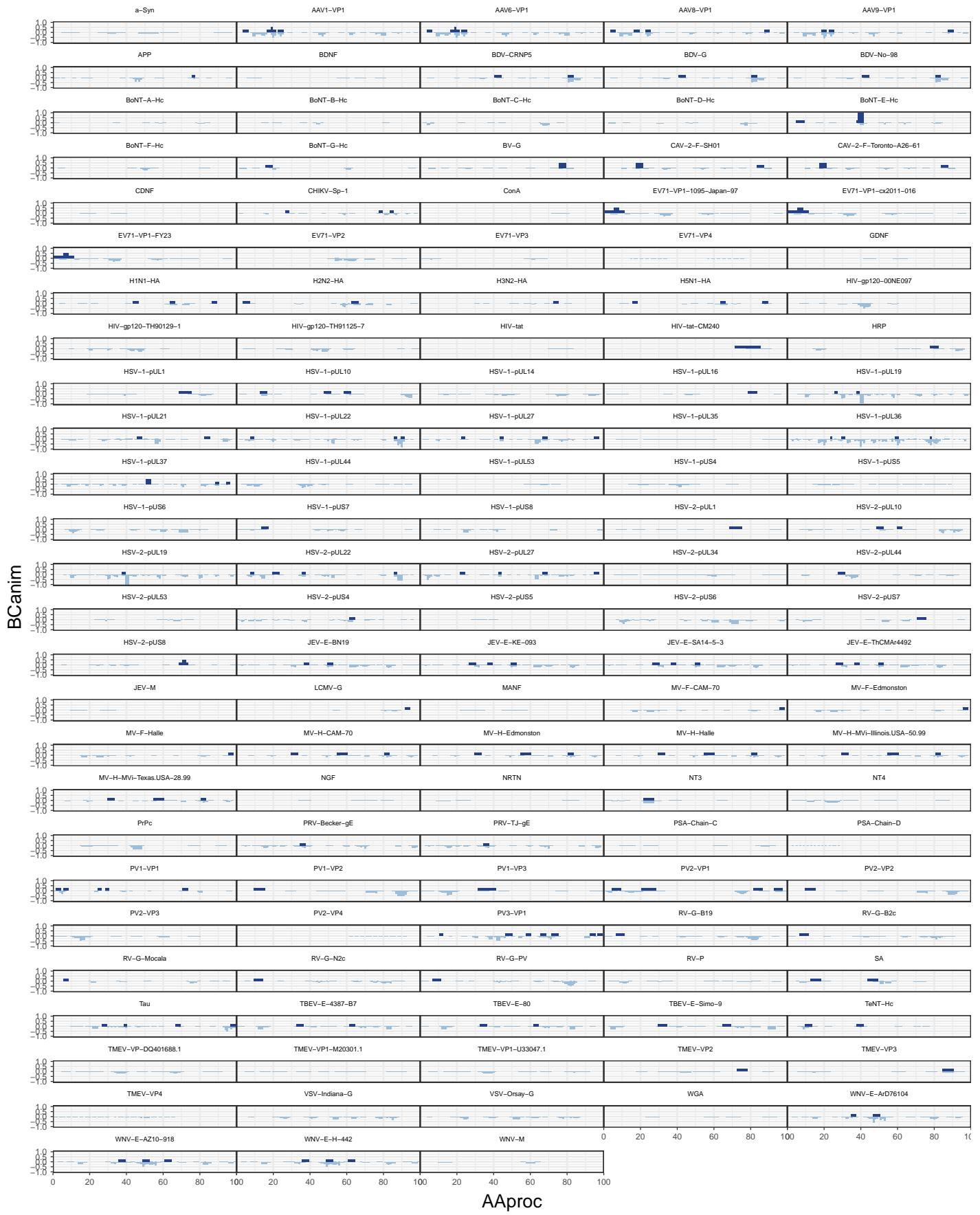


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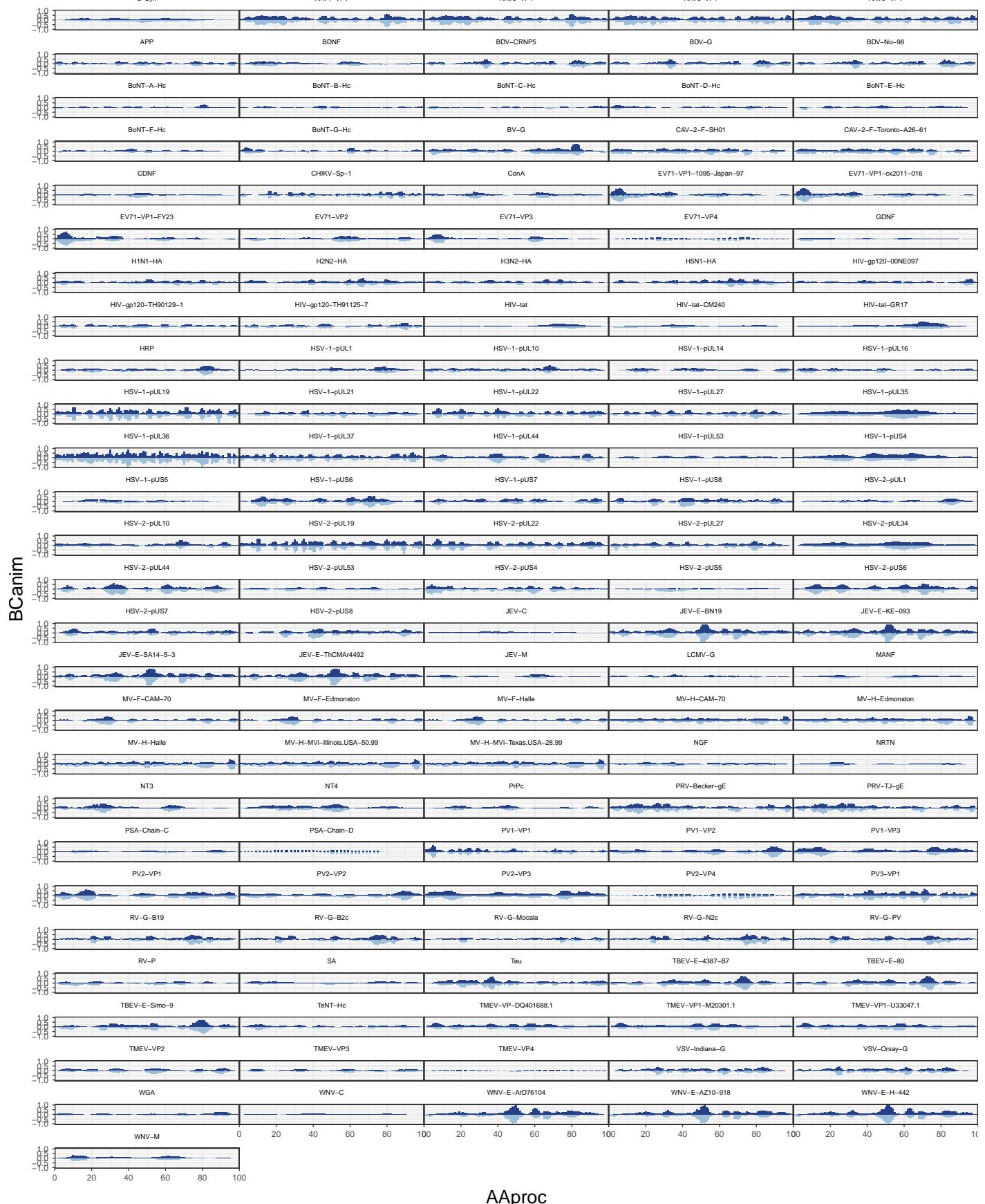




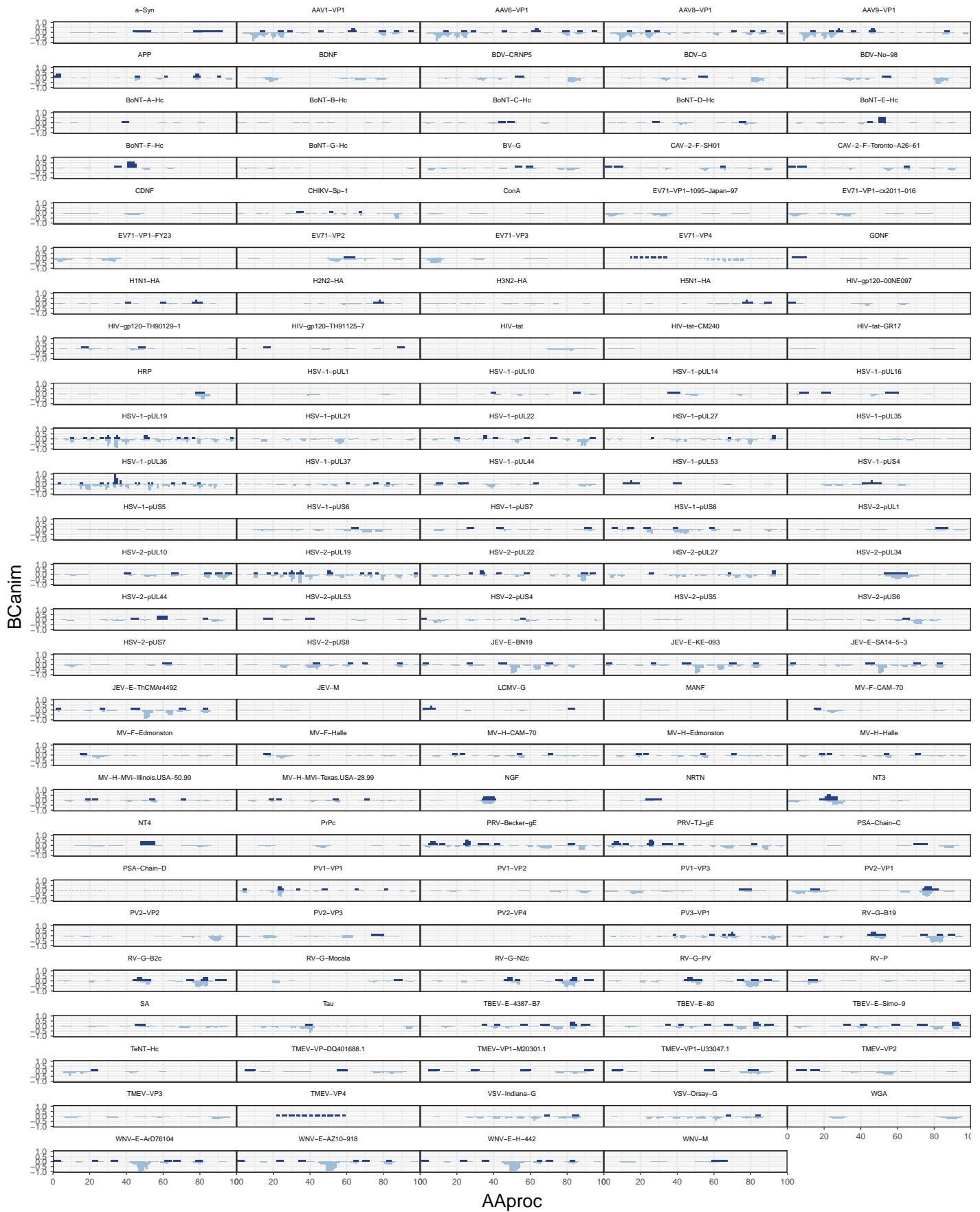




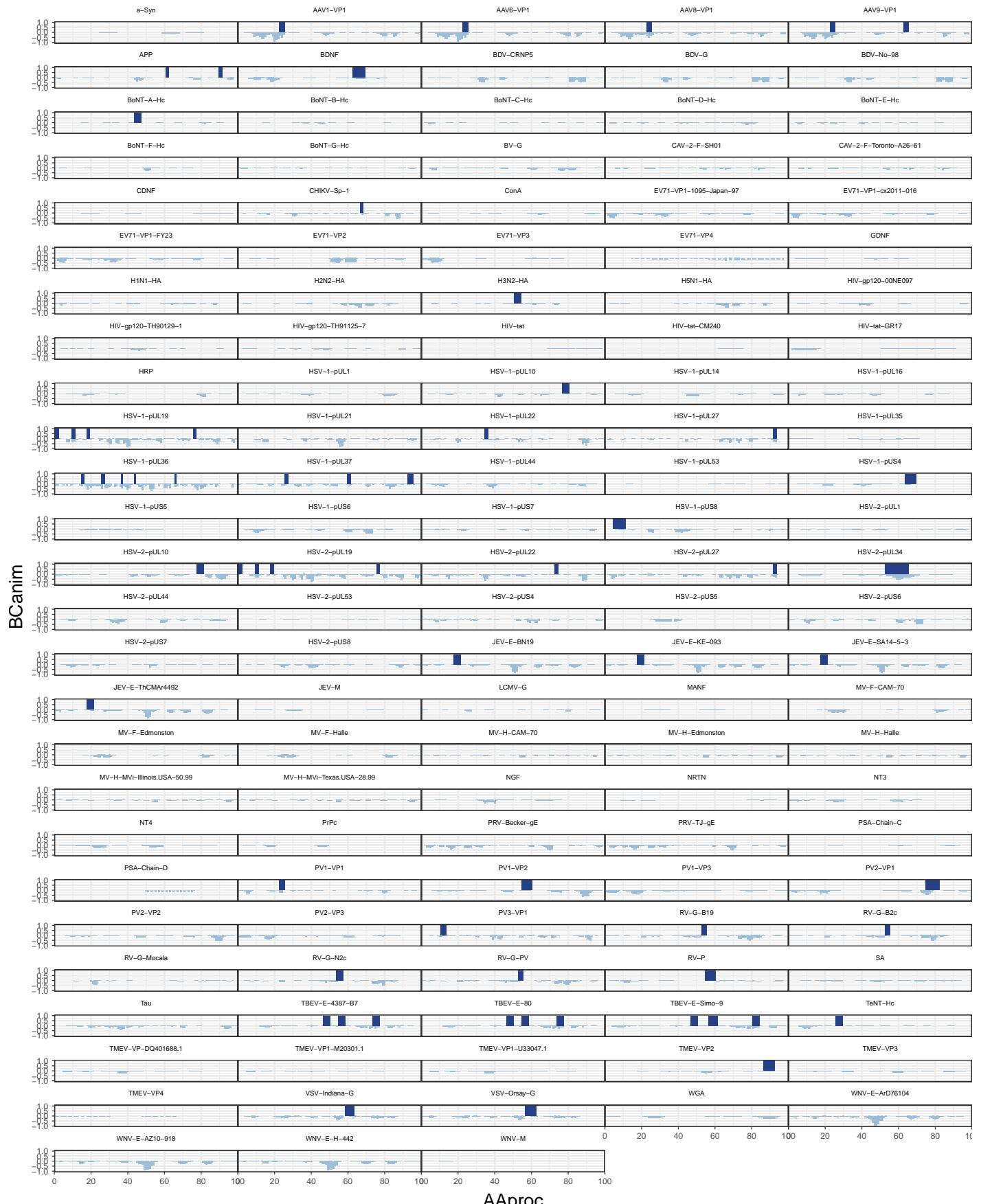
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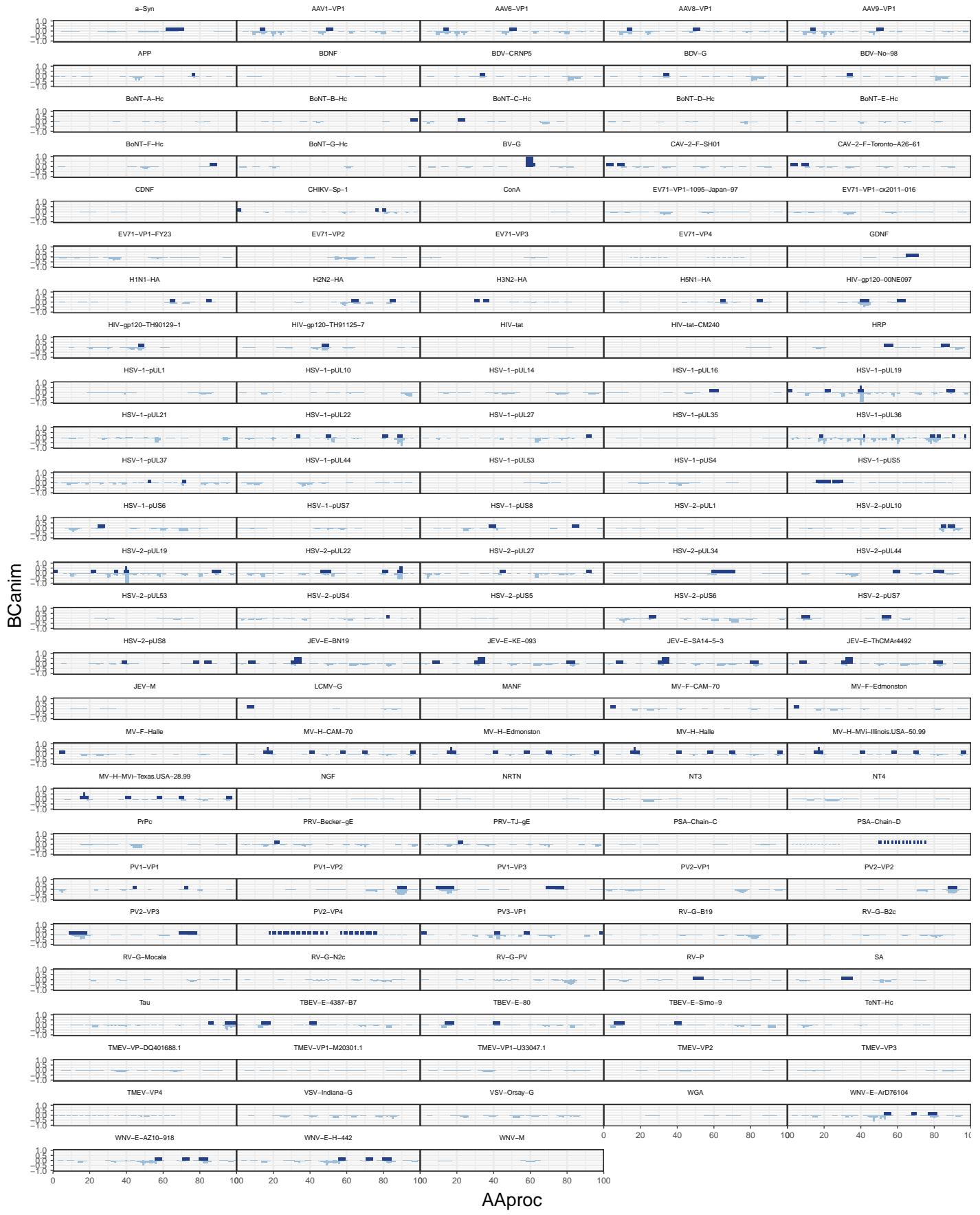
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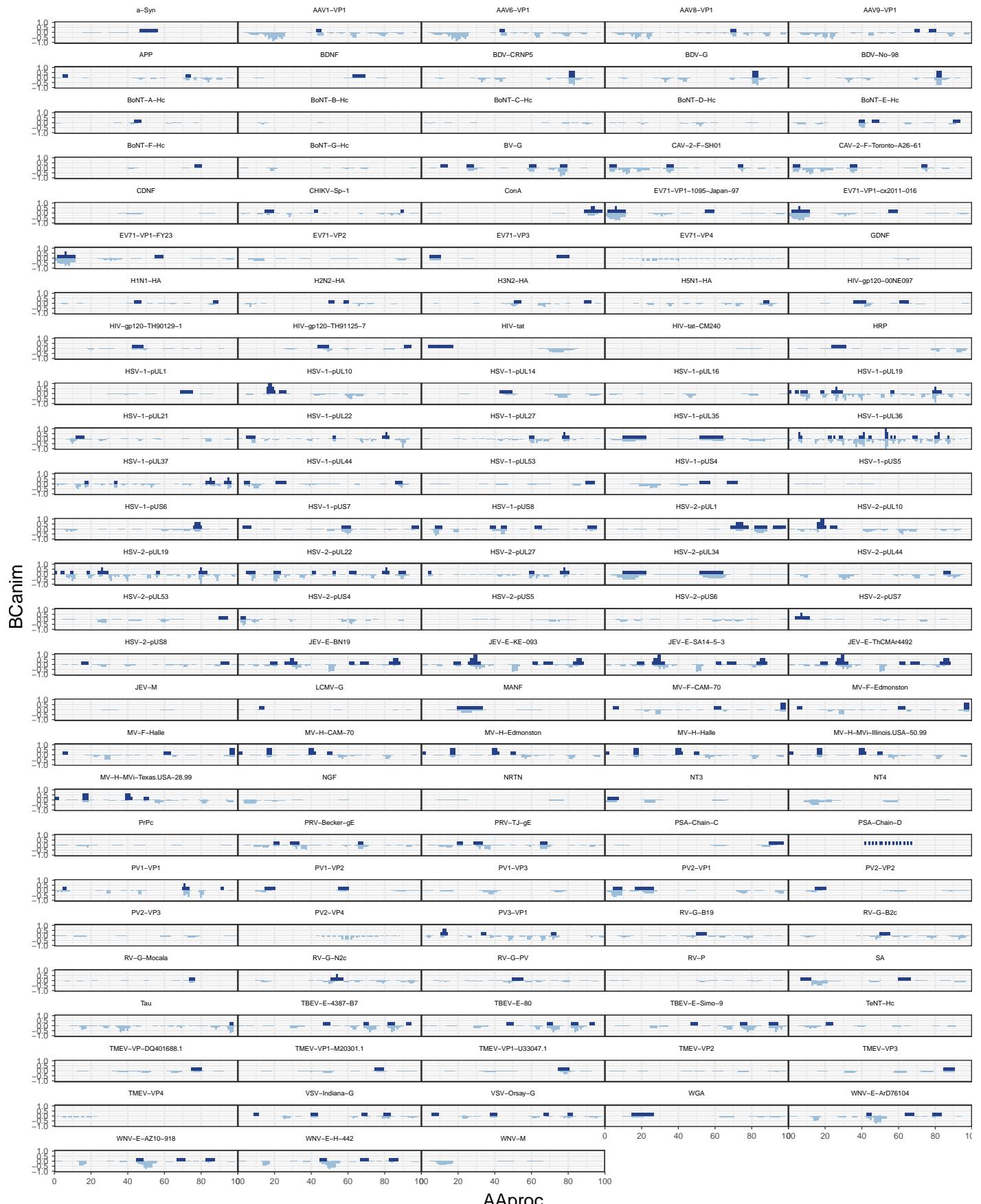
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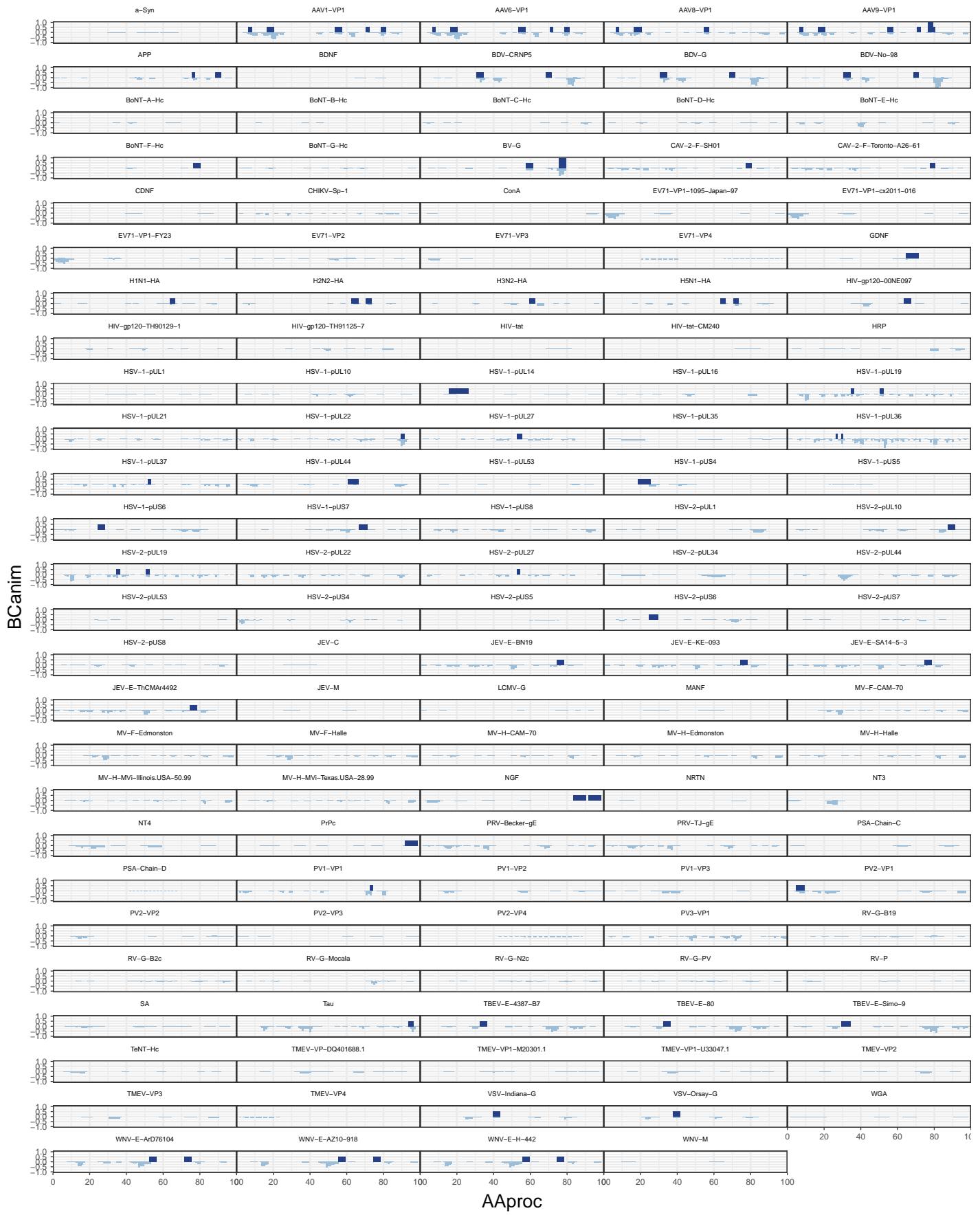


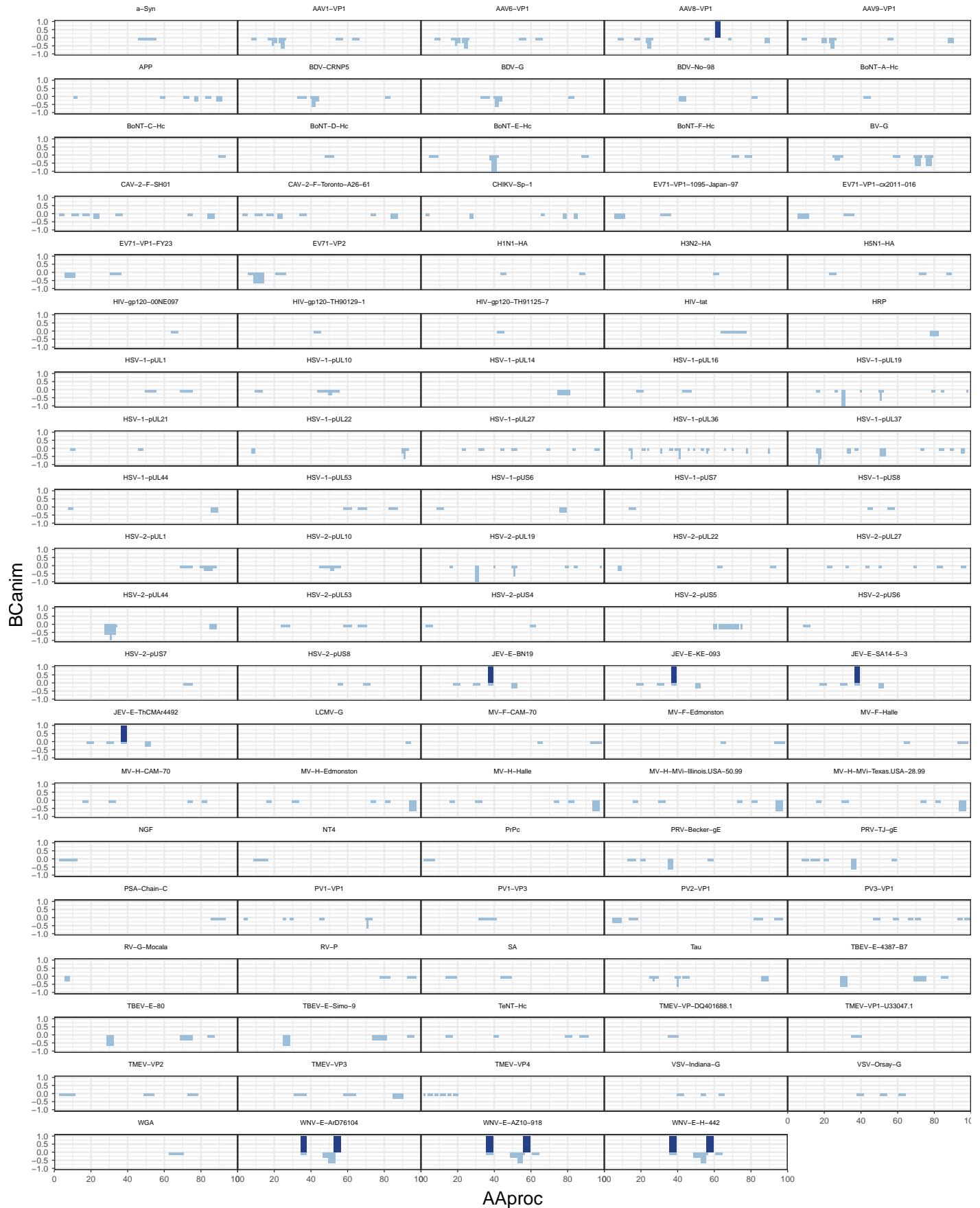
Library mRNA_30cpc_Ctx mRNA_30cpc_Ctx_4wks



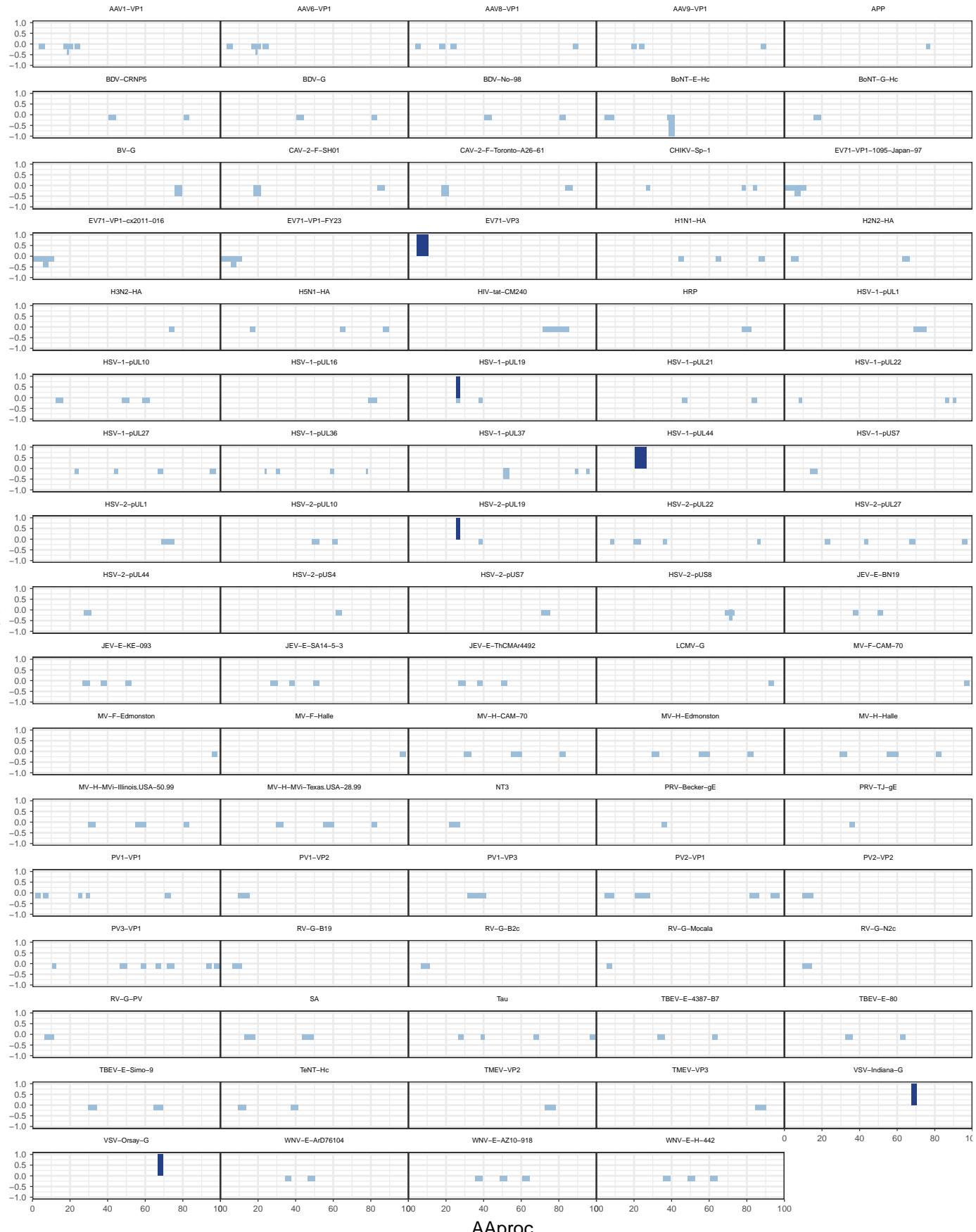
Library mRNA_30cpc_SN mRNA_30cpc_SN_4wks





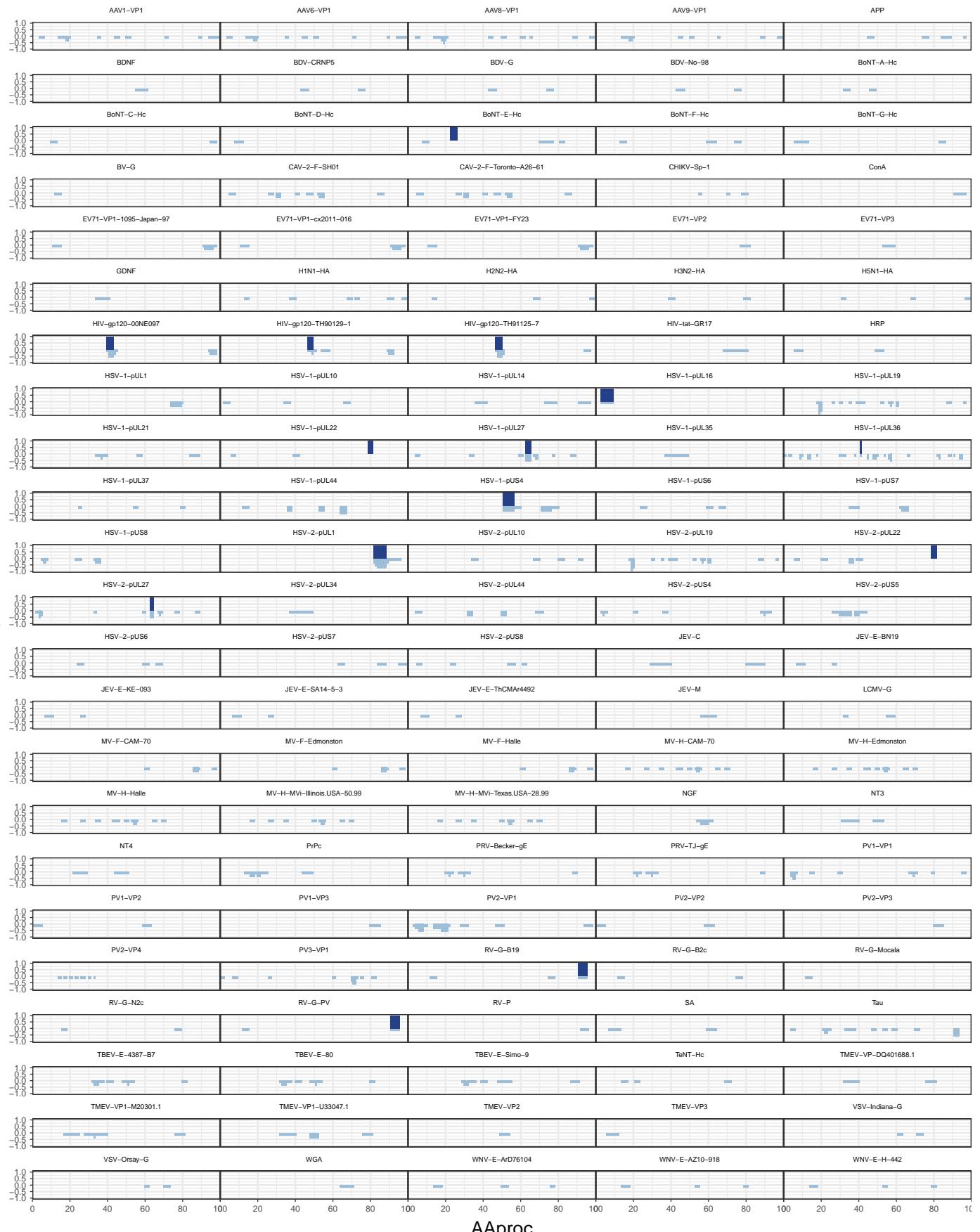


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Library ■ mRNA_3cpc_SN ■ mRNA_3cpc_SN_4wks

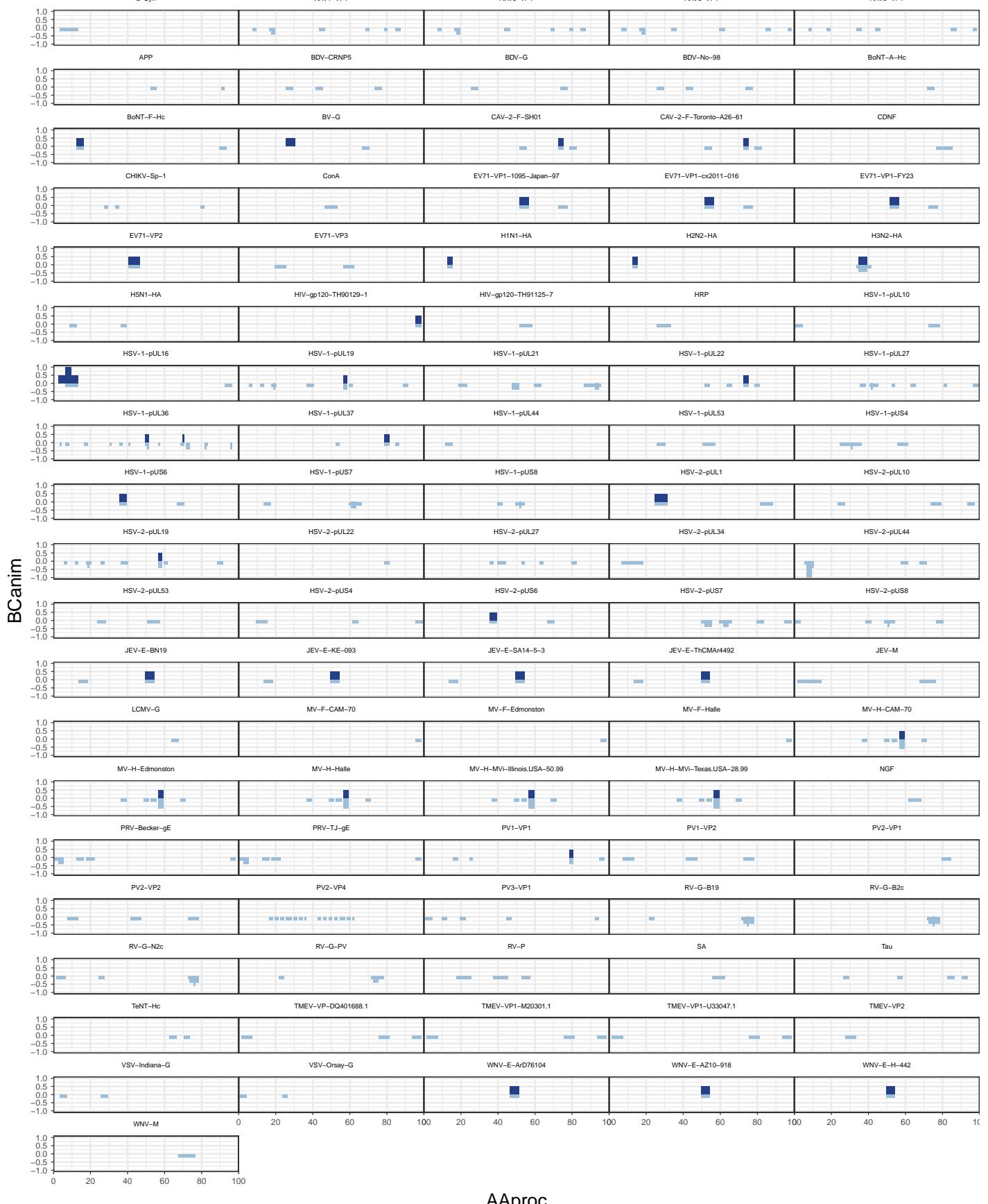
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Library ■ mRNA_30cpc_pNeuron ■ mRNA_3cpc_pNeuron

mRNA_3cpc_pNeuron	AA	NormCount	BCcount	AnimalCount	LUTnrs	mainStruct	mismatches	BCanim
HSV-1-pUL36	1293	22.540625	1	1	X62972	14aa	0.0	1
HSV-1-pUL27	582	22.533260	1	1	X24296	14aa	3.5	1
HSV-1-pUL16	24	22.412921	1	1	X23855	22aa	0.5	1
RV-G-B19	474	21.604735	1	1	X27641	22aa	0.0	1
HSV-2-pUL1	192	21.493669	1	1	X40601	14aa	0.0	1
HSV-1-pUL22	677	6.457672	1	1	X2113	14aa	0.0	1
HSV-1-pUS4	130	6.457672	1	1	X20542	14aa	1.0	1
HIV-gp120-00NE097	160	6.457672	1	1	X69282	14aa	1.5	1
BoNT-E-Hc	118	6.457672	1	1	X70106	14aa	0.0	1

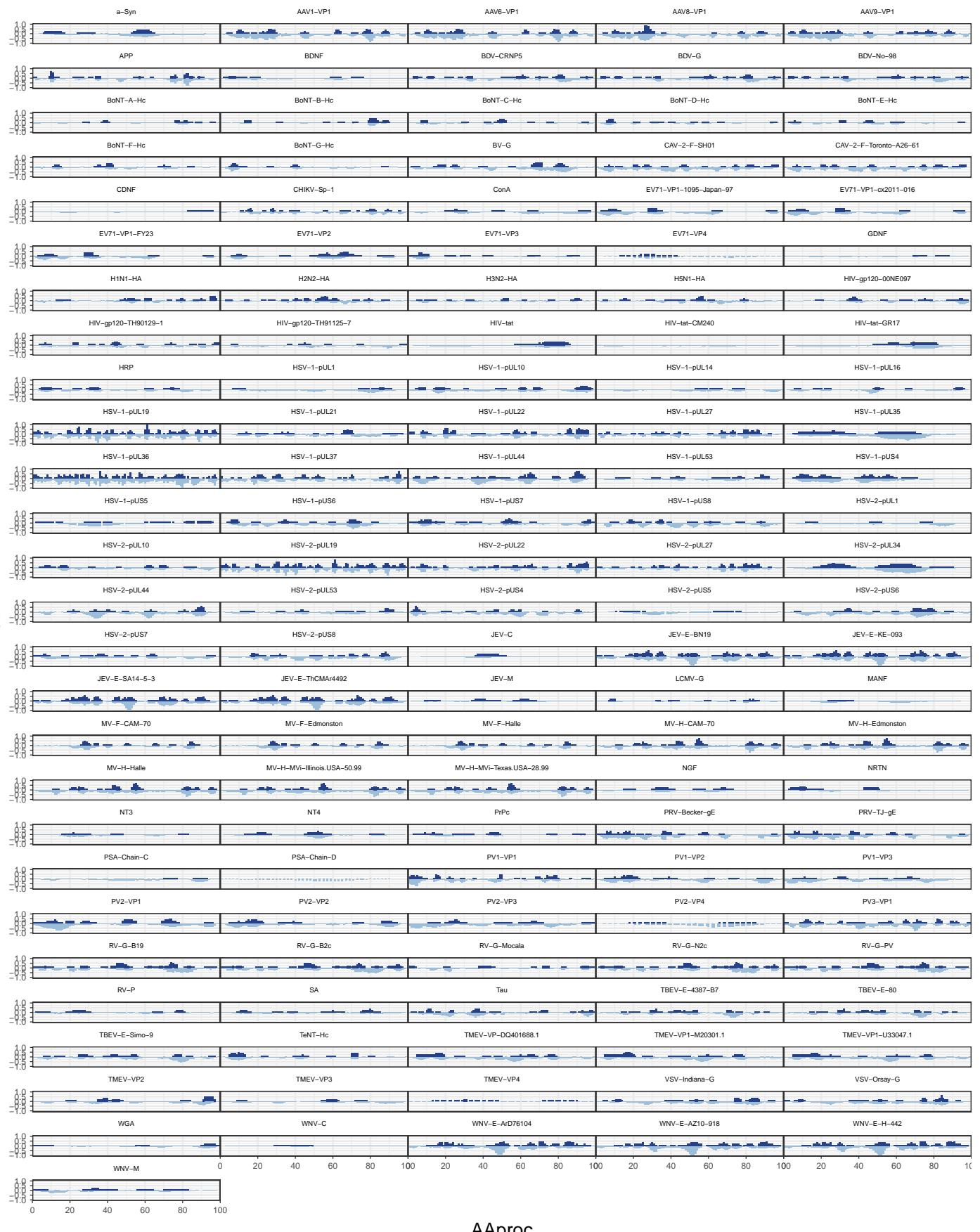
mRNA_30cpc_pNeuron	AA	NormCount	BCcount	AnimalCount	LUTnrs	mainStruct	mismatches	BCanim	
HSV-1-pUL19	280	49.66815	3	1	X24236,X24237	14aa	1.125	3	
Tau	637	35.80223	2	1	X3376	14aa	0.000	2	
PV1-VP1	54	33.30667	2	1	X42345	22aa	0.000	2	
HSV-1-pUL36	1536	33.23198	2	1	X24780	14aa	0.250	2	
TMEV-VP1-U33047.1	140	33.15391	2	1	X40822	14aa	1.500	2	
HSV-2-pUL27	45	33.11158	2	1	X40487	14aa	1.500	2	
CAV-2-F-SH01	170	33.08158	2	1	X5663	14aa	1.500	2	
HSV-1-pUL36	1436	32.87701	2	1	X42917	14aa	0.250	2	
HSV-1-pUL44	192	32.54908	2	1	X22235,X22239	14aa	0.250	2	
HSV-1-pUL19	845	32.00999	2	1	X47263,X7795	14aa,14aaaA5	0.250	2	
HSV-1-pUL36	1785	31.99688	2	1	X27098,X66496	14aa,22aa	1.000	2	
HSV-1-pUL36	443	31.89655	2	1	X57048,X61275	14aa,14aaaA5	0.000	2	
HSV-1-pUL27	582	31.72976	2	1	X24296	14aa	2.250	2	
HSV-2-pUL1	192	31.11019	2	1	X40601	14aa	0.500	2	
HSV-1-pUL44	279	31.10510	2	1	X17514,X19211	14aa	0.500	2	
II	EV71-VP1-1095-Japan-97	282	30.58918	2	1	X39846,X71238	14aa,22aa	2.750	2
	HSV-1-pUL36	2978	29.79895	2	1	X1454	14aa	2.000	2
	HSV-1-pUL27	584	17.57660	1	1	X41804	14aa	0.000	1
	MV-H-CAM-70	168	17.31125	1	1	X38148	14aa	1.000	1
	HRP	26	17.28662	1	1	X67516	14aa	0.000	1
HSV-2-pUL1	211	17.26244	1	1	X41713	14aa	1.000	1	
TMEV-VP-DQ401688.1	219	17.12981	1	1	X5791	14aa	0.000	1	
BoNT-G-Hc	52	17.08274	1	1	X12601	14aa	0.000	1	
TBEV-E-4387-B7	404	17.07210	1	1	X10677	14aa	0.000	1	
HIV-gp120-TH91125-7	439	17.02513	1	1	X69338	14aa	0.000	1	
GDNF	73	16.90391	1	1	X42437	14aa	0.000	1	
Tau	165	16.86372	1	1	X64141	22aa	0.000	1	
HSV-1-pUL36	1808	16.77645	1	1	X27290	14aa	1.000	1	
TMEV-VP3	23	16.72271	1	1	X10225	14aa	0.000	1	
HSV-1-pUL27	625	16.71541	1	1	X63739	14aa	0.000	1	
AAV8-VP1	330	16.68844	1	1	X65893	14aa	0.000	1	
WNV-E-AZ10-918	84	16.63932	1	1	X44931	22aa	1.000	1	
HSV-1-pUL19	369	16.61973	1	1	X27734	14aa	1.500	1	
MV-F-CAM-70	487	16.59988	1	1	X31527	14aa	0.000	1	
AAV1-VP1	336	16.59954	1	1	X64749	14aa	1.000	1	
HSV-1-pUL36	307	16.56958	1	1	X26740	14aa	0.000	1	



mRNA_3cpc_HEK293T	AA	NormCount	BCcount	AnimalCount	LUTnrs	mainStruct	mismatches	BCanim
H1N1-HA	84	22.298735	1	1	X73886	14aa	0.0	1
PV1-VP1	773	21.311446	1	1	X58768	14aaaA5	1.0	1
HSV-1-pUL36	1603	21.153264	1	1	X3867	14aa	0.0	1
H3N2-HA	213	21.147690	1	1	X10222	22aa	0.0	1
HSV-1-pUL19	796	21.125575	1	1	X42219	14aa	0.0	1
HSV-1-pUL22	625	20.968060	1	1	X39331	14aa	0.5	1
CAV-2-F-SH01	403	20.780364	1	1	X66190	14aa	0.0	1
EV71-VP1-1095-Japan-97	162	6.576355	1	1	X76120	14aa	0.0	1
EV71-VP2	112	6.576355	1	1	X65579	14aa	0.5	1
HSV-1-pUL16	24	6.166348	1	1	X23855	22aa	0.5	1
HIV-gp120-TH90129-1	473	6.166348	1	1	X37851	14aa	1.0	1
BV-G	113	5.591394	1	1	X27539	14aa	3.5	1
HSV-1-pUL16	39	5.591394	1	1	X42230	22aa	0.5	1
HSV-1-pUL36	2209	5.591394	1	1	X38260	14aa	0.0	1
HSV-1-pUL37	904	5.591394	1	1	X76395	14aa	3.0	1
HSV-1-pUS6	149	5.591394	1	1	X39539	14aa	0.0	1
HSV-2-pUL1	65	5.591394	1	1	X56056	14aaaA5	1.5	1
JEV-E-BN19	261	5.591394	1	1	X13674	22aa	0.0	1
MV-H-CAM-70	362	5.591394	1	1	X27592	14aa	1.0	1
BoNT-F-Hc	64	5.591394	1	1	X917	14aa	1.5	1

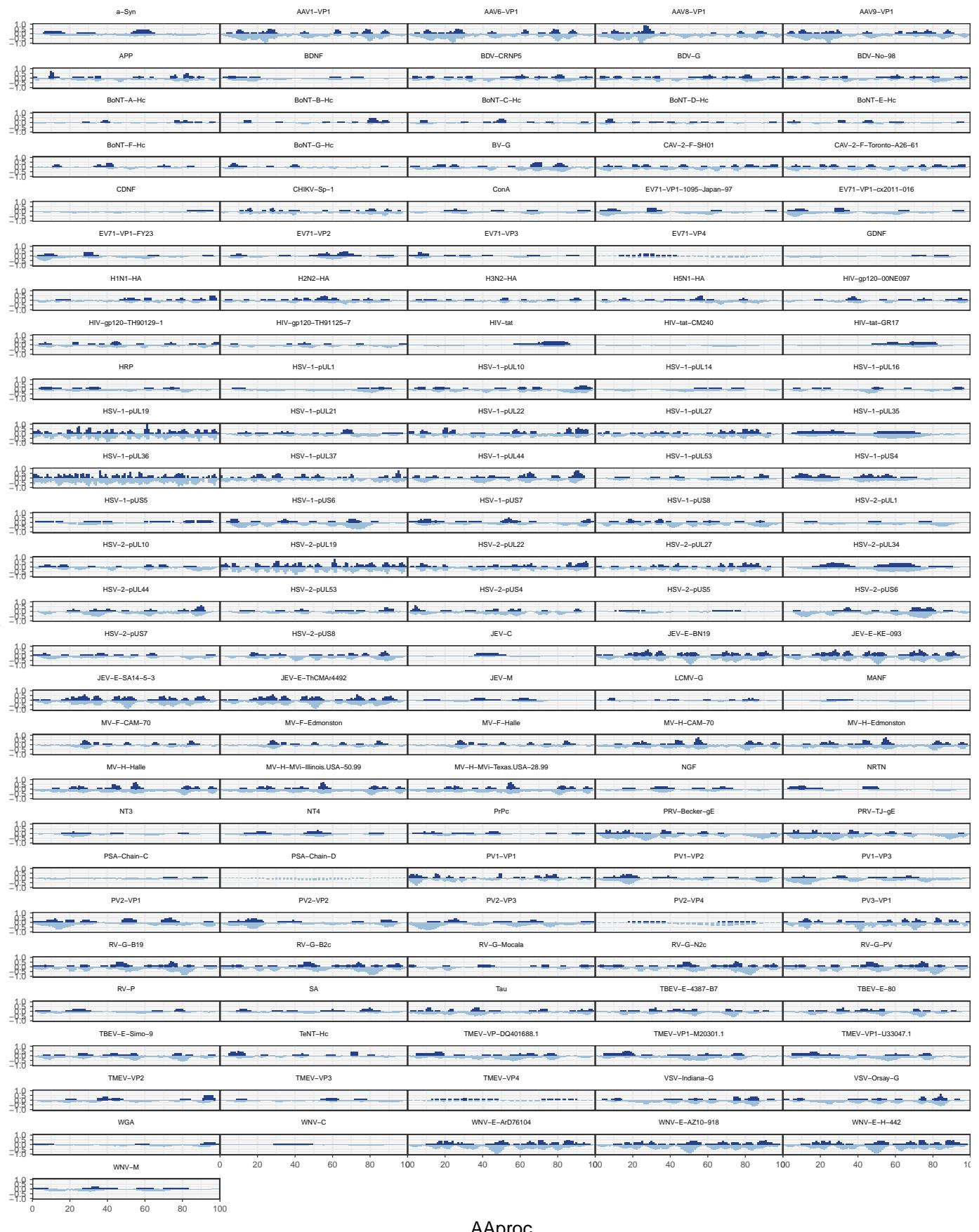
mRNA_30cpc_HEK293T	AA	NormCount	BCcount	AnimalCount	LUTnrs	mainStruct	mismatches	BCanim
MV-H-CAM-70	360	34.00131	2	1	X11283	14aa	0.0	2
HSV-2-pUL44	41	33.01510	2	1	X9283	14aa	0.0	2
HSV-2-pUL44	42	32.46500	2	1	X69016	14aa	0.0	2
EV71-VP1-1095-Japan-97	162	19.35789	1	1	X76120	14aa	0.0	1
CAV-2-F-SH01	439	18.72065	1	1	X10467	14aa	0.0	1
EV71-VP2	112	18.45133	1	1	X65579	14aa	0.5	1
HSV-1-pUL21	269	18.38387	1	1	X50562	14aaA5	3.0	1
APP	420	18.20264	1	1	X66812	22aa	1.5	1
VSV-Indiana-G	31	18.13810	1	1	X16997	14aa	1.0	1
HSV-1-pUS4	142	18.08170	1	1	X702	14aa	1.0	1
HSV-1-pUL19	277	17.92440	1	1	X27468	14aa	0.0	1
HSV-1-pUS6	149	17.65008	1	1	X39539	14aa	0.0	1
HSV-1-pUL16	39	17.55365	1	1	X42230	22aa	0.5	1
HSV-1-pUL19	797	17.48011	1	1	X27258	14aa	1.0	1
HSV-2-pUS7	362	17.36617	1	1	X30845	14aa	0.5	1
BoNT-F-Hc	64	17.29382	1	1	X917	14aa	1.5	1
HSV-1-pUL36	248	17.25072	1	1	X9379	14aa	1.0	1
HSV-1-pUL36	2601	17.22149	1	1	X26960	14aa	0.0	1
HSV-1-pUL22	677	17.15593	1	1	X2113	14aa	0.0	1
HSV-1-pUL53	186	17.14863	1	1	X30100	22aa	0.0	1
RV-G-N2c	24	17.09670	1	1	X65456	22aa	0.0	1
TMEV-VP-DQ401688.1	267	17.08355	1	1	X7512	14aa	1.5	1
AAV8-VP1	456	17.08091	1	1	X11800	14aa	0.0	1
HSV-1-pUL21	498	17.07481	1	1	X44648	14aa	2.0	1
CDNF	134	17.07242	1	1	X29850	14aa	1.0	1
CHIKV-Sp-1	1010	17.06815	1	1	X44074	14aa	2.0	1
MV-H-CAM-70	362	17.05932	1	1	X27592	14aa	1.0	1
RV-G-B19	120	17.05474	1	1	X17010	14aa	0.0	1
PV1-VP2	206	16.97355	1	1	X30460	14aa	0.0	1
PRV-Becker-gE	87	16.90913	1	1	X12187	22aa	3.5	1
TMEV-VP-DQ401688.1	219	16.90764	1	1	X5790	14aa	1.0	1
AAV1-VP1	639	16.88630	1	1	X11627	14aa	0.0	1
PRV-Becker-gE	21	16.86433	1	1	X19568	22aa	2.5	1
HSV-1-pUL27	300	16.62737	1	1	X12537	22aa	0.0	1

B Canim



mRNA_30cpc_Organoid_MD114	AA	NormCount	BCcount	AnimalCount	LUThrs	mainStruct	mismatches	BCanim
HSV-1-pUL19	846	6.641655	3	1	X29937,X29938	14aa	0.25	3
APP	638	5.980463	3	1	X39803,X55577,X86867	14aa,14aaA5,14aaG4S	0.50	3
PRV-Becker-gE	44	31.637538	2	1	X39286	14aa	4.25	2
RV-G-Mocala	201	30.758906	2	1	X10648	14aa	2.50	2
JEV-E-BN19	228	30.727923	2	1	X31994	14aa	0.00	2
PV1-VP1	156	30.163584	2	1	X5492	22aa	1.00	2
H1N1-HA	351	29.706684	2	1	X15254,X63451	14aa,22aa	0.00	2
JEV-E-BN19	347	21.082629	2	1	X10877,X66536	14aa	0.25	2
VSV-Indiana-G	443	18.040994	2	1	X54514,X85804	14aaaA5,14aaaG4S	0.50	2
JEV-E-BN19	450	17.125079	2	1	X20255,X27306	14aa,22aa	0.50	2
TMEV-VP2	101	17.050484	2	1	X58022,X65072	14aa,14aaaA5	0.00	2
JEV-E-BN19	138	16.997286	2	1	X19292,X62833	14aa,22aa	0.75	2
HSV-1-pUL44	462	16.910829	2	1	X54998,X86288	14aaaA5,14aaaG4S	0.00	2
HSV-1-pUL19	1334	16.806299	2	1	X33557,X85263	14aaa,14aaaG4S	0.50	2
HSV-1-pUL22	806	16.448183	2	1	X40211,X43479	14aa	1.50	2
MV-H-CAM-70	345	15.968992	2	1	X12062,X22590	14aa	0.25	2
HSV-1-pUL19	341	7.500687	2	1	X51855	14aaaA5	0.25	2
HSV-1-pUL19	715	6.661127	2	1	X7736	14aa	0.50	2
HSV-1-pUL37	1077	6.661127	2	1	X20913	14aa	0.50	2
PV2-VP1	217	6.661127	2	1	X36211	14aa	1.50	2
TMEV-VP-DQ401688.1	27	6.661127	2	1	X13600	22aa	0.00	2
TMEV-VP2	251	6.661127	2	1	X18890	14aa	0.25	2
HSV-1-pUS4	30	6.316522	2	1	X13347	14aa	1.25	2
TeNT-Hc	325	6.316522	2	1	X7129	14aa	0.00	2
EV71-VP1-1095-Japan-97	91	5.925108	2	1	X74818	14aa	0.25	2
EV71-VP3	23	5.472137	2	1	X47355	14aaaA5	0.75	2
HSV-1-pUL22	174	5.472137	2	1	X22953	14aa	1.00	2
HSV-1-pUL36	1145	5.472137	2	1	X41348	14aa	0.50	2
HIV-gp120-TH90129-1	115	5.472137	2	1	X3436	14aa	0.00	2
BoNT-B-Hc	385	5.472137	2	1	X35767	14aa	0.25	2
VSV-Indiana-G	390	5.472137	2	1	X37509	14aa	0.00	2
AAV8-VP1	206	4.934568	2	1	X69003	14aa	0.00	2
BV-G	273	4.934568	2	1	X19942	22aa	0.50	2
HSV-1-pUL27	729	4.934568	2	1	X66655	14aa	0.50	2
MV-H-CAM-70	278	4.934568	2	1	X17313	14aa	0.25	2
Tau	80	4.934568	2	1	X41806	14aa	1.50	2
BoNT-C-Hc	225	4.934568	2	1	X4632	14aa	0.50	2
TeNT-Hc	34	4.934568	2	1	X34449	14aa	0.50	2
PV1-VP1	483	4.934568	2	1	X14645	14aa	0.50	2
RV-G-Mocala	372	4.934568	2	1	X4926	14aa	1.00	2
TeNT-Hc	53	4.669641	2	1	X59590,X70921	14aa,14aaaA5	1.00	2
HSV-1-pUL36	1152	4.603972	2	1	X14290,X66275	14aa,22aa	0.50	2
JEV-E-BN19	117	4.603972	2	1	X63461,X63465	22aa	1.25	2

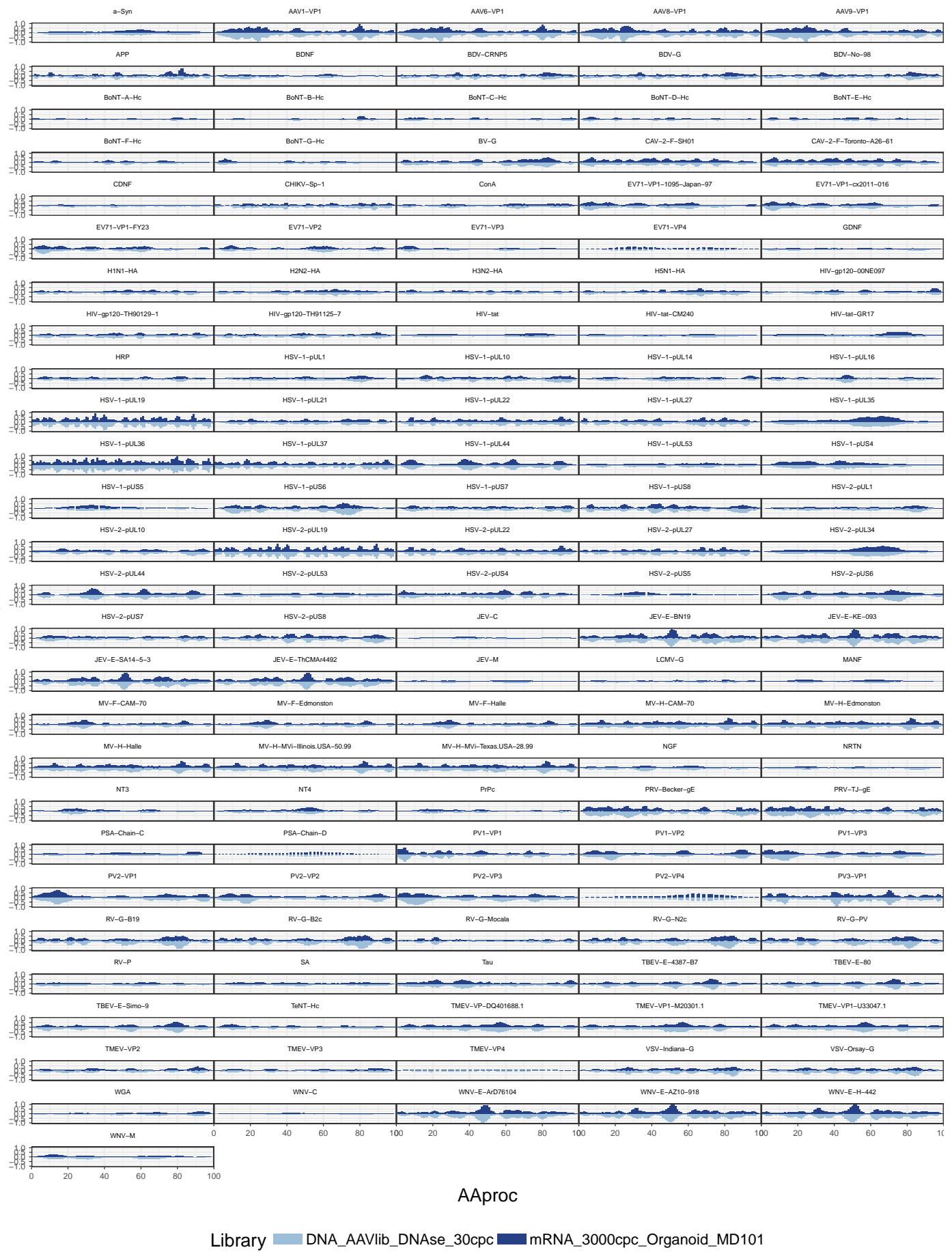
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Library DNA_AAVlib_DNAse_30cpc mRNA_30cpc_Organoid_MD114

mRNA_30cpc_Organoid_MD114	AA	NormCount	BCcount	AnimalCount	LUThrs	mainStruct	mismatches	BCanim
HSV-1-pUL19	846	6.641655	3	1	X29937,X29938	14aa	0.25	3
APP	638	5.980463	3	1	X39803,X55577,X86867	14aa,14aaA5,14aaG4S	0.50	3
PRV-Becker-gE	44	31.637538	2	1	X39286	14aa	4.25	2
RV-G-Mocala	201	30.758906	2	1	X10648	14aa	2.50	2
JEV-E-BN19	228	30.727923	2	1	X31994	14aa	0.00	2
PV1-VP1	156	30.163584	2	1	X5492	22aa	1.00	2
H1N1-HA	351	29.706684	2	1	X15254,X63451	14aa,22aa	0.00	2
JEV-E-BN19	347	21.082629	2	1	X10877,X66536	14aa	0.25	2
VSV-Indiana-G	443	18.040994	2	1	X54514,X85804	14aaaA5,14aaaG4S	0.50	2
JEV-E-BN19	450	17.125079	2	1	X20255,X27306	14aa,22aa	0.50	2
TMEV-VP2	101	17.050484	2	1	X58022,X65072	14aa,14aaaA5	0.00	2
JEV-E-BN19	138	16.997286	2	1	X19292,X62833	14aa,22aa	0.75	2
HSV-1-pUL44	462	16.910829	2	1	X54998,X86288	14aaaA5,14aaaG4S	0.00	2
HSV-1-pUL19	1334	16.806299	2	1	X33557,X85263	14aaa,14aaaG4S	0.50	2
HSV-1-pUL22	806	16.448183	2	1	X40211,X43479	14aa	1.50	2
MV-H-CAM-70	345	15.968992	2	1	X12062,X22590	14aa	0.25	2
HSV-1-pUL19	341	7.500687	2	1	X51855	14aaaA5	0.25	2
HSV-1-pUL19	715	6.661127	2	1	X7736	14aa	0.50	2
HSV-1-pUL37	1077	6.661127	2	1	X20913	14aa	0.50	2
PV2-VP1	217	6.661127	2	1	X36211	14aa	1.50	2
TMEV-VP-DQ401688.1	27	6.661127	2	1	X13600	22aa	0.00	2
TMEV-VP2	251	6.661127	2	1	X18890	14aa	0.25	2
HSV-1-pUS4	30	6.316522	2	1	X13347	14aa	1.25	2
TeNT-Hc	325	6.316522	2	1	X7129	14aa	0.00	2
EV71-VP1-1095-Japan-97	91	5.925108	2	1	X74818	14aa	0.25	2
EV71-VP3	23	5.472137	2	1	X47355	14aaaA5	0.75	2
HSV-1-pUL22	174	5.472137	2	1	X22953	14aa	1.00	2
HSV-1-pUL36	1145	5.472137	2	1	X41348	14aa	0.50	2
HIV-gp120-TH90129-1	115	5.472137	2	1	X3436	14aa	0.00	2
BoNT-B-Hc	385	5.472137	2	1	X35767	14aa	0.25	2
VSV-Indiana-G	390	5.472137	2	1	X37509	14aa	0.00	2
AAV8-VP1	206	4.934568	2	1	X69003	14aa	0.00	2
BV-G	273	4.934568	2	1	X19942	22aa	0.50	2
HSV-1-pUL27	729	4.934568	2	1	X66655	14aa	0.50	2
MV-H-CAM-70	278	4.934568	2	1	X17313	14aa	0.25	2
Tau	80	4.934568	2	1	X41806	14aa	1.50	2
BoNT-C-Hc	225	4.934568	2	1	X4632	14aa	0.50	2
TeNT-Hc	34	4.934568	2	1	X34449	14aa	0.50	2
PV1-VP1	483	4.934568	2	1	X14645	14aa	0.50	2
RV-G-Mocala	372	4.934568	2	1	X4926	14aa	1.00	2
TeNT-Hc	53	4.669641	2	1	X59590,X70921	14aa,14aaaA5	1.00	2
HSV-1-pUL36	1152	4.603972	2	1	X14290,X66275	14aa,22aa	0.50	2
JEV-E-BN19	117	4.603972	2	1	X63461,X63465	22aa	1.25	2

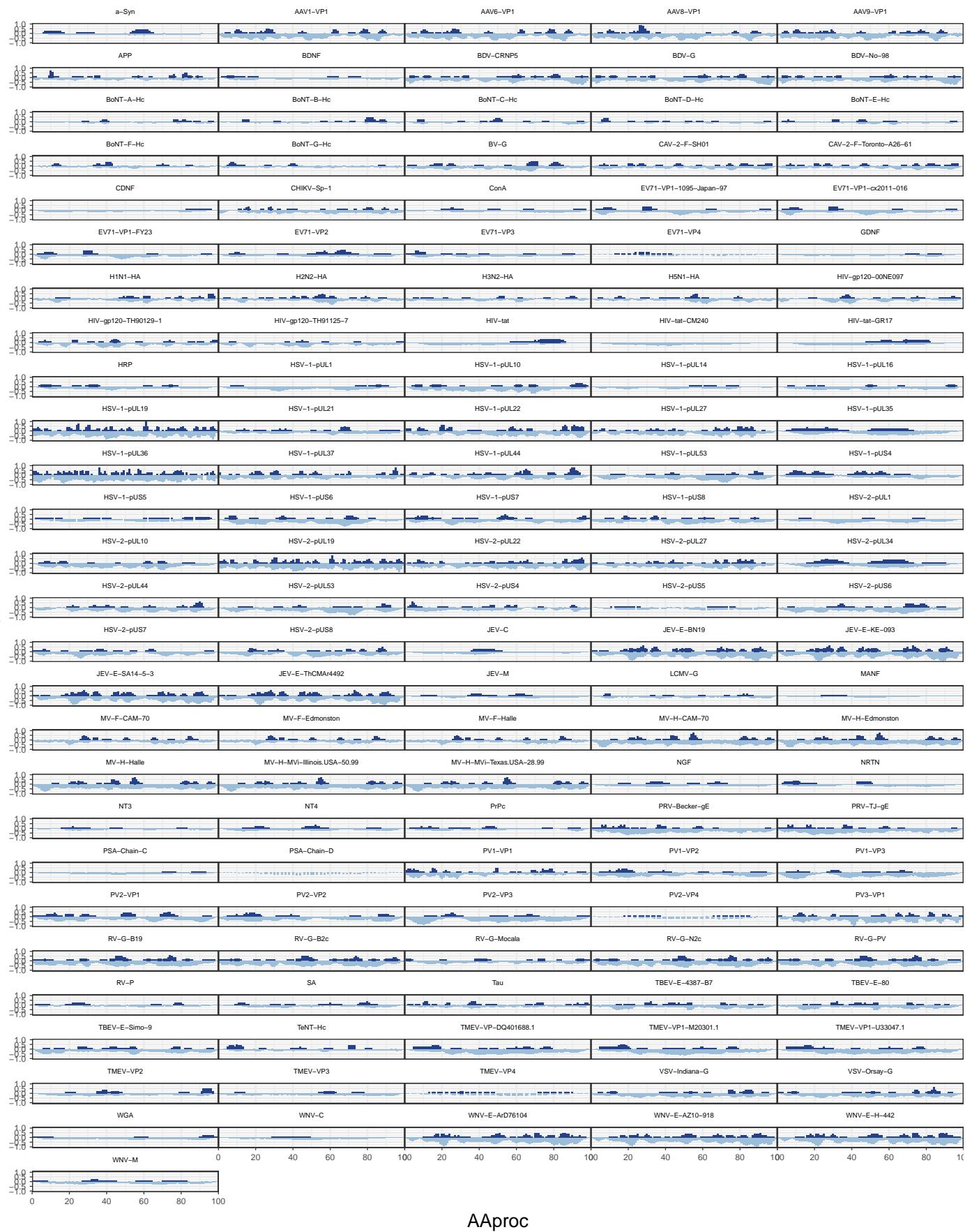
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Library DNA_AAVlib_DNAse_30cpc mRNA_3000cpc_Organoid_MD101

mRNA_3000cpc_Organoid_MD101	AA	NormCount	BCcount	AnimalCount	LUTnrs	mainStruct	mismatches	BCanim
APP	636	337.7812	26	1	X64911,X67260	14aa,22aa	0.750	26
JEV-E-BN19	261	242.3096	23	1	X13674,X18853,X18855,X42671,X42673,X56323,X87613	14aa,14aaA5,14aaG4S,22aa	0.500	23
HSV-1-pUL19	845	245.8552	20	1	X47263,X47264,X7793,X7795,X78554	14aa,14aaA5,14aaG4S	0.500	20
HSV-1-pUL36	1536	228.3774	19	1	X14875,X24780	14aa,22aa	1.250	19
WNV-E-AZ10-918	156	215.8863	19	1	X62526,X68261,X68262	14aa,22aa	0.750	19
APP	638	251.1136	18	1	X39803,X55577,X86867	14aa,14aaA5,14aaG4S	1.000	18
H5N1-HA	263	223.7209	17	1	X2967,X46009	14aa,14aaA5	0.875	17
APP	639	215.7819	17	1	X13535,X524	14aa,22aa	0.500	17
BoNT-B-Hc	380	206.6019	17	1	X21416,X50793,X82083	14aa,14aaA5,14aaG4S	0.500	17
HSV-1-pUL27	38	182.7648	16	1	X41585,X56047,X87337	14aa,14aaA5,14aaG4S	0.500	16
AAV1-VP1	135	159.7935	16	1	X22798,X22799,X24680,X26462,X27760	14aa,22aa	0.750	16
PV1-VP1	45	158.3001	16	1	X10131,X10134,X62533,X62703,X62705	14aa,22aa	0.500	16
HSV-1-pUL19	843	178.7358	15	1	X71450,X71451	14aa	0.125	15
AAV1-VP1	598	177.6452	15	1	X23344,X23345	14aa	0.250	15
HSV-1-pUL37	1068	175.0152	15	1	X26767,X35377	14aa,22aa	1.375	15
PV1-VP2	158	164.1409	15	1	X57670,X63750,X88960	14aa,14aaA5,14aaG4S	0.250	15
AAV1-VP1	177	153.1777	15	1	X23308,X23310,X26310,X26311	14aa,22aa	0.500	15
PV1-VP1	48	152.7823	15	1	X15472,X17177,X17179,X17181,X7380	14aa,22aa	0.500	15
HSV-1-pUL19	480	151.5009	15	1	X16006,X68180,X69165,X69175	14aa,22aa	0.375	15
JEV-E-BN19	265	150.5000	15	1	X19804,X19805,X39119,X42672,X55390,X86680	14aa,14aaA5,14aaG4S,22aa	0.625	15
HSV-1-pUL36	1145	170.1763	14	1	X41348,X55990	14aa,14aaA5	0.125	14
HSV-1-pUL22	74	158.7010	14	1	X41723,X41744,X56090,X87380	14aa,14aaA5,14aaG4S	1.000	14
HSV-1-pUL10	81	152.0306	14	1	X39898,X43304,X65618,X68435	14aa,22aa	0.875	14
HSV-1-pUL19	278	149.4416	14	1	X57438,X62892,X62894	14aa,14aaA5	1.000	14
HSV-1-pUL19	1224	149.4308	14	1	X33947,X33948,X69675,X69677	14aa,22aa	1.500	14
AAV1-VP1	105	144.6069	14	1	X1081,X1083,X43336,X43337	14aa,22aa	0.750	14
HSV-1-pUL19	428	140.5595	14	1	X57637,X57638,X63627,X63629,X88928	14aa,14aaA5,14aaG4S	0.000	14
PV1-VP1	15	157.9496	13	1	X11154,X19027	14aa,22aa	0.000	13
HSV-1-pUL36	2511	153.3157	13	1	X1237,X21330	14aa,22aa	0.375	13
HSV-2-pUL22	306	151.2805	13	1	X31974,X61125	14aa,22aa	0.875	13
AAV8-VP1	599	143.6367	13	1	X41669,X56070,X87360	14aa,14aaA5,14aaG4S	1.000	13
HSV-1-pUS6	74	143.3004	13	1	X44094,X56673,X87963	14aa,14aaA5,14aaG4S	0.000	13
HSV-1-pUL19	425	141.4650	13	1	X41345,X41347,X55989	14aa,14aaA5	0.500	13
HSV-1-pUL36	29	138.9027	13	1	X47569,X78859,X8923	14aa,14aaA5,14aaG4S	0.500	13
JEV-E-BN19	317	138.1967	13	1	X75754,X75795,X75838,X92133	14aa,14aaG4S	0.125	13
PRV-Becker-gE	212	138.1355	13	1	X44646,X44647,X56820,X88110	14aa,14aaA5,14aaG4S	0.500	13
JEV-E-BN19	263	137.0854	13	1	X57170,X57171,X61809,X61811	14aa,14aaA5	0.125	13
PV3-VP1	416	135.2199	13	1	X27651,X52406,X83696	14aa,14aaA5,14aaG4S	0.000	13
HIV-tat-GR17	77	133.8956	13	1	X23115,X51225,X82515	14aa,14aaA5,14aaG4S	0.000	13
PV1-VP2	245	133.3091	13	1	X60836,X60919,X75762,X76089,X92126,X92209	14aa,14aaA5,14aaG4S	0.750	13
TBEV-E-4387-B7	371	127.0879	13	1	X16042,X16059,X20526,X80729	14aa,14aaG4S,22aa	0.000	13
HSV-1-pUL19	152	126.8853	13	1	X57715,X57716,X63903,X63905,X89005	14aa,14aaA5,14aaG4S	0.750	13
JEV-E-BN19	260	125.0424	13	1	X16286,X58978,X68685,X68687,X90267,X90268	14aa,14aaA5,14aaG4S	0.500	13
HSV-1-pUL19	555	124.9343	13	1	X17574,X17576,X36740,X36741	14aa,22aa	0.250	13
APP	86	162.7678	12	1	X38162,X55148,X86438	14aa,14aaA5,14aaG4S	2.000	12
MV-H-CAM-70	278	159.2624	12	1	X17313,X49756	14aa,14aaA5	0.000	12
HSV-1-pUL19	51	153.9232	12	1	X12512,X12530	14aa	0.000	12
PSA-Chain-C	163	153.3251	12	1	X2412	14aa	1.500	12
HSV-1-pUL36	1146	150.8631	12	1	X18070,X21423	14aa,22aa	2.000	12
MV-H-CAM-70	165	147.1937	12	1	X43711,X73098,X73101	14aa,22aa	0.500	12

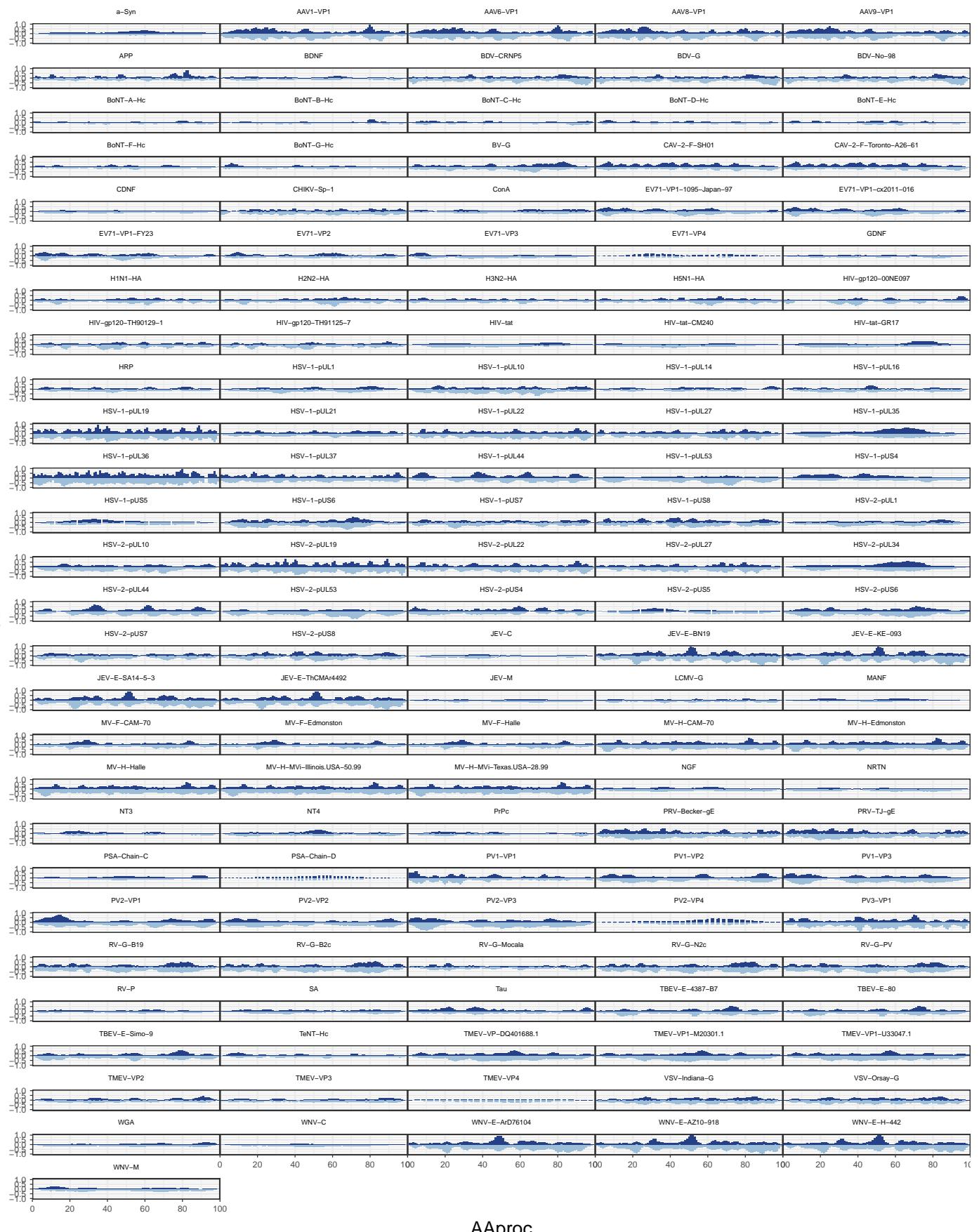
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Library DNA_pscAAVlib mRNA_30cpc_Organoid_MD114

mRNA_30cpc_Organoid_MD114	AA	NormCount	BCcount	AnimalCount	LUThr	mainStruct	mismatches	BCanim
HSV-1-pUL19	846	6.641655	3	1	X29937,X29938	14aa	0.25	3
APP	638	5.980463	3	1	X39803,X55577,X86867	14aa,14aaA5,14aaG4S	0.50	3
PRV-Becker-gE	44	31.637538	2	1	X39286	14aa	4.25	2
RV-G-Mocala	201	30.758906	2	1	X10648	14aa	2.50	2
JEV-E-BN19	228	30.727923	2	1	X31994	14aa	0.00	2
PV1-VP1	156	30.163584	2	1	X5492	22aa	1.00	2
H1N1-HA	351	29.706684	2	1	X15254,X63451	14aa,22aa	0.00	2
JEV-E-BN19	347	21.082629	2	1	X10877,X66536	14aa	0.25	2
VSV-Indiana-G	443	18.040994	2	1	X54514,X85804	14aaaA5,14aaaG4S	0.50	2
JEV-E-BN19	450	17.125079	2	1	X20255,X27306	14aa,22aa	0.50	2
TMEV-VP2	101	17.050484	2	1	X58022,X65072	14aa,14aaaA5	0.00	2
JEV-E-BN19	138	16.997286	2	1	X19292,X62833	14aa,22aa	0.75	2
HSV-1-pUL44	462	16.910829	2	1	X54998,X86288	14aaaA5,14aaaG4S	0.00	2
HSV-1-pUL19	1334	16.806299	2	1	X33557,X85263	14aaa,14aaaG4S	0.50	2
HSV-1-pUL22	806	16.448183	2	1	X40211,X43479	14aa	1.50	2
MV-H-CAM-70	345	15.968992	2	1	X12062,X22590	14aa	0.25	2
HSV-1-pUL19	341	7.500687	2	1	X51855	14aaaA5	0.25	2
HSV-1-pUL19	715	6.661127	2	1	X7736	14aa	0.50	2
HSV-1-pUL37	1077	6.661127	2	1	X20913	14aa	0.50	2
PV2-VP1	217	6.661127	2	1	X36211	14aa	1.50	2
TMEV-VP-DQ401688.1	27	6.661127	2	1	X13600	22aa	0.00	2
TMEV-VP2	251	6.661127	2	1	X18890	14aa	0.25	2
HSV-1-pUS4	30	6.316522	2	1	X13347	14aa	1.25	2
TeNT-Hc	325	6.316522	2	1	X7129	14aa	0.00	2
EV71-VP1-1095-Japan-97	91	5.925108	2	1	X74818	14aa	0.25	2
EV71-VP3	23	5.472137	2	1	X47355	14aaaA5	0.75	2
HSV-1-pUL22	174	5.472137	2	1	X22953	14aa	1.00	2
HSV-1-pUL36	1145	5.472137	2	1	X41348	14aa	0.50	2
HIV-gp120-TH90129-1	115	5.472137	2	1	X3436	14aa	0.00	2
BoNT-B-Hc	385	5.472137	2	1	X35767	14aa	0.25	2
VSV-Indiana-G	390	5.472137	2	1	X37509	14aa	0.00	2
AAV8-VP1	206	4.934568	2	1	X69003	14aa	0.00	2
BV-G	273	4.934568	2	1	X19942	22aa	0.50	2
HSV-1-pUL27	729	4.934568	2	1	X66655	14aa	0.50	2
MV-H-CAM-70	278	4.934568	2	1	X17313	14aa	0.25	2
Tau	80	4.934568	2	1	X41806	14aa	1.50	2
BoNT-C-Hc	225	4.934568	2	1	X4632	14aa	0.50	2
TeNT-Hc	34	4.934568	2	1	X34449	14aa	0.50	2
PV1-VP1	483	4.934568	2	1	X14645	14aa	0.50	2
RV-G-Mocala	372	4.934568	2	1	X4926	14aa	1.00	2
TeNT-Hc	53	4.669641	2	1	X59590,X70921	14aa,14aaaA5	1.00	2
HSV-1-pUL36	1152	4.603972	2	1	X14290,X66275	14aa,22aa	0.50	2
JEV-E-BN19	117	4.603972	2	1	X63461,X63465	22aa	1.25	2

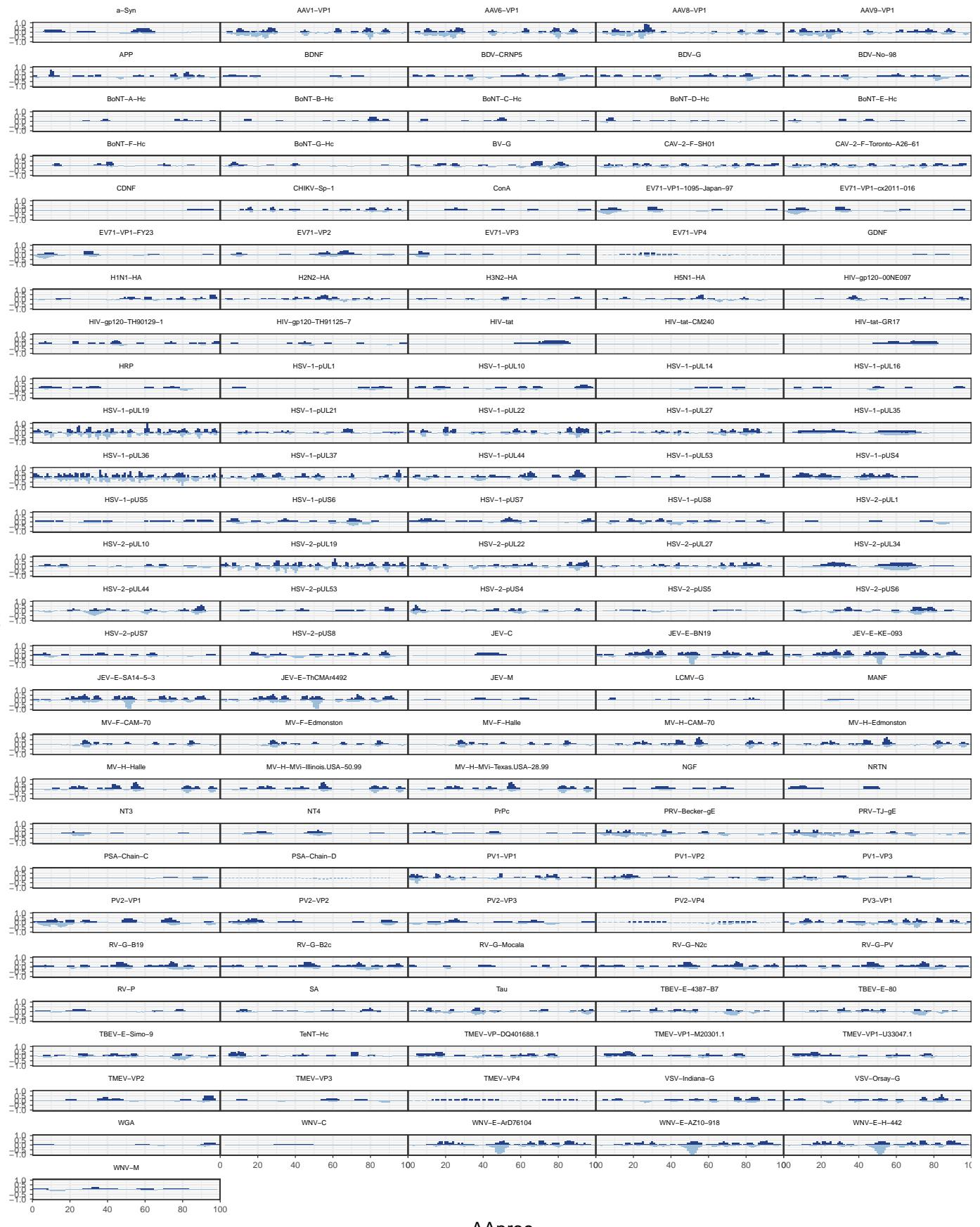
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Library DNA_pscAAVlib mRNA_3000cpc_Organoid_MD101

mRNA_3000cpc_Organoid_MD101	AA	NormCount	BCcount	AnimalCount	LUTnrs	mainStruct	mismatches	BCanim
APP	636	337.7812	26	1	X64911,X67260	14aa,22aa	0.750	26
JEV-E-BN19	261	242.3096	23	1	X13674,X18853,X18855,X42671,X42673,X56323,X87613	14aa,14aaA5,14aaG4S,22aa	0.500	23
HSV-1-pUL19	845	245.8552	20	1	X47263,X47264,X7793,X7795,X78554	14aa,14aaA5,14aaG4S	0.500	20
HSV-1-pUL36	1536	228.3774	19	1	X14875,X24780	14aa,22aa	1.250	19
WNV-E-AZ10-918	156	215.8863	19	1	X62526,X68261,X68262	14aa,22aa	0.750	19
APP	638	251.1136	18	1	X39803,X55577,X86867	14aa,14aaA5,14aaG4S	1.000	18
H5N1-HA	263	223.7209	17	1	X2967,X46009	14aa,14aaA5	0.875	17
APP	639	215.7819	17	1	X13535,X524	14aa,22aa	0.500	17
BoNT-B-Hc	380	206.6019	17	1	X21416,X50793,X82083	14aa,14aaA5,14aaG4S	0.500	17
HSV-1-pUL27	38	182.7648	16	1	X41585,X56047,X87337	14aa,14aaA5,14aaG4S	0.500	16
AAV1-VP1	135	159.7935	16	1	X22798,X22799,X24680,X26462,X27760	14aa,22aa	0.750	16
PV1-VP1	45	158.3001	16	1	X10131,X10134,X62533,X62703,X62705	14aa,22aa	0.500	16
HSV-1-pUL19	843	178.7358	15	1	X71450,X71451	14aa	0.125	15
AAV1-VP1	598	177.6452	15	1	X23344,X23345	14aa	0.250	15
HSV-1-pUL37	1068	175.0152	15	1	X26767,X35377	14aa,22aa	1.375	15
PV1-VP2	158	164.1409	15	1	X57670,X63750,X88960	14aa,14aaA5,14aaG4S	0.250	15
AAV1-VP1	177	153.1777	15	1	X23308,X23310,X26310,X26311	14aa,22aa	0.500	15
PV1-VP1	48	152.7823	15	1	X15472,X17177,X17179,X17181,X7380	14aa,22aa	0.500	15
HSV-1-pUL19	480	151.5009	15	1	X16006,X68180,X69165,X69175	14aa,22aa	0.375	15
JEV-E-BN19	265	150.5000	15	1	X19804,X19805,X39119,X42672,X55390,X86680	14aa,14aaA5,14aaG4S,22aa	0.625	15
HSV-1-pUL36	1145	170.1763	14	1	X41348,X55990	14aa,14aaA5	0.125	14
HSV-1-pUL22	74	158.7010	14	1	X41723,X41744,X56090,X87380	14aa,14aaA5,14aaG4S	1.000	14
HSV-1-pUL10	81	152.0306	14	1	X39898,X43304,X65618,X68435	14aa,22aa	0.875	14
HSV-1-pUL19	278	149.4416	14	1	X57438,X62892,X62894	14aa,14aaA5	1.000	14
HSV-1-pUL19	1224	149.4308	14	1	X33947,X33948,X69675,X69677	14aa,22aa	1.500	14
AAV1-VP1	105	144.6069	14	1	X1081,X1083,X43336,X43337	14aa,22aa	0.750	14
HSV-1-pUL19	428	140.5595	14	1	X57637,X57638,X63627,X63629,X88928	14aa,14aaA5,14aaG4S	0.000	14
PV1-VP1	15	157.9496	13	1	X11154,X19027	14aa,22aa	0.000	13
HSV-1-pUL36	2511	153.3157	13	1	X1237,X21330	14aa,22aa	0.375	13
HSV-2-pUL22	306	151.2805	13	1	X31974,X61125	14aa,22aa	0.875	13
AAV8-VP1	599	143.6367	13	1	X41669,X56070,X87360	14aa,14aaA5,14aaG4S	1.000	13
HSV-1-pUS6	74	143.3004	13	1	X44094,X56673,X87963	14aa,14aaA5,14aaG4S	0.000	13
HSV-1-pUL19	425	141.4650	13	1	X41345,X41347,X55989	14aa,14aaA5	0.500	13
HSV-1-pUL36	29	138.9027	13	1	X47569,X78859,X8923	14aa,14aaA5,14aaG4S	0.500	13
JEV-E-BN19	317	138.1967	13	1	X75754,X75795,X75838,X92133	14aa,14aaG4S	0.125	13
PRV-Becker-gE	212	138.1355	13	1	X44646,X44647,X56820,X88110	14aa,14aaA5,14aaG4S	0.500	13
JEV-E-BN19	263	137.0854	13	1	X57170,X57171,X61809,X61811	14aa,14aaA5	0.125	13
PV3-VP1	416	135.2199	13	1	X27651,X52406,X83696	14aa,14aaA5,14aaG4S	0.000	13
HIV-tat-GR17	77	133.8956	13	1	X23115,X51225,X82515	14aa,14aaA5,14aaG4S	0.000	13
PV1-VP2	245	133.3091	13	1	X60836,X60919,X75762,X76089,X92126,X92209	14aa,14aaA5,14aaG4S	0.750	13
TBEV-E-4387-B7	371	127.0879	13	1	X16042,X16059,X20526,X80729	14aa,14aaG4S,22aa	0.000	13
HSV-1-pUL19	152	126.8853	13	1	X57715,X57716,X63903,X63905,X89005	14aa,14aaA5,14aaG4S	0.750	13
JEV-E-BN19	260	125.0424	13	1	X16286,X58978,X68685,X68687,X90267,X90268	14aa,14aaA5,14aaG4S	0.500	13
HSV-1-pUL19	555	124.9343	13	1	X17574,X17576,X36740,X36741	14aa,22aa	0.250	13
APP	86	162.7678	12	1	X38162,X55148,X86438	14aa,14aaA5,14aaG4S	2.000	12
MV-H-CAM-70	278	159.2624	12	1	X17313,X49756	14aa,14aaA5	0.000	12
HSV-1-pUL19	51	153.9232	12	1	X12512,X12530	14aa	0.000	12
PSA-Chain-C	163	153.3251	12	1	X2412	14aa	1.500	12
HSV-1-pUL36	1146	150.8631	12	1	X18070,X21423	14aa,22aa	2.000	12
MV-H-CAM-70	165	147.1937	12	1	X43711,X73098,X73101	14aa,22aa	0.500	12

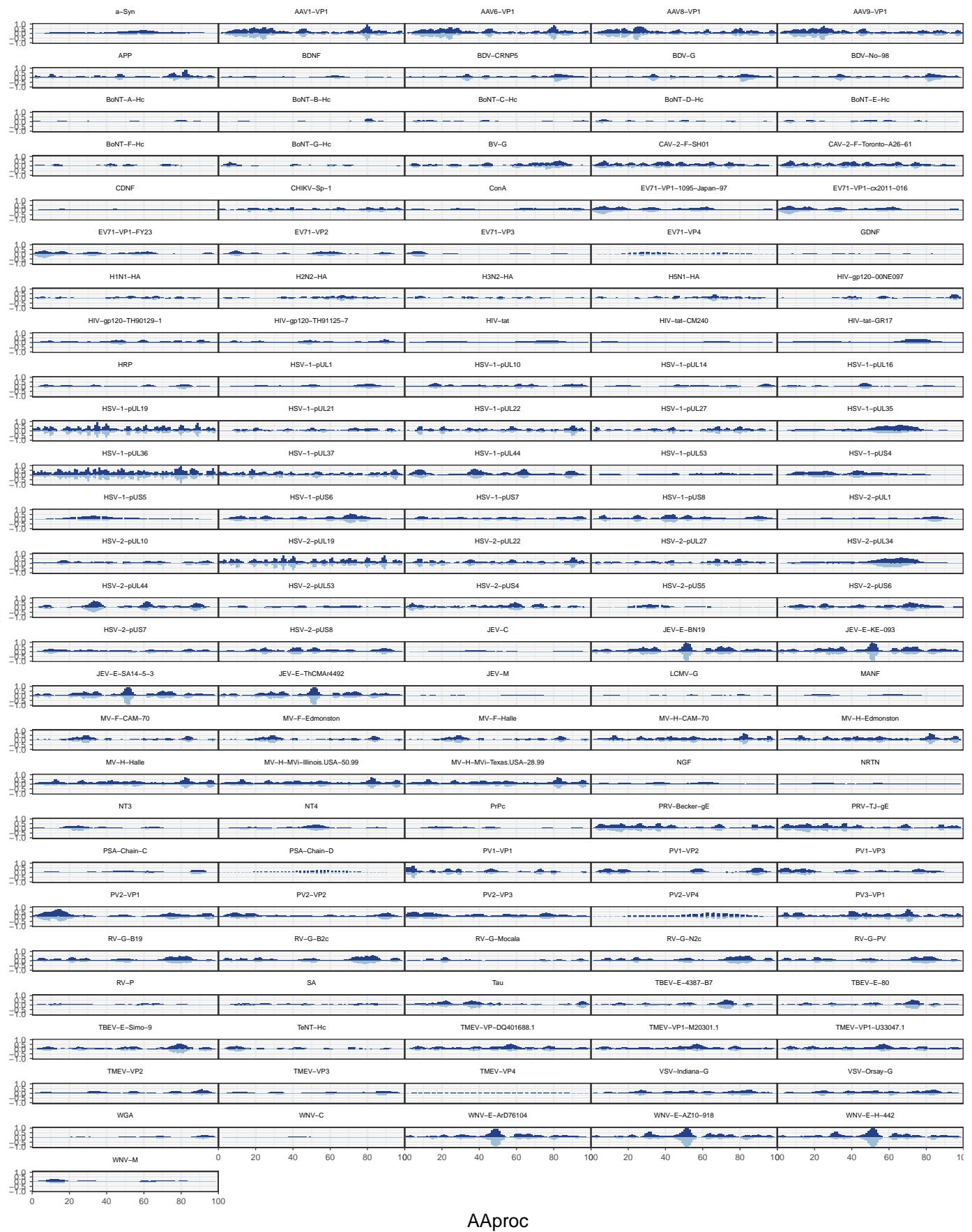
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Library mRNA_30cpc_Organoid_MD114 mRNA_All

mRNA_30cpc_Organoid_MD114	AA	NormCount	BCcount	AnimalCount	LUThr	mainStruct	mismatches	BCanim
HSV-1-pUL19	846	6.641655	3	1	X29937,X29938	14aa	0.25	3
APP	638	5.980463	3	1	X39803,X55577,X86867	14aa,14aaA5,14aaG4S	0.50	3
PRV-Becker-gE	44	31.637538	2	1	X39286	14aa	4.25	2
RV-G-Mocala	201	30.758906	2	1	X10648	14aa	2.50	2
JEV-E-BN19	228	30.727923	2	1	X31994	14aa	0.00	2
PV1-VP1	156	30.163584	2	1	X5492	22aa	1.00	2
H1N1-HA	351	29.706684	2	1	X15254,X63451	14aa,22aa	0.00	2
JEV-E-BN19	347	21.082629	2	1	X10877,X66536	14aa	0.25	2
VSV-Indiana-G	443	18.040994	2	1	X54514,X85804	14aaaA5,14aaaG4S	0.50	2
JEV-E-BN19	450	17.125079	2	1	X20255,X27306	14aa,22aa	0.50	2
TMEV-VP2	101	17.050484	2	1	X58022,X65072	14aa,14aaaA5	0.00	2
JEV-E-BN19	138	16.997286	2	1	X19292,X62833	14aa,22aa	0.75	2
HSV-1-pUL44	462	16.910829	2	1	X54998,X86288	14aaaA5,14aaaG4S	0.00	2
HSV-1-pUL19	1334	16.806299	2	1	X33557,X85263	14aaa,14aaaG4S	0.50	2
HSV-1-pUL22	806	16.448183	2	1	X40211,X43479	14aa	1.50	2
MV-H-CAM-70	345	15.968992	2	1	X12062,X22590	14aa	0.25	2
HSV-1-pUL19	341	7.500687	2	1	X51855	14aaaA5	0.25	2
HSV-1-pUL19	715	6.661127	2	1	X7736	14aa	0.50	2
HSV-1-pUL37	1077	6.661127	2	1	X20913	14aa	0.50	2
PV2-VP1	217	6.661127	2	1	X36211	14aa	1.50	2
TMEV-VP-DQ401688.1	27	6.661127	2	1	X13600	22aa	0.00	2
TMEV-VP2	251	6.661127	2	1	X18890	14aa	0.25	2
HSV-1-pUS4	30	6.316522	2	1	X13347	14aa	1.25	2
TeNT-Hc	325	6.316522	2	1	X7129	14aa	0.00	2
EV71-VP1-1095-Japan-97	91	5.925108	2	1	X74818	14aa	0.25	2
EV71-VP3	23	5.472137	2	1	X47355	14aaaA5	0.75	2
HSV-1-pUL22	174	5.472137	2	1	X22953	14aa	1.00	2
HSV-1-pUL36	1145	5.472137	2	1	X41348	14aa	0.50	2
HIV-gp120-TH90129-1	115	5.472137	2	1	X3436	14aa	0.00	2
BoNT-B-Hc	385	5.472137	2	1	X35767	14aa	0.25	2
VSV-Indiana-G	390	5.472137	2	1	X37509	14aa	0.00	2
AAV8-VP1	206	4.934568	2	1	X69003	14aa	0.00	2
BV-G	273	4.934568	2	1	X19942	22aa	0.50	2
HSV-1-pUL27	729	4.934568	2	1	X66655	14aa	0.50	2
MV-H-CAM-70	278	4.934568	2	1	X17313	14aa	0.25	2
Tau	80	4.934568	2	1	X41806	14aa	1.50	2
BoNT-C-Hc	225	4.934568	2	1	X4632	14aa	0.50	2
TeNT-Hc	34	4.934568	2	1	X34449	14aa	0.50	2
PV1-VP1	483	4.934568	2	1	X14645	14aa	0.50	2
RV-G-Mocala	372	4.934568	2	1	X4926	14aa	1.00	2
TeNT-Hc	53	4.669641	2	1	X59590,X70921	14aa,14aaaA5	1.00	2
HSV-1-pUL36	1152	4.603972	2	1	X14290,X66275	14aa,22aa	0.50	2
JEV-E-BN19	117	4.603972	2	1	X63461,X63465	22aa	1.25	2

BCanim



Library mRNA_3000cpc_Organoid_MD101 mRNA_All

mRNA_3000cpc_Organoid_MD101	AA	NormCount	BCcount	AnimalCount	LUTnrs	mainStruct	mismatches	BCanim
APP	636	337.7812	26	1	X64911,X67260	14aa,22aa	0.750	26
JEV-E-BN19	261	242.3096	23	1	X13674,X18853,X18855,X42671,X42673,X56323,X87613	14aa,14aaA5,14aaG4S,22aa	0.500	23
HSV-1-pUL19	845	245.8552	20	1	X47263,X47264,X7793,X7795,X78554	14aa,14aaA5,14aaG4S	0.500	20
HSV-1-pUL36	1536	228.3774	19	1	X14875,X24780	14aa,22aa	1.250	19
WNV-E-AZ10-918	156	215.8863	19	1	X62526,X68261,X68262	14aa,22aa	0.750	19
APP	638	251.1136	18	1	X39803,X55577,X86867	14aa,14aaA5,14aaG4S	1.000	18
H5N1-HA	263	223.7209	17	1	X2967,X46009	14aa,14aaA5	0.875	17
APP	639	215.7819	17	1	X13535,X524	14aa,22aa	0.500	17
BoNT-B-Hc	380	206.6019	17	1	X21416,X50793,X82083	14aa,14aaA5,14aaG4S	0.500	17
HSV-1-pUL27	38	182.7648	16	1	X41585,X56047,X87337	14aa,14aaA5,14aaG4S	0.500	16
AAV1-VP1	135	159.7935	16	1	X22798,X22799,X24680,X26462,X27760	14aa,22aa	0.750	16
PV1-VP1	45	158.3001	16	1	X10131,X10134,X62533,X62703,X62705	14aa,22aa	0.500	16
HSV-1-pUL19	843	178.7358	15	1	X71450,X71451	14aa	0.125	15
AAV1-VP1	598	177.6452	15	1	X23344,X23345	14aa	0.250	15
HSV-1-pUL37	1068	175.0152	15	1	X26767,X35377	14aa,22aa	1.375	15
PV1-VP2	158	164.1409	15	1	X57670,X63750,X88960	14aa,14aaA5,14aaG4S	0.250	15
AAV1-VP1	177	153.1777	15	1	X23308,X23310,X26310,X26311	14aa,22aa	0.500	15
PV1-VP1	48	152.7823	15	1	X15472,X17177,X17179,X17181,X7380	14aa,22aa	0.500	15
HSV-1-pUL19	480	151.5009	15	1	X16006,X68180,X69165,X69175	14aa,22aa	0.375	15
JEV-E-BN19	265	150.5000	15	1	X19804,X19805,X39119,X42672,X55390,X86680	14aa,14aaA5,14aaG4S,22aa	0.625	15
HSV-1-pUL36	1145	170.1763	14	1	X41348,X55990	14aa,14aaA5	0.125	14
HSV-1-pUL22	74	158.7010	14	1	X41723,X41744,X56090,X87380	14aa,14aaA5,14aaG4S	1.000	14
HSV-1-pUL10	81	152.0306	14	1	X39898,X43304,X65618,X68435	14aa,22aa	0.875	14
HSV-1-pUL19	278	149.4416	14	1	X57438,X62892,X62894	14aa,14aaA5	1.000	14
HSV-1-pUL19	1224	149.4308	14	1	X33947,X33948,X69675,X69677	14aa,22aa	1.500	14
AAV1-VP1	105	144.6069	14	1	X1081,X1083,X43336,X43337	14aa,22aa	0.750	14
HSV-1-pUL19	428	140.5595	14	1	X57637,X57638,X63627,X63629,X88928	14aa,14aaA5,14aaG4S	0.000	14
PV1-VP1	15	157.9496	13	1	X11154,X19027	14aa,22aa	0.000	13
HSV-1-pUL36	2511	153.3157	13	1	X1237,X21330	14aa,22aa	0.375	13
HSV-2-pUL22	306	151.2805	13	1	X31974,X61125	14aa,22aa	0.875	13
AAV8-VP1	599	143.6367	13	1	X41669,X56070,X87360	14aa,14aaA5,14aaG4S	1.000	13
HSV-1-pUS6	74	143.3004	13	1	X44094,X56673,X87963	14aa,14aaA5,14aaG4S	0.000	13
HSV-1-pUL19	425	141.4650	13	1	X41345,X41347,X55989	14aa,14aaA5	0.500	13
HSV-1-pUL36	29	138.9027	13	1	X47569,X78859,X8923	14aa,14aaA5,14aaG4S	0.500	13
JEV-E-BN19	317	138.1967	13	1	X75754,X75795,X75838,X92133	14aa,14aaG4S	0.125	13
PRV-Becker-gE	212	138.1355	13	1	X44646,X44647,X56820,X88110	14aa,14aaA5,14aaG4S	0.500	13
JEV-E-BN19	263	137.0854	13	1	X57170,X57171,X61809,X61811	14aa,14aaA5	0.125	13
PV3-VP1	416	135.2199	13	1	X27651,X52406,X83696	14aa,14aaA5,14aaG4S	0.000	13
HIV-tat-GR17	77	133.8956	13	1	X23115,X51225,X82515	14aa,14aaA5,14aaG4S	0.000	13
PV1-VP2	245	133.3091	13	1	X60836,X60919,X75762,X76089,X92126,X92209	14aa,14aaA5,14aaG4S	0.750	13
TBEV-E-4387-B7	371	127.0879	13	1	X16042,X16059,X20526,X80729	14aa,14aaG4S,22aa	0.000	13
HSV-1-pUL19	152	126.8853	13	1	X57715,X57716,X63903,X63905,X89005	14aa,14aaA5,14aaG4S	0.750	13
JEV-E-BN19	260	125.0424	13	1	X16286,X58978,X68685,X68687,X90267,X90268	14aa,14aaA5,14aaG4S	0.500	13
HSV-1-pUL19	555	124.9343	13	1	X17574,X17576,X36740,X36741	14aa,22aa	0.250	13
APP	86	162.7678	12	1	X38162,X55148,X86438	14aa,14aaA5,14aaG4S	2.000	12
MV-H-CAM-70	278	159.2624	12	1	X17313,X49756	14aa,14aaA5	0.000	12
HSV-1-pUL19	51	153.9232	12	1	X12512,X12530	14aa	0.000	12
PSA-Chain-C	163	153.3251	12	1	X2412	14aa	1.500	12
HSV-1-pUL36	1146	150.8631	12	1	X18070,X21423	14aa,22aa	2.000	12
MV-H-CAM-70	165	147.1937	12	1	X43711,X73098,X73101	14aa,22aa	0.500	12

```

print("Total analysis time:")
[1] "Total analysis time:"
print(Sys.time() - strt1)

Time difference of 4.092486 hours

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     2020-11-05

Packages -----
package      * version date      source
acepack        1.4.1   2016-10-29 CRAN (R 3.4.2)
AnnotationDbi    1.38.2  2017-11-29 Bioconductor
AnnotationFilter  1.0.0   2017-11-29 Bioconductor
AnnotationHub     2.8.3   2017-11-29 Bioconductor
backports        1.1.1   2017-09-25 CRAN (R 3.4.2)
base            * 3.4.2   2017-10-06 local
base64enc        0.1-3   2015-07-28 CRAN (R 3.4.2)
Biobase          * 2.36.2  2017-11-29 Bioconductor
BiocGenerics     * 0.22.1  2017-11-29 Bioconductor
BiocInstaller     1.26.1  2017-10-10 Bioconductor
BiocParallel      1.10.1  2017-11-29 Bioconductor
biomaRt          2.32.1  2017-11-29 Bioconductor
Biostrings        * 2.44.2  2017-11-29 Bioconductor
biovizBase        1.24.0  2017-11-29 Bioconductor
bit              1.1-12   2014-04-09 CRAN (R 3.4.2)
bit64             0.9-7   2017-05-08 CRAN (R 3.4.2)
bitops            1.0-6   2013-08-17 CRAN (R 3.4.2)
blob              1.1.0   2017-06-17 CRAN (R 3.4.2)
BSgenome          1.44.2  2017-11-29 Bioconductor
checkmate         1.8.4   2017-09-25 CRAN (R 3.4.2)
cluster           2.0.6   2017-03-16 CRAN (R 3.4.2)
codetools          0.2-15  2016-10-05 CRAN (R 3.4.2)
colorspace         1.3-2   2016-12-14 CRAN (R 3.4.2)
compiler          3.4.2   2017-10-06 local
curl              2.8.1   2017-07-21 CRAN (R 3.4.2)
data.table        * 1.10.4-2 2017-10-12 url
datasets          * 3.4.2   2017-10-06 local
DBI               0.7    2017-06-18 CRAN (R 3.4.2)
DelayedArray      * 0.2.7   2017-11-29 Bioconductor
devtools          * 1.13.3  2017-08-02 CRAN (R 3.4.2)
dichromat         2.0-0   2013-01-24 CRAN (R 3.4.2)
digest             0.6.12  2017-01-27 CRAN (R 3.4.2)
doParallel        * 1.0.11  2017-09-28 CRAN (R 3.4.2)
ensemblldb        2.0.4   2017-11-29 Bioconductor
evaluate          0.10.1  2017-06-24 CRAN (R 3.4.2)
foreach            * 1.4.3   2015-10-13 CRAN (R 3.4.2)
foreign            0.8-69  2017-06-21 CRAN (R 3.4.2)

```

formatR	1.5	2017-04-25 CRAN (R 3.4.2)
Formula	1.2-2	2017-07-10 CRAN (R 3.4.2)
GenomeInfoDb	* 1.12.3	2017-11-29 Bioconductor
GenomeInfoDbData	0.99.0	2017-11-29 Bioconductor
GenomicAlignments	* 1.12.2	2017-11-29 Bioconductor
GenomicFeatures	1.28.5	2017-11-29 Bioconductor
GenomicRanges	* 1.28.6	2017-11-29 Bioconductor
GGally	1.3.2	2017-08-02 CRAN (R 3.4.2)
ggbio	* 1.24.1	2017-11-29 Bioconductor
ggplot2	* 2.2.1	2016-12-30 CRAN (R 3.4.2)
graph	1.54.0	2017-11-29 Bioconductor
graphics	* 3.4.2	2017-10-06 local
grDevices	* 3.4.2	2017-10-06 local
grid	* 3.4.2	2017-10-06 local
gridExtra	2.3	2017-09-09 CRAN (R 3.4.2)
gtable	0.2.0	2016-02-26 CRAN (R 3.4.2)
Hmisc	4.0-3	2017-05-02 CRAN (R 3.4.2)
hms	0.3	2016-11-22 CRAN (R 3.4.2)
htmlTable	1.9	2017-01-26 CRAN (R 3.4.2)
htmltools	0.3.6	2017-04-28 CRAN (R 3.4.2)
htmlwidgets	0.9	2017-07-10 CRAN (R 3.4.2)
httpuv	1.3.5	2017-07-04 CRAN (R 3.4.2)
httr	1.3.1	2017-08-20 CRAN (R 3.4.2)
interactiveDisplayBase	1.14.0	2017-11-29 Bioconductor
IRanges	* 2.10.5	2017-11-29 Bioconductor
iterators	* 1.0.8	2015-10-13 CRAN (R 3.4.2)
kableExtra	* 0.5.2	2017-09-15 url
knitr	* 1.17	2017-08-10 CRAN (R 3.4.2)
labeling	0.3	2014-08-23 CRAN (R 3.4.2)
lattice	0.20-35	2017-03-25 CRAN (R 3.4.2)
latticeExtra	0.6-28	2016-02-09 CRAN (R 3.4.2)
lazyeval	0.2.0	2016-06-12 CRAN (R 3.4.2)
magrittr	1.5	2014-11-22 CRAN (R 3.4.2)
Matrix	1.2-11	2017-08-21 url
matrixStats	* 0.52.2	2017-04-14 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
mime	0.5	2016-07-07 CRAN (R 3.4.2)
munsell	0.4.3	2016-02-13 CRAN (R 3.4.2)
nnet	7.3-12	2016-02-02 CRAN (R 3.4.2)
OrganismDbi	1.18.1	2017-11-29 Bioconductor
parallel	* 3.4.2	2017-10-06 local
plyr	* 1.8.4	2016-06-08 CRAN (R 3.4.2)
ProtGenerics	1.8.0	2017-11-29 Bioconductor
R6	2.2.2	2017-06-17 CRAN (R 3.4.2)
RBGL	1.52.0	2017-11-29 Bioconductor
RColorBrewer	1.1-2	2014-12-07 CRAN (R 3.4.2)
Rcpp	0.12.13	2017-09-28 url
RCurl	1.95-4.8	2016-03-01 CRAN (R 3.4.2)
readr	1.1.1	2017-05-16 CRAN (R 3.4.2)
reshape	0.8.7	2017-08-06 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
rpart	4.1-11	2017-04-21 CRAN (R 3.4.2)
rprojroot	1.2	2017-01-16 CRAN (R 3.4.2)
Rsamtools	* 1.28.0	2017-11-29 Bioconductor
RSQLite	2.0	2017-06-19 CRAN (R 3.4.2)
rtracklayer	1.36.6	2017-11-29 Bioconductor

rvest	0.3.2	2016-06-17 CRAN (R 3.4.2)
S4Vectors	* 0.14.7	2017-11-29 Bioconductor
scales	0.5.0	2017-08-24 CRAN (R 3.4.2)
shiny	1.0.5	2017-08-23 CRAN (R 3.4.2)
splines	3.4.2	2017-10-06 local
stats	* 3.4.2	2017-10-06 local
stats4	* 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)
SummarizedExperiment	* 1.6.5	2017-11-29 Bioconductor
survival	2.41-3	2017-04-04 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
VariantAnnotation	1.22.3	2017-11-29 Bioconductor
withr	2.0.0	2017-07-28 url
XML	3.98-1.9	2017-06-19 CRAN (R 3.4.2)
xml2	1.1.1	2017-01-24 CRAN (R 3.4.2)
xtable	1.8-2	2016-02-05 CRAN (R 3.4.2)
XVector	* 0.16.0	2017-11-29 Bioconductor
yaml	2.1.14	2016-11-12 CRAN (R 3.4.2)
zlibbioc	1.22.0	2017-11-29 Bioconductor