

2

[illegible]

3

[illegible]

4

ID	Length	Hit ID	Accession	Length	E-value	Overlap	Identity	Recalc
>LYSC_CHI	147	LALBA_BOVIN	P00711	123	1.4e-18	120	40.0	na
Q9RCELA	AAMKRHGLDNYRGYSLGNWVCAAKFESNFNTQATNRNTDGGSTDYGILQINSRWWCNDGRTPGSRN							
5	KCEVFRELK--DLKGYGGVSLPEWVCTTFHTSGYDTQAIVQNND-STEYGLFQINNKIWCKDDQNPHSSN							
	LCNIPCSALLSSDITASVNCAKKIVSDGNGMNAWVAWRNRCKGTDVQAW 142							
	ICNISCDKFLDDDLTDDIMCVKKIL-DKVGINYWLAHKALCS-EKLDQW 119							

5

ID	Length	Hit ID	Accession	Length	E-value	Overlap	Identity	Recalc
>LYSC_CHI	147	TLP_ACTCC	P83958	201	1.8	60	31.7	23.77
56	FNTQATNRNTDGDSTDYGI-LQINSRWWC-NDGRTPGSRNLCNIPCSALLSSDITA-SVN	112						
103	FNVAMEFSPTSGGCTRGIKCTANINEQCPNELRAPGG--CNNPCTVFKTDQYCCNSGN	159						

6

ID	Length	Hit ID	Accession	Length	E-value	Overlap	Identity	Recalc
>LYSC_CHI	147	4X9U_A	4X9U_A	189	2.3	53	26.4	17.49
94 CNIPCSALLSSDITASVNC AKKIVSDGNGMNAWVAWRNRCKGTDVQAWIRGC						146		
4 CNGPCRDL--NDCDGQLICIKGKCND DPQVGTHI----CRGTTXSXPGGC						49		

7

ID	Length	Hit ID	Accession	Length	E-value	Overlap	Identity	Recalc
>LYSC_CHI	147	TLP_ACTDE	P81370	201	2.4	62	32.3	25.03
5% FNTQATNRNTDGSTDYGI--LQINSRWWC-NDGRTPGSRNLCNIPCSALLSSDITA-SVNC							112	
:::: ::::								
103 FNNAMEFSPTS GGCTRGIKCTADINGQ--CPNELRAPGG--CNNPCTVFKTDQYCCNSGNC							159	

8

ID	Length	Hit ID	Accession	Length	E-value	Overlap	Identity	Recalc
>LYSC_CHI	147	NLTP_MAIZE	P19656	93	2.5	41	34.1	17.48
85 GRTPGSRNLCNIPCSALLSSDITASVNCAKKIVSDGNMGNN	125							
28 GCCSGVRSLLNN--AARTTADRRRAACNCLKNAAGVSGLN	65							

9

ID	Length	Hit ID	Accession	Length	E-value	Overlap	Identity	Recalc
>LYSC_CHI	147	L7TY87_ACTDE	L7TY87	189	3.1	53	26.4	17.49
94 CNIPCSALLSSDITASVNCIAKIVSDGNGMNAVVAWRNRCKGTDVQAWIRGC						146		
4 CNGPCRDL--NDCDGLICIKGKCNDPQVGTHI----CRGTTSPQPGGC						49		

10

ID	Length	Hit ID	Accession	Length	E-value	Overlap	Identity	Recalc
>LYSC_CHI	147	KIWEL_ACTDE	P84527	189	3.1	53	26.4	17.49
94 CNIPCSALLSSDITASVNCARKIVSDGNMNAVAVRNRCRGTDVQAWIRGC						146		
4 CNGPCRDL--NDCDGLICIKGKCNDPQVGTHI----CRGTTSPQPGGC						49		

11

ID	Length	Hit ID	Accession	Length	E-value	Overlap	Identity	Recalc
>LYSC_CHI	147	L7TUI7_ACTDE	L7TUI7	189	3.7	53	26.4	17.49
94 CNIPCSALLSSDITASVNC AKKIVSDGNGMNAWVAWRNRCKGTDVQAWIRGC						146		
4 CNGPCRDL--NDCDGQLICIKGKCND DPEVGTHI-----CRGTTPSPQPGGC						49		

12

ID	Length	Hit ID	Accession	Length	E-value	Overlap	Identity	Recalc
>LYSC_CHI	147	E7CLQ1_PRUAV	E7CLQ1	91	3.9	52	30.8	20.02
8 ^k GSRNLCNIPICSALLSSDITASVNCAKKIVSDGNGMNA--WVAWRNRCKGTD	138							
30 GIRNNNL---AKTTADROTACNCLKQLSASVPGVNANNAALPGKC-GVN	77							

13

ID	Length	Hit ID	Accession	Length	E-value	Overlap	Identity	Recalc
>LYSC_CHI	147	NLTP_PRUAV	Q9M5X8	91	3.9	52	30.8	20.02
8 ^k GSRNL	CNIPCSALLSSDITASVNCAKKIVSDGNGMNA--WVAWRNRCKGTD	138						
30 GIRNINNL---	AKTTADRQTACNCLKQLSASVPGVNANNAALPGKC-GVN	77						

14

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15

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16

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17

[illegible]

18

ID	Length	Hit ID	Accession	Length	E-value	Overlap	Identity	Recalc
>LYSC_CHI	147	L7TRW9_ACTER	L7TRW9	189	6	52	26.9	17.48
<p>9% CNIPQSALLSSDITASVNC AKKIVSDGNGMNAVVAWRNRCKGTDVQAWIRG 145 ::::: : 4 CNGPCRDL--NDCDGOLICIKGKCND DPEVGTHI----CRGTTSPQP GGG 48</p>								

19

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21

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22

ID	Length	Hit ID	Accession	Length	E-value	Overlap	Identity	Recalc
>LYSC_CHI	147	AMP1_FAGES	P0DKH7	40	8.6	24	37.5	11.25

978 SRW-WCNDGRTPGSRNLCNIPCS 100
 : : : : : : : : : :
 19 SQWGWG--GSTP--KYCGAGCQ 37

23

ID	Length	Hit ID	Accession	Length	E-value	Overlap	Identity	Recalc
>LYSC_CHI	147	AMP2_FAGES	P0DKH8	40	8.6	24	37.5	11.25

978 SRW-WCNDGRTPGSRNLCNIPCS 100
 : : : : : : : : : :
 19 SQWGWG--GSTP---KYCGAGCQ 37

24

ID	Length	Hit ID	Accession	Length	E-value	Overlap	Identity	Recalc
>LYSC_CHI	147	VA5_VESMG	P86870	202	9.1	36	33.3	14.98

92 NLCNI PCSA---LLSSDITASVNCAKKIVSDGNG **123**

: : : : : : : : : : : : : : :

2 NYCKIKCRSGIHTLCKFGISTKPNCGKNVVK-GSG **36**

Exact word and sliding window results

Shown per ORF

Exact word results:

Name	Accession ID	Description	Species	No exact words	Hit %
LYSC_CHICK	P00698	Lysozyme C	Gallus gallus	124	87.32

18
KVFGRCELAAMKRGHGLDNYRGYS LGNWVCAAKFESNFNTQATNRNTDGS TDYGILQINSRWWCNDGRTPGSRNLCNIPCSALLSSDI
TASVNC AKKIVSDGNGMNAWVAWRNRCKGTDVQAWIRG CRL 147

Name	Accession ID	Description	Species	No exact words	Hit %
0					
KVFGRCELAAMKRGHGLDNYRGYS LGNWVCAAKFESNFNTQATNRNTDGS TDYGILQINSRWWCNDGRTPGSRNLCNIPCSALLSSDI					
TASVNC AKKIVSDGNGMNAWVAWRNRCKGTDVQAWIRG CRL 129					
52 ESNFNT 58					
52 ESNFNT 58					
34 ESNFNT 40					

Name	Accession ID	Description	Species	No exact words	Hit %
XP_014705584	XP_014705584	PREDICTED: lysozyme C, mi lk isozyeme	Equus asinus	1	0.7

52 ESNFNT 58
52 ESNFNT 58
53 ESNFNT 59

Sliding window results:

Name	Accession ID	Description	Species	No windows	Hit %
LYSC_CHICK	P00698	Lysozyme C	Gallus gallus	68	100.0

Alignments containing 68 window(s):

(1:81-1:62) 77.5% identity
(2:82-1:63) 78.8% identity
(3:83-1:64) 80.0% identity
(4:84-1:65) 81.2% identity
(5:85-1:66) 82.5% identity
(6:86-1:67) 83.8% identity
(7:87-1:68) 85.0% identity
(8:88-1:69) 86.2% identity
(9:89-1:70) 87.5% identity
(10:90-1:71) 88.8% identity
(11:91-1:72) 90.0% identity
(12:92-1:73) 91.2% identity
(13:93-1:74) 92.5% identity
(14:94-1:75) 93.8% identity
(15:95-1:76) 95.0% identity
(16:96-1:77) 96.2% identity
(17:97-1:78) 97.5% identity
(18:98-1:79) 98.8% identity
(19:99-1:80) 100.0% identity
(20:100-2:81) 100.0% identity
(21:101-3:82) 100.0% identity
(22:102-4:83) 100.0% identity
(23:103-5:84) 100.0% identity
(24:104-6:85) 100.0% identity
(25:105-7:86) 100.0% identity
(26:106-8:87) 100.0% identity
(27:107-9:88) 100.0% identity
(28:108-10:89) 100.0% identity
(29:109-11:90) 100.0% identity
(30:110-12:91) 100.0% identity
(31:111-13:92) 100.0% identity
(32:112-14:93) 100.0% identity
(33:113-15:94) 100.0% identity
(34:114-16:95) 100.0% identity
(35:115-17:96) 100.0% identity

(36:116-18:97) 100.0% identity
(37:117-19:98) 100.0% identity
(38:118-20:99) 100.0% identity
(39:119-21:100) 100.0% identity
(40:120-22:101) 100.0% identity
(41:121-23:102) 100.0% identity
(42:122-24:103) 100.0% identity
(43:123-25:104) 100.0% identity
(44:124-26:105) 100.0% identity
(45:125-27:106) 100.0% identity
(46:126-28:107) 100.0% identity
(47:127-29:108) 100.0% identity
(48:128-30:109) 100.0% identity
(49:129-31:110) 100.0% identity
(50:130-32:111) 100.0% identity
(51:131-33:112) 100.0% identity
(52:132-34:113) 100.0% identity
(53:133-35:114) 100.0% identity
(54:134-36:115) 100.0% identity
(55:135-37:116) 100.0% identity
(56:136-38:117) 100.0% identity
(57:137-39:118) 100.0% identity
(58:138-40:119) 100.0% identity
(59:139-41:120) 100.0% identity
(60:140-42:121) 100.0% identity
(61:141-43:122) 100.0% identity
(62:142-44:123) 100.0% identity
(63:143-45:124) 100.0% identity
(64:144-46:125) 100.0% identity
(65:145-47:126) 100.0% identity
(66:146-48:127) 100.0% identity
(67:147-49:128) 100.0% identity
(68:148-50:129) 100.0% identity

```

1  MRSLLIILVLCFLPLAALGKVFGRCELAAAMKRHGLDNYRGYSLGNWVCAAKFESNFNTQATNRNTDGSTD
      ::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::
1  -----KVFGRCELAAAMKRHGLDNYRGYSLGNWVCAAKFESNFNTQATNRNTDGSTD

```

YGILQINSRWWCNDGRTPGSRNLCNIPCSALLSSDITASVNC AKKIVSDGNGMNAWVAWRNRCKGTDVQA
:
YGILQINSRWWCNDGRTPGSRNLCNIPCSALLSSDITASVNC AKKIVSDGNGMNAWVAWRNRCKGTDVQA

```
WIRGCRL 148
:::
WIRGCRL 129
```

Name	Accession ID	Description	Species	No windows	Hit %
XP_014705584	XP_014705584	PREDICTED: lysozyme C, milk is ozyme	Equus asinus	68	100.0

Alignments containing 2 window(s):

(1:81-1:82) 51.8% identity

(2:82-2:83) 51.8% identity

```

1  MRSLILVL--CFLPLAALGKVFGRCELAAAMKRHGLDNYRGYSLGNWVCAAKFESNFNTQATN-RNTDG
   :::::  :::::  :::::  :::::  :::::  :::::  :::::  :::::  :::::  :::::  :::::
1  MRSTLIISLLSCFFAVYE-AKVFSKCELAHKLKAQEMDGGYSLANWVCMAEYESNFNTRAFNGKNANG

STDYGILQINSRWW 82
:::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::
SSDYGLFQLNNKWW 83

```

Alignments containing 1 window(s):

(3:83-4:84) 51.2% identity

```

3  SLLILVL-CFLPLAALGKVFGRCELAAAMKRHGLDNYRGYSLGNWVCAAKFESNFNTQATN-RNTDGSTD
   :::::  :::::  :::::  :::::  :::::  :::::  :::::  :::::  :::::  :::::  :::::
4  TLIISLLSCFFAVYE-AKVFSKCELAHKLKAQEMDGGYSLANWVCMAEYESNFNTRAFNGKNANGSSD

YGILQINSRWWC 83
:::  :::  :::  :::  :::  :::  :::  :::  :::  :::  :::
YGLFQLNNKWWC 84

```

Alignments containing 8 window(s):

(4:84-6:85) 49.4% identity

(5:85-7:86) 50.6% identity

(6:86-8:87) 50.6% identity

(7:87-9:88) 50.6% identity

(8:88-10:89) 49.4% identity

(9:89-11:90) 49.4% identity

(10:90-12:91) 49.4% identity

(11:91-13:92) 49.4% identity

```

4  LLILVLCFLPLAALGKVFGRCELAAAMKRHGLDNYRGYSLGNWVCAAKFESNFNTQATN-RNTDGSTDYG
   ..  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
6  IISLLSCFFAVYE-AKVFSKCELAHKLKAQEMDGGYSLANWVCMAEYESNFNTRAFNGKNANGSSDYG

ILQINSRWWCNDGRTPGS 91
..  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
LFQLNNKWWCKDNKRSSS 92

```


Alignments containing 3 window(s):

(12:92-13:93) 48.1% identity

(13:93-14:94) 48.1% identity

(14:94-15:95) 48.1% identity

```

12 LPLAALGKVFGRCELAAAMKRHGLDNYRGYSLGNWVCAAKFESNFNTQATN-RNTDGSTDYGILQINSRW
   .....:.....:.....:.....:.....:.....:.....:.....:.....:.....:.....:
13 FFAVYEAKVFSKCELAHKLKAQEMDGFGGYSLANWVCMAEYESNFNTRAFNGKNANGSSDYGLFQLNNKW
   .....:.....:.....:.....:.....:.....:.....:.....:.....:.....:.....:
   WCNDGRTPGSRNL 94
   .....:.....:.....:.....:.....:.....:.....:.....:.....:.....:.....:
   WCKDNKRSSSNAC 95
  
```

Alignments containing 1 window(s):

(15:95-16:95) 50.6% identity

```

15 AALGKVFGRCELAAAMKRHGLDNYRGYSLGNWVCAAKFESNFNTQATN-RNTDGSTDYGILQINSRWWCN
   .....:.....:.....:.....:.....:.....:.....:.....:.....:.....:.....:
16 VYEAKVFSKCELAHKLKAQEMDGFGGYSLANWVCMAEYESNFNTRAFNGKNANGSSDYGLFQLNNKWWCK
   .....:.....:.....:.....:.....:.....:.....:.....:.....:.....:.....:
   DGRTPGSRNLC 95
   .....:.....:.....:.....:.....:.....:.....:.....:.....:.....:.....:
   DNKR-SSSNAC 95
  
```

Alignments containing 1 window(s):

(16:96-17:96) 51.9% identity

```

16 ALGKVFGRCELAAAMKRHGLDNYRGYSLGNWVCAAKFESNFNTQATN-RNTDGSTDYGILQINSRWWCND
   .....:.....:.....:.....:.....:.....:.....:.....:.....:.....:.....:
17 YEAKVFSKCELAHKLKAQEMDGFGGYSLANWVCMAEYESNFNTRAFNGKNANGSSDYGLFQLNNKWWCKD
   .....:.....:.....:.....:.....:.....:.....:.....:.....:.....:.....:
   GRTPGSRNLN 96
   .....:.....:.....:.....:.....:.....:.....:.....:.....:.....:.....:
   NKRSSS-NACN 96
  
```

Alignments containing 4 window(s):

(17:97-18:97) 53.1% identity

(18:98-19:98) 53.1% identity

(19:99-20:99) 54.3% identity

(20:100-21:100) 54.3% identity

```

17 LGKVFGRCELAAAMKRHGLDNYRGYSLGNWVCAAKFESNFNTQATN-RNTDGSTDYGILQINSRWWCNDG
   .....:.....:.....:.....:.....:.....:.....:.....:.....:.....:.....:
18 EAKVFSKCELAHKLKAQEMDGFGGYSLANWVCMAEYESNFNTRAFNGKNANGSSDYGLFQLNNKWWCKDN
   .....:.....:.....:.....:.....:.....:.....:.....:.....:.....:.....:
   RTPGSRNLCNIPCS 100
   .....:.....:.....:.....:.....:.....:.....:.....:.....:.....:.....:
   KR-SSSNACNIMCS 100
  
```

Alignments containing 1 window(s):
(21:101-22:101) 53.1% identity

```
21 FGRCELAAAMKRHGLDNYRGYSLGNWVCAAKFESNFNTQATN-RNTDGSTDYGILQINSRWWCNDGRTPG
   : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
22 FSKCELAHKLKAQEMDGFGGYSLANWVCMAYEYESNFNTRAFNGKNANGSSDYGLFQLNNKWWCKDNKRSS
   SRNLCNIPCSA 101
   : : : : : :
   S-NACNIMCSK 101
```

Alignments containing 4 window(s):
(22:102-23:102) 53.1% identity
(23:103-24:103) 54.3% identity
(24:104-25:104) 54.3% identity
(25:105-26:105) 53.1% identity

```
22 GRCELAAAMKRHGLDNYRGYSLGNWVCAAKFESNFNTQATN-RNTDGSTDYGILQINSRWWCNDGRTPGS
   : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
23 SKCELAHKLKAQEMDGFGGYSLANWVCMAYEYESNFNTRAFNGKNANGSSDYGLFQLNNKWWCKDNKR-SS
   RNLCNIPCSALLSS 105
   : : : : : : : :
   SNACNIMCSKLLDD 105
```

Alignments containing 1 window(s):
(26:106-27:106) 51.9% identity

```
26 LAAAMKRHGLDNYRGYSLGNWVCAAKFESNFNTQATN-RNTDGSTDYGILQINSRWWCNDGRTPGSRNLC
   : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
27 LAHKLKAQEMDGFGGYSLANWVCMAYEYESNFNTRAFNGKNANGSSDYGLFQLNNKWWCKDNKRSS-NAC
   NIPCSALLSSD 106
   : : : : : : : :
   NIMCSKLLDDN 106
```

Alignments containing 4 window(s):
(27:107-28:107) 51.9% identity
(28:108-29:108) 50.6% identity
(29:109-30:109) 50.6% identity
(30:110-31:110) 50.6% identity

```
27 AAAMKRHGLDNYRGYSLGNWVCAAKFESNFNTQATN-RNTDGSTDYGILQINSRWWCNDGRTPGSRNLCN
   : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
28 AHKLKAQEMDGFGGYSLANWVCMAYEYESNFNTRAFNGKNANGSSDYGLFQLNNKWWCKDNKR-SSSNACN
   IPCSALLSSDITAS 110
   : : : : : : : :
   IMCSKLLDDNIDDD 110
```

Alignments containing 1 window(s):
(31:111-32:111) 50.6% identity

```

31 KRHGLDNYRGYSLGNWVCAAKFESNFNTQATN-RNTDGSTDYGILQINSRWWCNDGRTPGSRNLCNIPCS
   : . . . . : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
32 KAQEMDGFGGYSLANWVCMAYEYESNFNTRAFNGKNANGSSDYGLFQLNNKWWCKDNKRSSS-NACNIMCS

   ALLSSDITASV 111
   : : : : : .
   KLLDDNIDDDI 111
  
```

Alignments containing 4 window(s):
(32:112-33:112) 49.4% identity
(33:113-34:113) 50.6% identity
(34:114-35:114) 51.9% identity
(35:115-36:115) 53.1% identity

```

32 RHGLDNYRGYSLGNWVCAAKFESNFNTQATN-RNTDGSTDYGILQINSRWWCNDGRTPGSRNLCNIPCSA
   . . . . : : : : : : : : : : : : : : : : : : : : : : : : : :
33 AQEMDGFGGYSLANWVCMAYEYESNFNTRAFNGKNANGSSDYGLFQLNNKWWCKDNKR-SSSNACNIMCSK

   LLSSDITASVNCAK 115
   : : : : : : : : :
   LLDDNIDDDISCAK 115
  
```

Alignments containing 1 window(s):
(36:116-37:116) 53.1% identity

```

36 DNYRGYSLGNWVCAAKFESNFNTQATN-RNTDGSTDYGILQINSRWWCNDGRTPGSRNLCNIPCSALLSS
   . . : : : : : : : : : : : : : : : : : : : : : : : : : :
37 DGFGGYSLANWVCMAYEYESNFNTRAFNGKNANGSSDYGLFQLNNKWWCKDNKRSSS-NACNIMCSKLLDD

   DITASVNCAKK 116
   . : . . : : .
   NIDDDISCAKR 116
  
```

Alignments containing 4 window(s):
(37:117-38:117) 51.9% identity
(38:118-39:118) 53.1% identity
(39:119-40:119) 53.1% identity
(40:120-41:120) 54.3% identity

```

37 NYRGYSLGNWVCAAKFESNFNTQATN-RNTDGSTDYGILQINSRWWCNDGRTPGSRNLCNIPCSALLSSD
   . . : : : : : : : : : : : : : : : : : : : : : : : : :
38 GFGGYSLANWVCMAYEYESNFNTRAFNGKNANGSSDYGLFQLNNKWWCKDNKR-SSSNACNIMCSKLLDDN

   ITASVNCAKKIVSD 120
   : . . . : : : :
   IDDDISCAKRVVRD 120
  
```

Alignments containing 1 window(s):
(41:121-42:121) 53.1% identity

```

41 YSLGNWVCAAKFESNFNTQATN-RNTDGSTDYGILQINSRWWCNDGRTPGSRNLCNIPCSALLSSDITAS
   ::::::::::: ::::::::::: : ::::::::::: ::::::::::: : : :: :: :: :: :: :: ::
42 YSLANWVCMAEYESNFNTRAFNGKNANGSSDYGLFQLNNKWWCKDNKRSSS-NACNIMCSKLLDDNIDDD

VNC AKKIVSDG 121
  :: :: :: ::
ISC AKRVVRDP 121
  
```

Alignments containing 4 window(s):
(42:122-43:122) 51.9% identity
(43:123-44:123) 51.9% identity
(44:124-45:124) 51.9% identity
(45:125-46:125) 51.9% identity

```

42 SLGNWVCAAKFESNFNTQATN-RNTDGSTDYGILQINSRWWCNDGRTPGSRNLCNIPCSALLSSDITASV
   :: :: :: :: :: :: :: :: :: :: :: :: :: :: :: :: :: :: :: :: :: :: :: ::
43 SLANWVCMAEYESNFNTRAFNGKNANGSSDYGLFQLNNKWWCKDNKR-SSSNACNIMCSKLLDDNIDDDI

NCA KKI VSDGNGMN 125
  :: :: :: :: ::
SCA KRVVRDPKGMS 125
  
```

Alignments containing 1 window(s):
(46:126-47:126) 51.9% identity

```

46 WVCAAKFESNFNTQATN-RNTDGSTDYGILQINSRWWCNDGRTPGSRNLCNIPCSALLSSDITASVNCAK
   :: :: :: :: :: :: :: :: :: :: :: :: :: :: :: :: :: :: :: :: :: :: :: ::
47 WVCMAEYESNFNTRAFNGKNANGSSDYGLFQLNNKWWCKDNKRSSS-NACNIMCSKLLDDNIDDDISCAK

KIVSDGNGMNA 126
  :: : :: :: ::
RVVRDPKGMSA 126
  
```

Alignments containing 4 window(s):
(47:127-48:127) 51.9% identity
(48:128-49:128) 50.6% identity
(49:129-50:129) 50.6% identity
(50:130-51:130) 51.9% identity

```

47 VCAAKFESNFNTQATN-RNTDGSTDYGILQINSRWWCNDGRTPGSRNLCNIPCSALLSSDITASVNCAKK
   :: :: :: :: :: :: :: :: :: :: :: :: :: :: :: :: :: :: :: :: :: :: :: ::
48 VCMAEYESNFNTRAFNGKNANGSSDYGLFQLNNKWWCKDNKR-SSSNACNIMCSKLLDDNIDDDISCAKR

IVSDGNGMNAVAV 130
  :: : :: :: :: ::
VVRDPKGMSAWKAW 130
  
```

**Alignments containing 1 window(s):
(51:131-52:131) 50.6% identity**

```
51 KFESNFTQATN-RNTDGSTDYGILQINSRWWCNDGRTPGSRNLCNIPCSALLSSDITASVNCAKKIVSD
   ..... : ..... : ..... : ..... : ..... : ..... : ..... : ..... :
52 EYESNFTNTRAFNGKNANGSSDYGLFQLNNKWWCKDNKRSSS-NACNIMCSKLLDDNIDDDISCAKRVVRD

   NGMNAWVAWR 131
   ..... :
   PKGMSAWKAWV 131
```

**Alignments containing 4 window(s):
(52:132-53:132) 50.6% identity
(53:133-54:133) 50.6% identity
(54:134-55:134) 50.6% identity
(55:135-56:135) 50.6% identity**

```
52 FESNFTQATN-RNTDGSTDYGILQINSRWWCNDGRTPGSRNLCNIPCSALLSSDITASVNCAKKIVSDG
   ..... : ..... : ..... : ..... : ..... : ..... : ..... : ..... :
53 YESNFTNTRAFNGKNANGSSDYGLFQLNNKWWCKDNKR-SSSNACNIMCSKLLDDNIDDDISCAKRVVRDP

   NGMNAWVAWRNRCK 135
   ..... : ..... :
   KGMSAWKAWVKHCK 135
```

**Alignments containing 1 window(s):
(56:136-57:136) 49.4% identity**

```
56 FNTQATN-RNTDGSTDYGILQINSRWWCNDGRTPGSRNLCNIPCSALLSSDITASVNCAKKIVSDGNGMN
   ..... : ..... : ..... : ..... : ..... : ..... : ..... : ..... :
57 FNTRAFNGKNANGSSDYGLFQLNNKWWCKDNKRSSS-NACNIMCSKLLDDNIDDDISCAKRVVRDPKGMS

   AWWAWRNRCKG 136
   .. : .. : .. :
   AWKAWVKHCKD 136
```

**Alignments containing 3 window(s):
(57:137-58:137) 48.1% identity
(58:138-59:138) 48.1% identity
(59:139-60:139) 46.9% identity**

```
57 NTQATN-RNTDGSTDYGILQINSRWWCNDGRTPGSRNLCNIPCSALLSSDITASVNCAKKIVSDGNGMNA
   ..... : ..... : ..... : ..... : ..... : ..... : ..... : ..... :
58 NTRAFNGKNANGSSDYGLFQLNNKWWCKDNKR-SSSNACNIMCSKLLDDNIDDDISCAKRVVRDPKGMSA

   WVAWRNRCKGTDV 139
   : : : : : :
   WKAWVKHCKDKDL 139
```


Alignments containing 4 window(s):

(17:97-1:78) 53.1% identity
(18:98-1:79) 53.1% identity
(19:99-1:80) 54.3% identity
(20:100-2:81) 54.3% identity

```
17 LGKVFGRCELAAAMKRHGLDNYRGYSLGNWVCAAKFESNFNTQATN-RNTDGSTDYGILQINSRWWCNDG
   : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
1  --KVFSKCELAHKLKAQEMDGFGGYSLANWVCMAYESNFNTRAFNGKNANGSSDYGLFQLNNKWWCKDN

RTPGSRNLCNIPCS 100
. : : : : : :
KR-SSSNACNIMCS 81
```

Alignments containing 1 window(s):

(21:101-3:82) 53.1% identity

```
21 FGRCELAAAMKRHGLDNYRGYSLGNWVCAAKFESNFNTQATN-RNTDGSTDYGILQINSRWWCNDGRTPG
   : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
3  FSKCELAHKLKAQEMDGFGGYSLANWVCMAYESNFNTRAFNGKNANGSSDYGLFQLNNKWWCKDNKRSS

SRNLCNIPCSA 101
: : : : : :
S-NACNIMCSK 82
```

Alignments containing 4 window(s):

(22:102-4:83) 53.1% identity
(23:103-5:84) 54.3% identity
(24:104-6:85) 54.3% identity
(25:105-7:86) 53.1% identity

```
22 GRCELAAAMKRHGLDNYRGYSLGNWVCAAKFESNFNTQATN-RNTDGSTDYGILQINSRWWCNDGRTPGS
   : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
4  SKCELAHKLKAQEMDGFGGYSLANWVCMAYESNFNTRAFNGKNANGSSDYGLFQLNNKWWCKDNKR-SS

RNLNIPCSALLSS 105
: : : : : : :
SNACNIMCSKLLDE 86
```

Alignments containing 1 window(s):

(26:106-8:87) 51.9% identity

```
26 LAAAMKRHGLDNYRGYSLGNWVCAAKFESNFNTQATN-RNTDGSTDYGILQINSRWWCNDGRTPGSRNLC
   : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
8  LAHKLKAQEMDGFGGYSLANWVCMAYESNFNTRAFNGKNANGSSDYGLFQLNNKWWCKDNKRSSS-NAC

NIPCSALLSSD 106
: : : : : :
NIMCSKLLDEN 87
```


Alignments containing 4 window(s):

(27:107-9:88) 51.9% identity
(28:108-10:89) 50.6% identity
(29:109-11:90) 50.6% identity
(30:110-12:91) 50.6% identity

```
27 AAAMKRHGLDNYRGYSLGNWVCAAKFESNFNTQATN-RNTDGSTDYGILQINSRWWCNDGRTPGSRNLCN
   : . . . . . : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
9  AHKLKAQEMDGFGGYSLANWVCMAYEYESNFNTRAFNGKNANGSSDYGLFQLNNKWWCKDNKR-SSSNACN

   IPCSALLSSDITAS 110
   : : : : : : :
   IMCSKLLDENIDDD 91
```

Alignments containing 1 window(s):

(31:111-13:92) 50.6% identity

```
31 KRHGLDNYRGYSLGNWVCAAKFESNFNTQATN-RNTDGSTDYGILQINSRWWCNDGRTPGSRNLCNIPCS
   : . . . . . : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
13 KAQEMDGFGGYSLANWVCMAYEYESNFNTRAFNGKNANGSSDYGLFQLNNKWWCKDNKRSSS-NACNIMCS

   ALLSSDITASV 111
   : : . : . :
   KLLDENIDDDI 92
```

Alignments containing 4 window(s):

(32:112-14:93) 49.4% identity
(33:113-15:94) 50.6% identity
(34:114-16:95) 51.9% identity
(35:115-17:96) 53.1% identity

```
32 RHGLDNYRGYSLGNWVCAAKFESNFNTQATN-RNTDGSTDYGILQINSRWWCNDGRTPGSRNLCNIPCSA
   . . . . . : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
14 AQEMDGFGGYSLANWVCMAYEYESNFNTRAFNGKNANGSSDYGLFQLNNKWWCKDNKR-SSSNACNIMCSK

   LLSSDITASVNCAK 115
   : . . : . : : : :
   LLDENIDDDISCAK 96
```

Alignments containing 1 window(s):

(36:116-18:97) 53.1% identity

```
36 DNYRGYSLGNWVCAAKFESNFNTQATN-RNTDGSTDYGILQINSRWWCNDGRTPGSRNLCNIPCSALLSS
   : . : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
18 DGFGGYSLANWVCMAYEYESNFNTRAFNGKNANGSSDYGLFQLNNKWWCKDNKRSSS-NACNIMCSKLLDE

   DITASVNCAKK 116
   : : . : . : . :
   NIDDDISCAKR 97
```

Alignments containing 4 window(s):

(37:117-19:98) 51.9% identity

(38:118-20:99) 53.1% identity

(39:119-21:100) 53.1% identity

(40:120-22:101) 54.3% identity

```
37 NYRGYSLGNWVCAAKFESNFNTQATN-RNTDGSTDYGILQINSRWWCNDGRTPGSRNLCNIPCSALLSSD
.. : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
19 GFGGYSLANWVCMAEYESNFNTRAFNGKNANGSSDYGLFQLNNKWWCKDNKR-SSSNACNIMCSKLLDEN

ITASVNC AKKIVSD 120
: : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
IDDDISCAKRVVRD 101
```

Alignments containing 1 window(s):

(41:121-23:102) 53.1% identity

```
41 YSLGNWVCAAKFESNFNTQATN-RNTDGSTDYGILQINSRWWCNDGRTPGSRNLCNIPCSALLSSDITAS
: : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
23 YSLANWVCMAEYESNFNTRAFNGKNANGSSDYGLFQLNNKWWCKDNKRSSS-NACNIMCSKLLDENIDDD

VNCAKKIVSDG 121
: : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
ISCAKRVVRDP 102
```

Alignments containing 4 window(s):

(42:122-24:103) 51.9% identity

(43:123-25:104) 51.9% identity

(44:124-26:105) 51.9% identity

(45:125-27:106) 51.9% identity

```
42 SLGNWVCAAKFESNFNTQATN-RNTDGSTDYGILQINSRWWCNDGRTPGSRNLCNIPCSALLSSDITASV
: : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
24 SLANWVCMAEYESNFNTRAFNGKNANGSSDYGLFQLNNKWWCKDNKR-SSSNACNIMCSKLLDENIDDDI

NCAKKIVSDGNGMN 125
: : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
SCAKRVVRDPKGMS 106
```

Alignments containing 1 window(s):

(46:126-28:107) 51.9% identity

```
46 WVCAAKFESNFNTQATN-RNTDGSTDYGILQINSRWWCNDGRTPGSRNLCNIPCSALLSSDITASVNC AK
: : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
28 WVCMAEYESNFNTRAFNGKNANGSSDYGLFQLNNKWWCKDNKRSSS-NACNIMCSKLLDENIDDDISCAK

KIVSDGNGMNA 126
: : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
RVVRDPKGMSA 107
```

Alignments containing 4 window(s):

(47:127-29:108) 51.9% identity
(48:128-30:109) 50.6% identity
(49:129-31:110) 50.6% identity
(50:130-32:111) 51.9% identity

```
47 VCAAKFESNFNTQATN-RNTDGSTDYGILQINSRWWCNDGRTPGSRNLCNIPCSALLSSDITASVNCACK
   ::::::::::::::: : ::::::::::::::: : ::::::::::::::: : ::::::::::::::: :
29 VDMAEYESNFNTRAFNGKNANGSSDYGLFQLNNKWWCKDNKR-SSSNACNIMCSKLLDENIDDDISCAKR

   IVSDGNGMNAVVAW 130
   .: : .: : : : :
   VVRDPKGMSAWKAW 111
```

Alignments containing 1 window(s):

(51:131-33:112) 50.6% identity

```
51 KFESNFNTQATN-RNTDGSTDYGILQINSRWWCNDGRTPGSRNLCNIPCSALLSSDITASVNCACKIVSD
   ::::::::::::::: : ::::::::::::::: : ::::::::::::::: : ::::::::::::::: :
33 EYESNFNTRAFNGKNANGSSDYGLFQLNNKWWCKDNKRSSS-NACNIMCSKLLDENIDDDISCAKRVVRD

   GNGMNAVVAWR 131
   .: : : : :
   PKGMSAWKAWV 112
```

Alignments containing 4 window(s):

(52:132-34:113) 50.6% identity
(53:133-35:114) 50.6% identity
(54:134-36:115) 50.6% identity
(55:135-37:116) 50.6% identity

```
52 FESNFNTQATN-RNTDGSTDYGILQINSRWWCNDGRTPGSRNLCNIPCSALLSSDITASVNCACKIVSDG
   ::::::::::::::: : ::::::::::::::: : ::::::::::::::: : ::::::::::::::: :
34 YESNFNTRAFNGKNANGSSDYGLFQLNNKWWCKDNKR-SSSNACNIMCSKLLDENIDDDISCAKRVVRDP

   NGMNAVVAWRNRCK 135
   .: : : : :
   KGMSAWKAWVKHCK 116
```

Alignments containing 1 window(s):

(56:136-38:117) 49.4% identity

```
56 FNTQATN-RNTDGSTDYGILQINSRWWCNDGRTPGSRNLCNIPCSALLSSDITASVNCACKIVSDGNGMN
   ::::::::::::::: : ::::::::::::::: : ::::::::::::::: : ::::::::::::::: :
38 FNTRAFNGKNANGSSDYGLFQLNNKWWCKDNKRSSS-NACNIMCSKLLDENIDDDISCAKRVVRDPKGMS

   AWVAWRNRCKG 136
   :: : : : :
   AWKAWVKHCKD 117
```

Alignments containing 3 window(s):

(57:137-39:118) 48.1% identity

(58:138-40:119) 48.1% identity

(59:139-41:120) 46.9% identity

```
57 NTQATN-RNTDGYGILQINSRWWCNDGRTPGSRNLCNIPCSALLSSDITASVNCAKKIVSDGNGMNA
   : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
39 NTRAFNGKNANGSSDYGLFQLNNKWWCKDNKR-SSSNACNIMCSKLLDENIDDDISCAKRVVRDPKGMSA

WVAWRNRCKGTDV 139
: : : : : : :
WKAUVKHCKDKDL 120
```

Alignments containing 1 window(s):

(60:140-43:121) 45.0% identity

```
60 ATNRNTDGYGILQINSRWWCNDGRTPGSRNLCNIPCSALLSSDITASVNCAKKIVSDGNGMNAWVAWRNRCKGTDVQ 140
   : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
43 FNGKNANGSSDYGLFQLNNKWWCKDNKR-SSSNACNIMCSKLLDENIDDDISCAKRVVRDPKGMSAWKAWVKHCKDKDLS 121
```

Alignments containing 1 window(s):

(61:141-44:122) 45.0% identity

```
61 TNRTDGYGILQINSRWWCNDGRTPGSRNLCNIPCSALLSSDITASVNCAKKIVSDGNGMNAWVAWRNRCKGTDVQA 141
   : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
44 NGKNANGSSDYGLFQLNNKWWCKDNKRSSS-NACNIMCSKLLDENIDDDISCAKRVVRDPKGMSAWKAWVKHCKDKDLSE 122
```

Alignments containing 4 window(s):

(62:142-45:123) 45.0% identity

(63:143-46:124) 45.0% identity

(64:144-47:125) 45.0% identity

(65:145-48:126) 43.8% identity

```
62 NRNTDGYGILQINSRWWCNDGRTPGSRNLCNIPCSALLSSDITASVNCAKKIVSDGNGMNAWVAWRN
   : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
45 GKNANGSSDYGLFQLNNKWWCKDNKR-SSSNACNIMCSKLLDENIDDDISCAKRVVRDPKGMSAWKAWVK

RCKGTDVQAWIRG 145
: : : : : : :
HCKDKDLSEYLAS 126
```

Alignments containing 1 window(s):

(66:146-49:127) 45.0% identity

```
66 DGSDYGYGILQINSRWWCNDGRTPGSRNLCNIPCSALLSSDITASVNCAKKIVSDGNGMNAWVAWRNRCKGTDVQAWIRGC 146
   : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
49 NGSSDYGLFQLNNKWWCKDNKRSSS-NACNIMCSKLLDENIDDDISCAKRVVRDPKGMSAWKAWVKHCKDKDLSEYLASC 127
```

Alignments containing 2 window(s):

(67:147-50:128) 45.0% identity

(68:148-51:129) 45.0% identity

```
67 GSTDYGYGILQINSRWWCNDGRTPGSRNLCNIPCSALLSSDITASVNCAKKIVSDGNGMNAWVAWRNRCKGT
   : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
50 GSSDYGLFQLNNKWWCKDNKR-SSSNACNIMCSKLLDENIDDDISCAKRVVRDPKGMSAWKAWVKHCKDK

DVQAWIRGCRL 148
: : : : : : :
DLSEYLASCNL 129
```

Name	Accession ID	Description	Species	No windows	Hit %
LALBA_BOVIN	P00711	Alpha-lactalbumin	Bos taurus	59	86.76

Alignments containing 1 window(s):
(9:89-3:67) 36.2% identity

```

9  LCFLPLAALGKVFGRCELAAAMKRHGLDNYRGYSLGNWVCAAKFESNFNTQATNRNTDGDSTDYGILQINSRWWCNDGRTP 89
   :               : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
3  LT-----KCEVFRELK--DLKGYGGVSLPEWVCTTFHTSGYDTQAIVQNN--STEYGLFQINNKIWCKDDQNP 67

```

Alignments containing 1 window(s):
(11:91-2:69) 37.5% identity

```

11 FLPLAALGKVFGRCELAAAMKRHGLDNYRGYSLGNWVCAAKFESNFNTQATNRNTDGDSTDYGILQINSRWWCNDGRTPGS 91
   :               : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
2  QLT-----KCEVFRELK--DLKGYGGVSLPEWVCTTFHTSGYDTQAIVQNN--STEYGLFQINNKIWCKDDQNP 69

```

Alignments containing 3 window(s):
(12:92-1:70) 37.5% identity
(13:93-2:71) 38.8% identity
(14:94-3:72) 38.8% identity

```

12 LPLAALGKVFGRCELAAAMKRHGLDNYRGYSLGNWVCAAKFESNFNTQATNRNTDGDSTDYGILQINSRWW
   :               : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
1  EQLT-----KCEVFRELK--DLKGYGGVSLPEWVCTTFHTSGYDTQAIVQNN--STEYGLFQINNKIW
   CNDGRTPGSRNL 94
   : : : : : : :
   CKDDQNP 72

```

Alignments containing 3 window(s):
(15:95-1:73) 41.2% identity
(16:96-2:74) 42.5% identity
(17:97-3:75) 43.8% identity

```

15 AALGKVFGRCELAAAMKRHGLDNYRGYSLGNWVCAAKFESNFNTQATNRNTDGDSTDYGILQINSRWWCND
   : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
1  EQLTK---CEVFRELK--DLKGYGGVSLPEWVCTTFHTSGYDTQAIVQNN--STEYGLFQINNKIWCKD
   GRTPGSRNLCNI 97
   : : : : : : :
   DQNP 75

```

Alignments containing 1 window(s):
(18:98-1:76) 41.2% identity

```

18 GKVFGRCELAAAMKRHGLDNYRGYSLGNWVCAAKFESNFNTQATNRNTDGDSTDYGILQINSRWWCNDGRTPGSRNLCNIP 98
   : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
1  EQLT-KCEVFRELK--DLKGYGGVSLPEWVCTTFHTSGYDTQAIVQNN--STEYGLFQINNKIWCKDDQNP 76

```

Alignments containing 7 window(s):

(19:99-1:77) 42.5% identity
(20:100-2:78) 42.5% identity
(21:101-3:79) 42.5% identity
(22:102-4:80) 42.5% identity
(23:103-5:81) 43.8% identity
(24:104-6:82) 43.8% identity
(25:105-7:83) 42.5% identity

```

19  KVFGRCELAAAMKRHGLDNYRGYSLGNWVCAAKFESNFNTQATNRNTDGSTDYGILQINSRWWCNDGRTP
   . . . . . : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
1   EQLTKCEVFRELK--DLKGYGGVSLPEWVCTTFHTSGYDTQAIVQNND-STEYGLFQINNKIWCKDDQNP

   GSRNLCNIPCSALLSS 105
   : : : : : : : : : :
   HSSNICNISCDKFLDD 83
  
```

Alignments containing 17 window(s):

(26:106-6:84) 41.2% identity
(27:107-7:85) 41.2% identity
(28:108-8:86) 42.5% identity
(29:109-9:87) 42.5% identity
(30:110-10:88) 42.5% identity
(31:111-11:89) 42.5% identity
(32:112-12:90) 42.5% identity
(33:113-13:91) 43.8% identity
(34:114-14:92) 43.8% identity
(35:115-15:93) 45.0% identity
(36:116-16:94) 45.0% identity
(37:117-17:95) 46.2% identity
(38:118-18:96) 46.2% identity
(39:119-19:97) 45.0% identity
(40:120-20:98) 45.0% identity
(41:121-21:99) 43.8% identity
(42:122-22:100) 43.8% identity

```

26  LAAAMKRHGLDNYRGYSLGNWVCAAKFESNFNTQATNRNTDGSTDYGILQINSRWWCNDGRTPGSRNLCN
   . . . . . : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
6   CEVFRELKDLKGYGGVSLPEWVCTTFHTSGYDTQAIVQNND-STEYGLFQINNKIWCKDDQNP HSSNICN

   IPCSALLSSDITASVNC AKKIVSDGN 122
   : : : : : : : : : : : : : : : :
   ISCDKFLDDDLTDDIMCVKKILDKVG 100
  
```

Alignments containing 16 window(s):

(43:123-23:100) 45.0% identity
(44:124-24:101) 43.8% identity
(45:125-25:102) 45.0% identity
(46:126-26:103) 45.0% identity
(47:127-27:104) 45.0% identity
(48:128-28:105) 43.8% identity
(49:129-29:106) 43.8% identity
(50:130-30:107) 43.8% identity
(51:131-31:108) 43.8% identity
(52:132-32:109) 43.8% identity
(53:133-33:110) 43.8% identity
(54:134-34:111) 45.0% identity
(55:135-35:112) 43.8% identity
(56:136-36:113) 43.8% identity
(57:137-37:114) 43.8% identity
(58:138-38:115) 43.8% identity

```

43  LGNWVCAAKFESNFNTQATNRNTDGSTDYGILQINSRWWCNDGRTPGSRNLCNIPCSALLSSDITASVNC
   . . . . . : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
23  LPEWVCTTFHTSGYDTQAIVQNND-STEYGLFQINNKIWCKDDQNP HSSNICNISCDKFLDDDLTDDIMC

   AKKIVSDGNGMNAWVAWRNRCKGTD 138
   . . . . . : : : : : : : : : : :
   VKKIL-DKVGINYWLAHKALCSEKL 115
  
```

Alignments containing 1 window(s):
(59:139-39:117) 43.2% identity

```
59 QATNRNTDGSTDYGILQINSRWWCNDGRTPGSRNLCNIPCSALLSSDITASVNCAKKIVSDGNGMNAWVA
   .. : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
39 QAI VQNND-STEYGLFQINNKIWCKDDQNP HSSNICNISCDKFLDDDLTDDIMCVKKIL-DKVGINYWLA
   . . . . .
   WRNRC-KGTDV 139
   . : :
   HKALCSEKLDQ 117
```

Alignments containing 2 window(s):
(60:140-40:117) 42.5% identity
(61:141-41:118) 41.2% identity

```
60 ATNRNTDGSTDYGILQINSRWWCNDGRTPGSRNLCNIPCSALLSSDITASVNCAKKIVSDGNGMNAWVAW
   : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
40 AIVQNND-STEYGLFQINNKIWCKDDQNP HSSNICNISCDKFLDDDLTDDIMCVKKIL-DKVGINYWLAH
   . . . . .
   RNRCKGTDVQA 141
   . : :
   KALCSEKLDQW 118
```

Alignments containing 3 window(s):
(62:142-42:118) 41.2% identity
(63:143-43:119) 41.2% identity
(64:144-44:120) 41.2% identity

```
62 NRNTDGSTDYGILQINSRWWCNDGRTPGSRNLCNIPCSALLSSDITASVNCAKKIVSDGNGMNAWVAWRN
   : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
42 VQNND-STEYGLFQINNKIWCKDDQNP HSSNICNISCDKFLDDDLTDDIMCVKKIL-DKVGINYWLAHKA
   . . . . .
   RCKGTDVQAWIR 144
   . : :
   LCS-EKLDQWLC 120
```

Alignments containing 1 window(s):
(65:145-44:121) 38.8% identity

```
65 TDGSTDYGILQINSRWWCNDGRTPGSRNLCNIPCSALLSSDITASVNCAKKIVSDGNGMNAWVAWRNRCKGTDVQAWIRG 145
   .. : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
44 NNDSTEYGLFQINNKIWCKDDQNP HSSNICNISCDKFLDDDLTDDIMCVKKIL-DKVGINYWLAHKALCS-EKLDQWLCE 121
```

Alignments containing 3 window(s):
(66:146-45:120) 40.0% identity
(67:147-46:121) 40.0% identity
(68:148-47:122) 40.0% identity

```
66 DGSTDYGILQINSRWWCNDGRTPGSRNLCNIPCSALLSSDITASVNCAKKIVSDGNGMNAWVAWRNRCKG
   . : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : :
45 NDSTEYGLFQINNKIWCKDDQNP HSSNICNISCDKFLDDDLTDDIMCVKKIL-DKVGINYWLAHKALCS-
   . . . . .
   TDVQAWIRGCR L 148
   . : :
   EKLDQWL--CEK 122
```

Celiac Results

Celiac database.

The epitope database is constructed by the combination of three different sources. Epitopes from Sollid and coauthors (<https://pubmed.ncbi.nlm.nih.gov/31735991/>), ProPepper (<https://www.propepper.net/epitope>) and AllergenOnline (<http://www.allergenonline.org/ceciabrowse.shtml>) were combined and duplicates were removed.

Last database update: 02/14/2021

FASTA.

For homology search Allermatch uses FASTA(v36.3.8h) with default the parameters(matrix = BLOSUM50(15:-5), open = -10, extend = -2, ktup = 2)

Identity search to known celiac epitopes.

Each of the ORF sequences has been compared with the epitope database using three different in-silico similarity search methods:

- A partial epitope match, where each epitope from the epitope database is compared to each ORF and the top hits are retained. All the hits are sorted on E-value and the top 100 with the lowest E-value are shown.
- An identical epitope match, where each epitope from the epitope database is compared to each ORF and only 100% hits are retained.
- A Q/E-X1-P-X2 motif search, where each of the possible 50 motif combinations is matched to each ORF. Additional a motif occurrence is calculated, which indicates how many times a certain motif is present in the epitope database.

Top 100 epitope match results

Based on E-Value

1

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHIC K	147	Glt-156 minimal epitope in considered Deamidated form	15	0.017	7	57.1	71.4	AllergenOnline
https://pubmed.ncbi.nlm.nih.gov/15714306								

```
53 ESNFNTQ 59
   :: ::
8  ESPFSQQ 14
```

2

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHIC K	147	Glt-156 minimal epitope	15	0.018	7	57.1	71.4	AllergenOnline
https://pubmed.ncbi.nlm.nih.gov/15714306								

```
53 ESNFNTQ 59
   :: ::
9  ESPFSQQ 15
```


3

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHIC K	147	Glt-156 minimal epitope in considered Deamidated form	15	0.018	7	57.1	71.4	AllergenOnline
https://pubmed.ncbi.nlm.nih.gov/15714306								

53 ESNFNTQ 59
::: :
7 ESPFSQQ 13

4

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHIC K	147	alpha-gliadin(p123-p132)	10	0.029	3	100.0	100.0	AllergenOnline
https://pubmed.ncbi.nlm.nih.gov/12594302								
https://pubmed.ncbi.nlm.nih.gov/18395083								

96 IPC 98
:::
3 IPC 5

5

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHIC K	147	LMW glutenin-glt-156 (p40-p59; E48 and E51)	20	0.029	7	57.1	71.4	AllergenOnline
https://pubmed.ncbi.nlm.nih.gov/12055577								

53 ESNFNTQ 59
::: :
12 ESPFSQQ 18

6

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHIC K	147	gamma5-gliadin (p227-237; E232)	11	0.032	4	75.0	100.0	AllergenOnline
https://pubmed.ncbi.nlm.nih.gov/15972656								

72 GILQ 75
:::
1 GIIQ 4

7

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHIC K	147	alpha gliadin 123-132	10	0.036	3	100.0	100.0	ProPepper
https://www.iedb.org/epitope/51376								

96 IPC 98
:::
3 IPC 5

8

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHICK K	147	LMW glutenin-glt-156 (p40-p59; E51)	20	0.037	7	57.1	71.4	AllergenOnline
https://pubmed.ncbi.nlm.nih.gov/12055577								

53 ESNFNTQ 59
::: :::
12 ESPFSQQ 18

9

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHICK K	147	Wheat peptide W09	12	0.04	3	100.0	100.0	AllergenOnline
https://pubmed.ncbi.nlm.nih.gov/20650871								

11 FLP 13
:::
4 FLP 6

10

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHICK K	147	gamma5-gliadin (p227 -p237) ; gamma-II ep itope	11	0.04	4	75.0	100.0	AllergenOnline
https://pubmed.ncbi.nlm.nih.gov/15972656								

72 GILQ 75
:::
1 GIIQ 4

11

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHICK K	147	Wheat peptide W09	14	0.042	3	100.0	100.0	AllergenOnline
https://pubmed.ncbi.nlm.nih.gov/20650871								

11 FLP 13
:::
5 FLP 7

12

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHICK K	147	alpha gliadin P11	15	0.043	3	100.0	100.0	ProPepper
https://www.iedb.org/epitope/139589								

11 FLP 13
:::
5 FLP 7

13

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHICK K	147	Wheat peptide W09	14	0.045	3	100.0	100.0	AllergenOnline
https://pubmed.ncbi.nlm.nih.gov/20650871								

11 FLP 13
:::
5 FLP 7

14

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHICK K	147	alpha-Glia AG11 (p78 -p95; E86)	17	0.046	3	100.0	100.0	AllergenOnline
https://pubmed.ncbi.nlm.nih.gov/19299713								

11 FLP 13
:::
6 FLP 8

15

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHICK K	147	alpha-Glia AG11 (p78 -p95)	17	0.048	3	100.0	100.0	AllergenOnline
https://pubmed.ncbi.nlm.nih.gov/19299713								

11 FLP 13
:::
6 FLP 8

16

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHICK K	147	DQ2-gamma-II peptide	11	0.049	4	75.0	100.0	ProPepper
https://www.iedb.org/epitope/20305								

72 GILQ 75
:::
1 GIIQ 4

17

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHICK K	147	alpha gliadin 78-95 AG11	17	0.049	3	100.0	100.0	ProPepper
https://www.iedb.org/epitope/109723								

11 FLP 13
:::
6 FLP 8

18

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHICK K	147	Wheat peptide W36	15	0.054	9	44.4	88.9	AllergenOnline
https://pubmed.ncbi.nlm.nih.gov/20650871								

1 MRSLLILVL 9
.:...:.
5 IRSVLRLTL 13

19

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHICK K	147	gamma gliadin 1	9	0.055	7	42.9	71.4	AllergenOnline
https://pubmed.ncbi.nlm.nih.gov/32728397								
https://pubmed.ncbi.nlm.nih.gov/22726570								

53 ESNFNTQ 59
.:...:.
2 EQSFPQQ 8

20

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHICK K	147	gamma gliadin	9	0.056	7	42.9	71.4	AllergenOnline
https://pubmed.ncbi.nlm.nih.gov/32728397								
https://pubmed.ncbi.nlm.nih.gov/22726570								

53 ESNFNTQ 59
.:...:.
2 EQSFPQQ 8

21

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHICK K	147	Wheat peptide W36	15	0.058	9	44.4	88.9	AllergenOnline
https://pubmed.ncbi.nlm.nih.gov/20650871								

1 MRSLLILVL 9
.:...:.
5 IRSVLRLTL 13

22

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHICK K	147	Wheat peptide W36	16	0.063	9	44.4	88.9	AllergenOnline
https://pubmed.ncbi.nlm.nih.gov/20650871								

1 MRSLLILVL 9
.:...:.
5 IRSVLRLTL 13

23

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHICK K	147	Wheat peptide W09	20	0.071	3	100.0	100.0	AllergenOnline
https://pubmed.ncbi.nlm.nih.gov/20650871								

11 FLP 13
:::
10 FLP 12

24

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHICK K	147	W36s	16	0.072	9	44.4	88.9	ProPepper
https://www.iedb.org/epitope/238963								

1 MRSLLILVL 9
:::
5 IRSVLRLTL 13

25

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHICK K	147	Rye peptide R12	12	0.072	3	100.0	100.0	AllergenOnline
https://pubmed.ncbi.nlm.nih.gov/20650871								

12 LPL 14
:::
10 LPL 12

26

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHICK K	147	Glia-gamma30-gliadin (p222-236; E225 and E231)	15	0.078	4	75.0	100.0	AllergenOnline
https://pubmed.ncbi.nlm.nih.gov/12055577								

72 GILQ 75
:::
5 GIIQ 8

27

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHICK K	147	W09	20	0.079	3	100.0	100.0	ProPepper
https://www.iedb.org/epitope/238729								

11 FLP 13
:::
10 FLP 12

28

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHICK	147	DQ2-y -II y-Glia (p222-p236; E229)	15	0.08	4	75.0	100.0	AllergenOnline
https://pubmed.ncbi.nlm.nih.gov/19299713								

72 GILQ 75
:::
3 GIIQ 6

29

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHICK	147	Rye peptide R09	12	0.083	3	100.0	100.0	AllergenOnline
https://pubmed.ncbi.nlm.nih.gov/20650871								

12 LPL 14
:::
2 LPL 4

30

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHICK	147	Rye peptide R12	12	0.084	3	100.0	100.0	AllergenOnline
https://pubmed.ncbi.nlm.nih.gov/20650871								

12 LPL 14
:::
10 LPL 12

31

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHICK	147	Wheat peptide W37	12	0.085	8	37.5	62.5	AllergenOnline
https://pubmed.ncbi.nlm.nih.gov/20650871								

119 DNGMNAW 126
:::
3 DPSGQVQW 10

32

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHICK	147	alpha2-gliadin 1448 (p231-p245)	15	0.086	14	28.6	71.4	AllergenOnline
https://pubmed.ncbi.nlm.nih.gov/16878175								

55 NFNTQATNRNTDGS 68
:::
2 SFQPSQQNPQAQGS 15

33

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHICK K	147	Wheat peptide W36	20	0.087	9	44.4	88.9	AllergenOnline
https://pubmed.ncbi.nlm.nih.gov/20650871								

1 MRSLLILVL 9
.:...:
9 IRSLLVRLTL 17

34

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHICK K	147	Glia-gamma30-gliadin (p222-236; E225)	15	0.088	4	75.0	100.0	AllergenOnline
https://pubmed.ncbi.nlm.nih.gov/12055577								

72 GILQ 75
.:...:
5 GIIQ 8

35

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHICK K	147	Glia-gamma30-gliadin (p222-236; E231)	15	0.088	4	75.0	100.0	AllergenOnline
https://pubmed.ncbi.nlm.nih.gov/12055577								

72 GILQ 75
.:...:
5 GIIQ 8

36

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHICK K	147	Glt-156 minimal epitope in considered native form	15	0.09	7	42.9	71.4	AllergenOnline
https://pubmed.ncbi.nlm.nih.gov/15714306								

53 ESNFNTQ 59
.:...:
7 QSPFSQQ 13

37

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHICK K	147	Rye peptide R01, R09	20	0.095	3	100.0	100.0	AllergenOnline
https://pubmed.ncbi.nlm.nih.gov/20650871								

12 LPL 14
.:...:
3 LPL 5

38

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHICK	147	R12E	12	0.096	3	100.0	100.0	ProPepper
https://www.iedb.org/epitope/238932								

12 LPL 14
:::
10 LPL 12

39

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHICK	147	Glia-gamma30-gliadin (p222-p236)	15	0.096	4	75.0	100.0	AllergenOnline
https://pubmed.ncbi.nlm.nih.gov/12055577								

72 GILQ 75
:::
5 GIIQ 8

40

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHICK	147	DQ2-y -II y-Glia (p222-p236)	15	0.096	4	75.0	100.0	AllergenOnline
https://pubmed.ncbi.nlm.nih.gov/19299713								

72 GILQ 75
:::
3 GIIQ 6

41

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHICK	147	W36	20	0.1	9	44.4	88.9	ProPepper
https://www.iedb.org/epitope/238943								

1 MRSLLILVL 9
:::
9 IRSLLVRL 17

42

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHICK	147	alpha-gliadin 4037	17	0.1	9	44.4	66.7	AllergenOnline
https://pubmed.ncbi.nlm.nih.gov/21091908								

71 YGILQINSR 79
:::
9 FGIFGTNYR 17

43

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHICK	147	Glt-156 minimal epitope in considered native form	15	0.1	7	42.9	71.4	AllergenOnline
https://pubmed.ncbi.nlm.nih.gov/15714306								

53 ESNFNTQ 59
:::
8 QSPFSSQ 14

44

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHICK	147	LMW glutenin-glt-156 (p45-p54; E48, E49 and E51) minimal epitope	10	0.1	4	75.0	75.0	AllergenOnline
https://pubmed.ncbi.nlm.nih.gov/15714306								

53 ESNF 56
:::
7 ESPF 10

45

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHICK	147	LMW glutenin-glt-156 (p46-p54; E48 and E51)	9	0.1	4	75.0	75.0	AllergenOnline
https://pubmed.ncbi.nlm.nih.gov/16091925								
https://pubmed.ncbi.nlm.nih.gov/12055577								
https://pubmed.ncbi.nlm.nih.gov/32728397								

53 ESNF 56
:::
6 ESPF 9

46

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHICK	147	Sec-gammal in Deamidated form	14	0.1	7	42.9	71.4	AllergenOnline
https://pubmed.ncbi.nlm.nih.gov/14517794								

53 ESNFNTQ 59
:::
5 EQSFPEQ 11

47

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHICK	147	R01	20	0.11	3	100.0	100.0	ProPepper
https://www.iedb.org/epitope/238942								

12 LPL 14
:::
3 LPL 5

48

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHICK	147	gliadin-gamma30 (222-236)	15	0.11	4	75.0	100.0	ProPepper
https://www.iedb.org/epitope/70564								

72 GILQ 75
:::
5 GIIQ 8

49

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHICK	147	alpha gliadin 251-270	20	0.11	9	44.4	66.7	ProPepper
https://www.iedb.org/epitope/72058								

71 YGILQINSR 79
:::
12 FGIFGTNYR 20

50

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHICK	147	HMW glutenin-glt04 (p707-p742)	36	0.11	29	13.8	62.1	AllergenOnline
https://pubmed.ncbi.nlm.nih.gov/10540324								

39 RGYSLGNWVCAAKFESNFNTQATNRNTDGS 67
:::
3 QGQRPQWLQPGQGQGYPTSPQQSGQGQ 31

51

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHICK	147	Sec-gammal in Deamidated form	14	0.11	7	42.9	71.4	AllergenOnline
https://pubmed.ncbi.nlm.nih.gov/14517794								

53 ESNFNTQ 59
:::
5 EQSFPEQ 11

52

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHICK	147	gamma gliadin 222-236 DQ2-gamma-II	15	0.12	4	75.0	100.0	ProPepper
https://www.iedb.org/epitope/109223								

72 GILQ 75
:::
3 GIIQ 6

53

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHICK K	147	1448	15	0.12	14	28.6	71.4	ProPepper
https://www.iedb.org/epitope/22327								

55 NFNTQATNRNTDGS 68

 2 SFQPSQQNPQAQGS 15

54

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHICK K	147	alpha-gliadin CAB769 61 (p251-p270)	20	0.12	9	44.4	66.7	AllergenOnline
https://pubmed.ncbi.nlm.nih.gov/17629515								

71 YGILQINSR 79

 12 FGIFGTNYR 20

55

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHICK K	147	LMW glutenin-glt-156 (p40-p59; E48)	20	0.12	7	42.9	71.4	AllergenOnline
https://pubmed.ncbi.nlm.nih.gov/12055577								

53 ESNFNTQ 59

 12 QSPFSQQ 18

56

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHICK K	147	LMW glutenin-glt-156 (p46-p54; E51)	9	0.12	4	75.0	75.0	AllergenOnline
https://pubmed.ncbi.nlm.nih.gov/16091925								
https://pubmed.ncbi.nlm.nih.gov/12055577								
https://pubmed.ncbi.nlm.nih.gov/32728397								

53 ESNF 56

 6 ESPF 9

57

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHICK K	147	Sec-gammal in Deamid ated form	14	0.12	7	42.9	71.4	AllergenOnline
https://pubmed.ncbi.nlm.nih.gov/14517794								

53 ESNFNTQ 59

 5 EQSFPQQ 11

58

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHICK	147	Sec-gammal in Deamidated form	14	0.12	7	42.9	71.4	AllergenOnline
https://pubmed.ncbi.nlm.nih.gov/14517794								

53 ESNFNTQ 59
: : : : :
5 EQSFPQQ 11

59

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHICK	147	DQ2.5-glut-L2	9	0.12	4	75.0	75.0	Sollid
https://pubmed.ncbi.nlm.nih.gov/15714306								
https://pubmed.ncbi.nlm.nih.gov/12055577								

53 ESNF 56
: : :
6 ESPF 9

60

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHICK	147	DQ2.2-glut-L-1 containing peptide	20	0.13	7	42.9	71.4	ProPepper
https://www.iedb.org/epitope/167143								

53 ESNFNTQ 59
: : : : :
12 QSPFSQQ 18

61

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHICK	147	DQ2.2-glut-L-1 containing peptide	20	0.13	7	42.9	71.4	ProPepper
https://www.iedb.org/epitope/52130								

53 ESNFNTQ 59
: : : : :
12 QSPFSQQ 18

62

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHICK	147	CAUTION 100% match to Archaea protein lower to others and to gamma5 (p63-p71; E63, E68 and E71)	9	0.13	7	42.9	57.1	AllergenOnline
https://pubmed.ncbi.nlm.nih.gov/15972656								

53 ESNFNTQ 59
: : : : :
1 EQPFPEQ 7

63

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHIC K	147	Wheat peptide W37	20	0.13	8	37.5	62.5	AllergenOnline
https://pubmed.ncbi.nlm.nih.gov/20650871								

119 DGNGMNAW 126
: : : : :
8 DPSGQVQW 15

64

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHIC K	147	gamma-gliadin 1383 (p141-p160)	20	0.13	6	50.0	83.3	AllergenOnline
https://pubmed.ncbi.nlm.nih.gov/16878175								

97 PCSALL 102
: : : : :
10 PCKNFL 15

65

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHIC K	147	LMW glutenin-glt-156 (p40-p59)	20	0.13	7	42.9	71.4	AllergenOnline
https://pubmed.ncbi.nlm.nih.gov/12055577								

53 ESNFNTQ 59
: : : : :
12 QSPFSQQ 18

66

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHIC K	147	LMW glutenin-glt-156 (p45-p54; E48 and E51) minimal epitope	10	0.13	4	75.0	75.0	AllergenOnline
https://pubmed.ncbi.nlm.nih.gov/12055577								
https://pubmed.ncbi.nlm.nih.gov/15714306								

53 ESNF 56
: : : : :
7 ESPF 10

67

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHIC K	147	Rye peptide R12	16	0.13	3	100.0	100.0	AllergenOnline
https://pubmed.ncbi.nlm.nih.gov/20650871								

12 LPL 14
: : : : :
12 LPL 14

68

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHIC K	147	alpha-gliadin p19 (p 21-p40)	20	0.14	12	25.0	66.7	AllergenOnline
https://pubmed.ncbi.nlm.nih.gov/8315377								

12 LPLAALGKVFGR 23
:::
2 VPLVQQQQFLGQ 13

69

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHIC K	147	Glt-156 minimal epit ope (p41-p55)	15	0.14	5	60.0	80.0	AllergenOnline
https://pubmed.ncbi.nlm.nih.gov/15714306								

53 ESNFN 57
:::
11 ESPFS 15

70

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHIC K	147	Glt-156 minimal epit ope in considered De amidated form	15	0.14	5	60.0	80.0	AllergenOnline
https://pubmed.ncbi.nlm.nih.gov/15714306								

53 ESNFN 57
:::
10 ESPFS 14

71

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHIC K	147	LMW glutenin-glt-156 (p45-p54; E49 and E 49) minimal epitope	10	0.14	4	75.0	75.0	AllergenOnline
https://pubmed.ncbi.nlm.nih.gov/15714306								

53 ESNF 56
:::
7 ESPF 10

72

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHIC K	147	Rye peptide R12	20	0.14	3	100.0	100.0	AllergenOnline
https://pubmed.ncbi.nlm.nih.gov/20650871								

12 LPL 14
:::
16 LPL 18

73

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHICK K	147	gamma gliadin peptid 1383	20	0.15	6	50.0	83.3	ProPepper
https://www.iedb.org/epitope/52318								

97 PCSALL 102
:::
10 PCKNFL 15

74

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHICK K	147	gamma5 (p62-p72; E68 , E63 and E71)	11	0.15	7	42.9	57.1	AllergenOnline
https://pubmed.ncbi.nlm.nih.gov/15972656								

53 ESNFNTQ 59
:::
2 EQPFPEQ 8

75

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHICK K	147	Wheat peptide W05	20	0.15	7	42.9	71.4	AllergenOnline
https://pubmed.ncbi.nlm.nih.gov/20650871								

53 ESNFNTQ 59
:::
11 EQPFSQQ 17

76

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHICK K	147	glt04 (p723-p735; E7 24)	13	0.15	7	42.9	57.1	AllergenOnline
https://pubmed.ncbi.nlm.nih.gov/22342873								
https://pubmed.ncbi.nlm.nih.gov/10540324								

84 DGRTPGS 90
:::
2 EGYPTS 8

77

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHICK K	147	Naturally occurring glutenins (p722-p736) (homolog of glt04)	15	0.15	7	57.1	57.1	AllergenOnline
https://pubmed.ncbi.nlm.nih.gov/10540324								

97 PCSALLS 103
:::
7 PTSPQLS 13

78

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHICK K	147	Rye peptide R21	12	0.15	8	37.5	62.5	AllergenOnline
https://pubmed.ncbi.nlm.nih.gov/20650871								

122 GMNAWVAW 129
: : : :
3 GPSGQVEW 10

79

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHICK K	147	R12	20	0.16	3	100.0	100.0	ProPepper
https://www.iedb.org/epitope/238384								

12 LPL 14
: : :
16 LPL 18

80

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHICK K	147	W37s	16	0.16	8	37.5	62.5	ProPepper
https://www.iedb.org/epitope/238519								

119 DGNGMNAW 126
: : : :
5 DPSGQVQW 12

81

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHICK K	147	R21E	12	0.16	8	37.5	62.5	ProPepper
https://www.iedb.org/epitope/238962								

122 GMNAWVAW 129
: : : :
3 GPSGQVEW 10

82

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHICK K	147	gamma-gliadin M23 M3 6999 (221-240) homologous to DQ2-gamma-I I	20	0.16	10	40.0	70.0	AllergenOnline
https://pubmed.ncbi.nlm.nih.gov/12198706								
https://pubmed.ncbi.nlm.nih.gov/16878175								

13 PLAALGKVFG 22
: : : :
3 PLFQLAQGLG 12

83

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHIC K	147	Glutenin-Glt-17 (p50 -p58; E52, E53 and E 55)	9	0.16	2	100.0	100.0	AllergenOnline
https://pubmed.ncbi.nlm.nih.gov/16091925								

13 PL 14
:::
8 PL 9

84

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHIC K	147	LMW glutenin-glt-156 (p45-p54; E51) mini mal epitope	10	0.16	4	75.0	75.0	AllergenOnline
https://pubmed.ncbi.nlm.nih.gov/12055577								
https://pubmed.ncbi.nlm.nih.gov/15714306								

53 ESNF 56
:::
7 ESPF 10

85

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHIC K	147	DQ8-glut-H1	9	0.16	6	50.0	50.0	Sollid
https://pubmed.ncbi.nlm.nih.gov/10540324								

85 GRTPGS 90
:::
2 GYYPTS 7

86

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHIC K	147	DQ8.5-glut-H1	9	0.16	6	50.0	50.0	Sollid
https://pubmed.ncbi.nlm.nih.gov/22013116								

85 GRTPGS 90
:::
2 GYYPTS 7

87

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHIC K	147	alpha-gliadin CAB769 60 (p253-p272)	20	0.17	4	50.0	100.0	AllergenOnline
https://pubmed.ncbi.nlm.nih.gov/17629515								

93 LCNI 96
:::
2 MCNV 5

88

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHIC K	147	gamma-gliadin 1391 (p231-p250) ; gamma-gliadin M24 M36999 (231-250) identical to DQ2-gamma-II	20	0.17	6	50.0	100.0	AllergenOnline
https://pubmed.ncbi.nlm.nih.gov/12198706								
https://pubmed.ncbi.nlm.nih.gov/16878175								

1 MRSLLI 6
.:...:
15 IRSLVL 20

89

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHIC K	147	alpha-gliadin (proline-rich domain)	16	0.18	7	42.9	42.9	AllergenOnline
https://pubmed.ncbi.nlm.nih.gov/1720424								

48 CAAKFES 54
.:...:
1 CPQPFPS 7

90

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHIC K	147	gamma5 (p62-p74; E63, E68 and E71)	13	0.18	7	42.9	57.1	AllergenOnline
https://pubmed.ncbi.nlm.nih.gov/15972656								

53 ESNFNTQ 59
.:...:
2 EQPFPEQ 8

91

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHIC K	147	Deamidated Glt-156 m animal epitope (p40-p59)	15	0.18	4	75.0	75.0	AllergenOnline
https://pubmed.ncbi.nlm.nih.gov/15714306								

53 ESNF 56
.:...:
12 ESPF 15

92

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHIC K	147	Naturally occurring glutenins (p722-p736) (homolog of glt04)	15	0.18	7	57.1	57.1	AllergenOnline
https://pubmed.ncbi.nlm.nih.gov/10540324								

97 PCSALLS 103
.:...:
7 PTSPLQS 13

93

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHIC K	147	Barley peptide B03	16	0.18	13	30.8	46.2	AllergenOnline
https://pubmed.ncbi.nlm.nih.gov/20650871								

85 GRTPGSRNLCNIP 97
:::
1 GQQFPFQPEQPIP 13

94

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHIC K	147	DQ8-glut-H1, DQ8.5-glut-H1	9	0.19	6	50.0	50.0	ProPepper
https://www.iedb.org/epitope/161144								

85 GRTPGS 90
:::
2 GYYPTS 7

95

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHIC K	147	G4-9A gliadin (p62-p75; E65 and A70)	14	0.19	5	60.0	60.0	AllergenOnline
https://pubmed.ncbi.nlm.nih.gov/12524402								

12 LPLAA 16
:::
5 LPYPA 9

96

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHIC K	147	Glutenin-Glt-17 (p50-p58; E53 and E55)	9	0.19	2	100.0	100.0	AllergenOnline
https://pubmed.ncbi.nlm.nih.gov/16091925								

13 PL 14
:::
8 PL 9

97

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHIC K	147	DQ2.2-glia-a1	9	0.19	4	50.0	100.0	Sollid
https://pubmed.ncbi.nlm.nih.gov/25261484								

56 FNTQ 59
:::
2 FSVQ 5

98

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHIC K	147	Wheat peptide W11	15	0.2	7	42.9	71.4	AllergenOnline
https://pubmed.ncbi.nlm.nih.gov/20650871								

53 ESNFNTQ 59
:::
8 EQTFPHQ 14

99

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHIC K	147	Glutenin-Glt-17 (p50 -p58; E52 and E53)	9	0.2	2	100.0	100.0	AllergenOnline
https://pubmed.ncbi.nlm.nih.gov/16091925								

13 PL 14
:::
8 PL 9

100

ID	Length	Hit ID	Length	E-value	Overlap	Identity	Similarity	Database
>LYSC_CHIC K	147	gamma gliadin M23	20	0.21	10	40.0	70.0	ProPepper
https://www.iedb.org/epitope/39165								

13 PLAALGKVFG 22
:::
3 PLFQLAQGLG 12



Jul-28-2021
WFSR
Report: test

Toxin Results

Toxin database.

For the toxin database sequences have been retrieved from Swiss-Prot's animal toxin annotation project(<https://www.uniprot.org/program/Toxins>). If annotated, signal- and propeptides are removed. This results in a database with a size of 7452.

Last database update: 01/28/2021

FASTA.

For homology search Allermatch uses FASTA(v36.3.8h) with default the parameters(matrix = BLOSUM50(15:-5), open = -10, extend = -2, ktup = 2)

Identity search to known toxins.

A full FASTA alignment search has been performed, where each ORF is compared to the sequences in the toxin database. For each ORF the top hits are retained. All the hits are sorted on E-value and the top 100 with the lowest E-value are shown.

Top 100 full-FASTA search results

Based on E-Value

1

ID	Length	Hit ID	Accession	Length	E-value	Overlap	Identity
>LYSC_CHI	147	TX219_APOSC	P49272	76	0.036	82	26.8
<pre> 878 RNTDGS TDY GILQINSRWWCNDGRTPG----SRNLCNIPCSALLSSDITASVNC AKKIVSDGNGMNAWVA ::::: 4 QNLGSDIPHDIIKLPNGQWC---KTPGALCSSRSEC---CKAKHSDSVTYSSGCSRQW-SDQQGL----- ::::: WRNRCKGTDVQA 140 ::::: FINQCRTCNVES 73 </pre>							

2

ID	Length	Hit ID	Accession	Length	E-value	Overlap	Identity
>LYSC_CHI	147	SCX12_CENNO	P63019	67	0.7	46	34.8
<pre> 874 DGRTE GSRNLCNIPCSALLSSDITASVNC AKKIVSDGNGMNAWVAW 129 ::::: 2 DGY-PLASNGCKFGCSGLGENNPTCNHVCEKKAGSDYGYCYAWTCY 46 </pre>							

3

ID	Length	Hit ID	Accession	Length	E-value	Overlap	Identity
>LYSC_CHI	147	SX15F_RHOJU	E7CLP4	65	0.97	59	33.9
<pre> 878 PGSRNLCNIPCSALLSSDITASVNC-AKKIVSDGNGMNAWVAWRNRCKGT----DVQAW 141 ::::: 5 PMGRNGCKIPCAI---NDNICKVEQAKWKQSDGYCY----SWGLSCYCTNLLEDAEVW 56 </pre>							

4

ID	Length	Hit ID	Accession	Length	E-value	Overlap	Identity
>LYSC_CHI	147	PA2A2_HELSU	P80003	142	1	54	29.6
26 LAAAM	KRHGLDNYRGYSLGNWVCAAKFESNFNTQATNRNTD--GSTDYGILQIN 77						
43	MAALEYKHGMRNYRPHTVSHCDNQRFRSCL-MNVKDRADLVGMTYFTVLKIS 95						

5

ID	Length	Hit ID	Accession	Length	E-value	Overlap	Identity
>LYSC_CHI	147	CRVP2_DISTY	Q2XXQ5	219	3.3	103	25.2
98 YRGY	SLGNWVCAAKF--ESNFNTQATNRNTDGDSTDYGILQI--NSRWWCNDGRTPGSRNLCNIPCSALLS						
122	YKSYRVG---CAASYCPSSSYNYFYVCQYCPAGNFAGLTATPYKSGPTCGDCPSACDNGLCTNPCS---R						
	SDITASVNC AKKIVSDGNGMNAWVAWRNRCKGT 136						
	EDVF--MNC-KSLVAQSNQCDDYI--RKNCPAT 213						

6

ID	Length	Hit ID	Accession	Length	E-value	Overlap	Identity
>LYSC_CHI	147	CRVP1_DISTY	Q2XXQ6	219	3.3	103	25.2
98 YRGY	SLGNWVCAAKF--ESNFNTQATNRNTDGDSTDYGILQI--NSRWWCNDGRTPGSRNLCNIPCSALLS						
122	YKSYRVG---CAASYCPSSSYNYFYVCQYCPAGNFAGLTATPYKSGPTCGDCPSACDNGLCTNPCS---R						
	SDITASVNC AKKIVSDGNGMNAWVAWRNRCKGT 136						
	EDVF--MNC-KSLVAQSNQCDDYI--RKNCPAT 213						

7

ID	Length	Hit ID	Accession	Length	E-value	Overlap	Identity
>LYSC_CHI	147	SX17F_RHOJU	E7CLP5	65	4.2	55	29.1
68 PGSRN	LNCNIPCSALLSSDITASVNC-AKKIVSDGNGMNAWVAWRNRCKGTDVQAW 141						
5	PMGRNGCKIPCAI---NDNICKTECQAKWKQSDGYCYSPGMSYCTNLPEDAENV 56						

8

ID	Length	Hit ID	Accession	Length	E-value	Overlap	Identity
>LYSC_CHI	147	TX216_APOSC	P49270	76	4.4	81	22.2
63 RNTDG	STDYGILQINSRWWCNDGRTPGSRNLCNIP---CSALLSSDITASVNC AKKIVSDGNGMNAWVAW						
4	QNLGSGIPHDKIKLPNGQWC---KTPG--DLCSSSSECCAKHSNSVTYASFCSRQW---SGQQALFI-						
	RNRCKGTDVQA 140						
	-NQCRTCNVES 73						

9

ID	Length	Hit ID	Accession	Length	E-value	Overlap	Identity
>LYSC_CHI	147	TOPC5_PHONI	P84093	80	4.7	77	27.3

57 NTQATNRNTDGGSTDYGILQINSRWWCNDGRTPGSRNLCNIPCSALLSSDITASVNC AKKIVSDGNGMNAWVAWRNRC 133
 2 NCIELNND CDGSKD-DCQCCRDNAYCSCYNFFGIKSGCK--CS-VGNSGTGYSV-CLKKL--ECPNRRAWTSWKKEC 71

10

ID	Length	Hit ID	Accession	Length	E-value	Overlap	Identity
>LYSC_CHI	147	PA2A3_TROCA	Q45Z28	124	6.2	54	31.5

82 CNDGRTPGSRNLCNIPCSALLSS-DITASVNC AKKIVSDGNGMNAW-VAWRNRC 133
 77 CNDGELTCKDN--NDECKAFICNCDRTAAICFARTPYNDAN----WNINTKTRC 124

11

ID	Length	Hit ID	Accession	Length	E-value	Overlap	Identity
>LYSC_CHI	147	TX214_APOSC	P49269	76	6.4	81	22.2

63 RNTDGGSTDYGILQINSRWWCNDGRTPGSRNLCNIP---CSALLSSDITASVNC AKKIVSDGNGMNAWVAW
 4 QNLGSGIPHDRIKLPNGQWC---KTPG--DLCSSSSECCAKHSNSVTYASFCSREW-SGQQGL-----F
 RNRCKGTDVQA 140
 INQCRTCNVE 73

12

ID	Length	Hit ID	Accession	Length	E-value	Overlap	Identity
>LYSC_CHI	147	PA2A2_TROCA	Q45Z29	124	7.5	54	31.5

82 CNDGRTPGSRNLCNIPCSALLSS-DITASVNC AKKIVSDGNGMNAW-VAWRNRC 133
 77 CNDGELTCKDN--NDECKAFICNCDRTAAICFARAPYNDAN----WNIDTKTRC 124

13

ID	Length	Hit ID	Accession	Length	E-value	Overlap	Identity
>LYSC_CHI	147	PA2A1_TROCA	Q45Z30	124	7.5	54	31.5

82 CNDGRTPGSRNLCNIPCSALLSS-DITASVNC AKKIVSDGNGMNAW-VAWRNRC 133
 77 CNDGELTCKDN--NDECKAFICNCDRTAAICFARTPYNDAN----WNIDTKTRC 124

14

ID	Length	Hit ID	Accession	Length	E-value	Overlap	Identity
>LYSC_CHI	147	CRVP_OPHHA	Q7ZT98	221	8.3	103	24.3

38 YRGYSLGNWV--CAAKFESNFNT--QATNRNTDGGSTDYGILQINSRWWCNDGRTPGSRNLCNIPCSALLS
 122 YKTYRIGCAVNYCPSSEYSYFYVCQYCPSGNMRGST---ATPYKSGPTCGDCPSACDNGLC TNPCT--LY
 SDITASVNC AKKIVSDGNGMNAWVAWRNCKGT 136
 NEYT---NC-DSL VKQSSCQDEWI--KSKCPAS 213

15

[illegible]

16

ID	Length	Hit ID	Accession	Length	E-value	Overlap	Identity
>LYSC_CHI8697	147	VM3B1_BOTJA	QONZY0	166	9.5	57	29.8
CNDGRTPGSRNLCNI PCSALLSSDITASVNC AKKIVSD----							
: : : : : :					:		
19 CDCGR-PGK---CQNPCCNATTC KLTGPSQCADGLCCDQCRFKGAGTECRAA-RSEC70							