Research article

Sistrurus catenatus edwardsii

	EXON I		EXON II					EXON III			
	S1	S2	S3	S4	S5	S6	S7	S8
3FTx 1	MKTLLVILGVVAFVYLDSGYS	LECYSCNMTFSILPLKL	CRSVM----	CPEGLDQCYINKTI	----	FPVLKIEKGCTTNCTQTWTD	---	KCCETNKCNII
3FTx 4	MKTLLLNVGVVAFVYLEPGYS	LECHTCKGLL	------CFDPKP--	CPEGLDQCFKNVTI	SLGL	IPVLKIEKGCTTNCTQTWTD	---	KCCQTNKCNII
3FTx 5	MKTLLVSVGVVAFVYLDSGYS	LECHTCKGLL	------CFDPKP--	CPEGLDQCFKNVTI	SLGL	FPVLKIEKGCTTNCTQTWTD	---	KCCETDKCNFI
3FTx 2	MKTLLVTVGVVAFVYLEPGYS	LICEACNLPN	-------CDFLPARP	CPKGFNQCYKKWNI	-IGL	SVMNIERGCTANCTPNAQT	---	KCCNTNLCNA-
3FTx 3	MKTLLLILGVVAFVYLEPGYT	TNCFTCTTWTLS	------CREFEK--	CPPDKGTCFKRWNST	-GI	AIRRRYTRGCAAACPNPVGN	EKV	FCCVTDNCNK-

Naja species

	S1	S2	S3	S4	S5	S6	S7	S8	S9
P29179 (01)		LTCLICPEKYCNKVH	TCLNGENICFKRFN	--RILG	----	KRYDLGCAAT	CPTVKTG-IVQ-	CCSTDKCNH	----

F

A[...]
[...]CBI
[...]
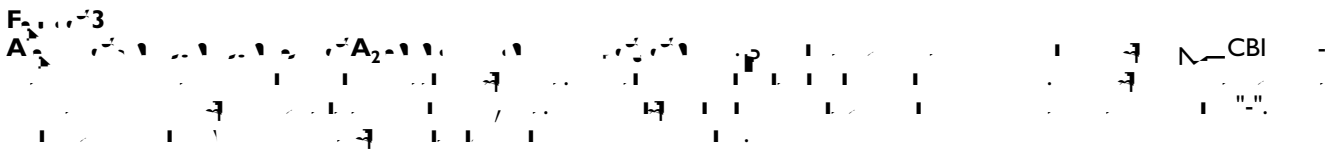[...]B[...](| 9).
[...]>50%[...]<50%[...]
[...]
[...]

```
Naja species
CAA54802(17) MTPAHLLILAAVCVSPLGASSSRPMPLNLYQFKNMIQCTVPSRSWWDFADYGCYCGRGGSGTPVDDLDRCCQVHDHCYNEAEKISGCWPYSKTYSYE-CSQGTLT-CKGGNNACAAAVCDCDRLAAICFAGAPYNNNNYNIDLKARCQ
P00600  (15)                       NLYQFKNMIQCTVPNRSWWHFANYGCYCGRGGSGTPVDDLDRCCQIHDNCYGEAEKISGCWPYIKTYTYESC-QGTLTSC-GANNKCAASVCDCDRVAANCFARATYNDKNYNIDFNARCQ
P60044  (12)                SNRPMPLNRWQFKNMISCTVPSRSWWDFADYGCYCGRGGSGTPVDDLDRCCQVHDNCYNEAEKISGCNPRFRTYSYE-CTAGTLT-CTGRNNACAASVCDCDRLAAICFAGAPYNDNNYNIDLQARCN

Pseudonaja textilis
AAD40976(16) MHPAHLLVPLGVCVSLLGAARIPPLPLSLVEFRILIKCANHNSRNVLDYADYGCYCGKGGSGTPVDELDRCCQAHDYCYDDAEKLPACNYRFSGPYWNPYSYKCNEGEVTCTDLNDECKAFICNCDRTAAICFAGAPYNDENFMITIKKKNICQ
AAZ22644(05) MHPAHLLVLLGVCVSLLGAASIPRPSLNIMLFGNMIQCTIPCEQSWLGYLDYGCYCGSGSSGIPVDDVDKCCKTHDECYYKAGQIPGCSVQPNEVFNVDYSYECNEGQLTCNESNNECEMAVCNCDRAAAICFARFPYNKNYWSINTEIH--CR

Austrelaps superbus
AAD56409(02) MYPAHLLLVLLAVCVSLLGASNIPLPSLDFEQFGKMIQCTIPCEESCLAYMDYGCYCGPGGSGTPLDELDRCRQTHDNCYAEAGKLPACKAMLSEPYNDTYSYGCIERQLTCNDPNDECKAFICNCDRAAVICFSGAPYNDSNYDIGTIEHCK
AAD56559(17) MYPAHLLVLLAVCVSLLGAASIPPQPLNLVQFSYLIQCANHGSRATWHYTDYGCYCGKGGSGTPVDELDRCCKIHDDCYGEAEK-KGCYPKMSA-----YDYYCGENGPYCRNIKKECQRFVCDCDVEAAKCFARAPYNDANWNIDTKKRCQ

Pseudechis species
AAZ22671(06) MSPAHLLVLLAVCVSLLGASDIPPQPLNLYQFKNMIQCANKGSRSWLDYVNYGCYCGWGGSGTPVDELDRCCQTHDNCYDQAGKKGCFPKLTLYSWQCTNNVPTCDSKSGCKDFVCACDAEAAKCFAKAPYKKENFKIDTKTRC
AAZ22669(19) MSPAHLLVLLAVCVSLLGASDIPPQPLNLYQFKNMIQCANKGSRATWHYLDYGCYCGPGGRGTPVDELDRCCQTHDNCYDQAGKKGCFPKLTLYSWQCTGNVPTCNSKSGCKDFVCACDAEAAKCFAKAPYKKENFKIDTKTRC

Crotalus species
2007272B(09) MRALWIVAVLLVGVEGHLLQFNKMIVPETRKNAIPPYAEYGCYCGWGGRGRPKDATDRCCFVHDCCYGKLAKCNTKWDIYPYSLKSGYITCGKGTWCEEQICECDRVAAECLRRSLSTYKYGYMFYPDSRCRGPSETC
Q8UVZ7  (02) MRTFWIVAMLLVGVEGSLVELGKMILQETGKNPITSYGIYGCNCGVGSRHKPKDGTDRCCFVHKCCYKKLTDCDPKMDGYTYSFKDKTIICDVNNPCLKEMCECDKAVAICLRENLDTYNKKYKIYPKFLCKKP-DTC
```
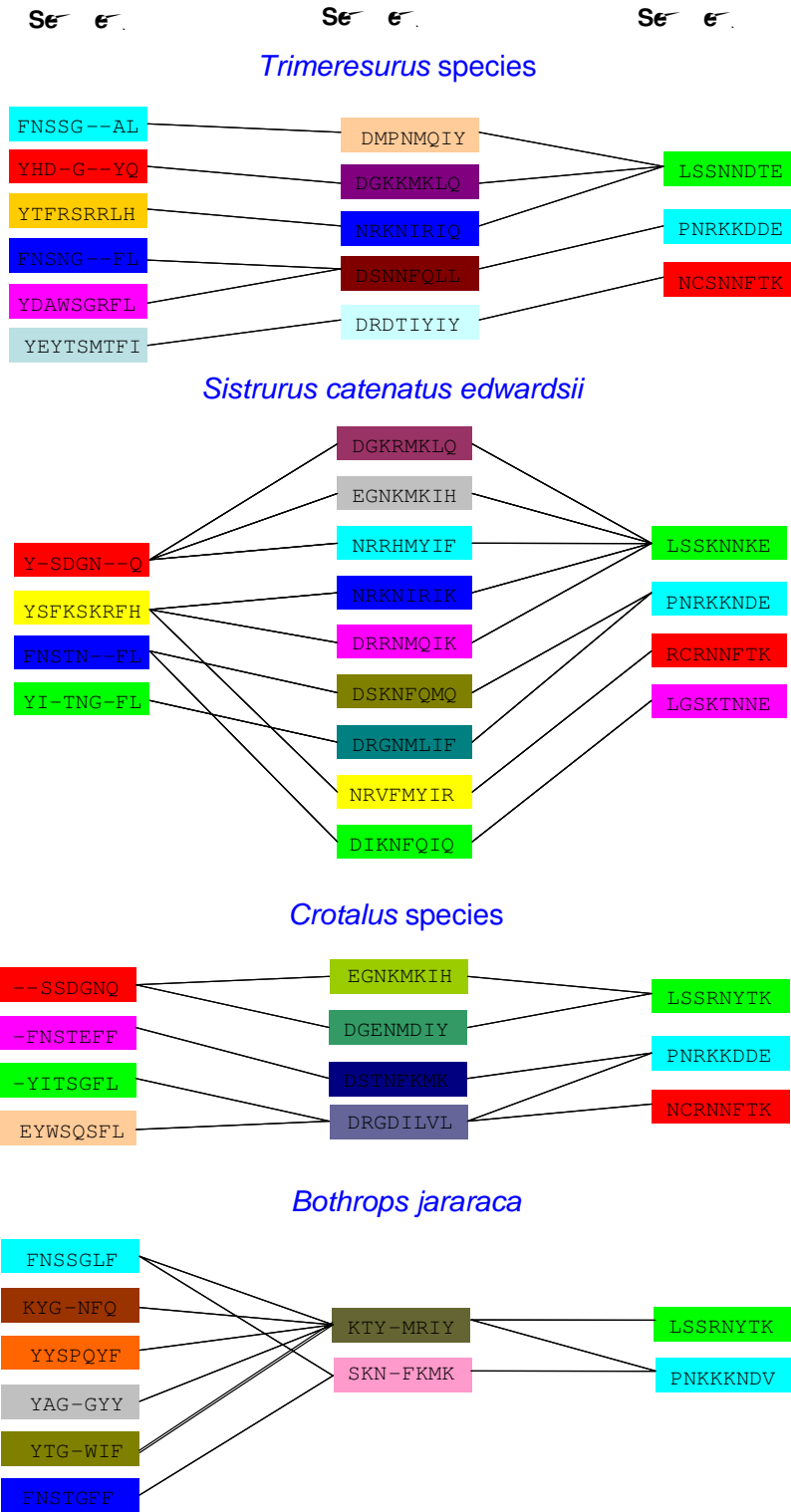
Serine protease family

Se e.   Se e.   Se e.

Trimeresurus species

FNSSG--AL   DMPNMQIY   LSSNNDTE
YHD-G--YQ   DGKKMKLQ   PNRKKDDE
YTFRSRRLH   NRKNIRIQ   NCSNNFTK
FNSNG--FL   DSNNFQLL
YDAWSGRFL   DRDTIYIY
YEYTSMTFI

Sistrurus catenatus edwardsii

DGKRMKLQ
EGNKMKIH
Y-SDGN--Q   NRRHMYIF   LSSKNNKE
YSFKSKRFH   NRKN1RIK   PNRKKNDE
FNSTN--FL   DRRNMQIK   RCRNNFTK
YI-TNG-FL   DSKNFQMQ   LGSKTNNE
             DRGNMLIF
             NRVFMYIR
             DIKNFQIQ

Crotalus species

--SSDGNQ   EGNKMKIH   LSSRNYTK
-FNSTEFF   DGENMDIY   PNRKKDDE
-YITSGFL   DSTNFKMK   NCRNNFTK
EYWSQSFL   DRGDILVL

Bothrops jararaca

FNSSGLF   KTY-MRIY   LSSRNYTK
KYG-NFQ   SKN-FKMK   PNKKKNDV
YYSPQYF
YAG-GYY
YTG-WIF
FNSTGFF

natus edwardsii] *Bothrops jararaca*

Metalloprotease family

Sistrurus catenatus edwardsii

M ASSET

Hyper-variable region

F----9

S ... (_AP) 2B (PDB ID: 2D___I) ...

ASSET ...

... 2.6 3.5 ...

... 71[. ...

3 ... 2 ...

...] (... 2, 4, 7]).

... / ...

... ( ).

... (2 ... 0), ...

01443 (... 1) ...

7 ... (...)] ...

... (...] ... 3). ...

... 3 ...

G ...

... 3 ... 3 ... (... ., 200), ...

... 3 ...

... 2 ...

(...) ...

M ...

Sequence analysis and identification of segments

16.

1991, **88**:2437-2440.
17.

FS2,

1995, **34**:5923-5937.
18.

E   :   EJ.   J   : H ;
2001:385-425.

57.   N   , G   ,   , E   , G   C,   HE,   :
   N   E   .   2003,
41:397-407.

58.   D,   -D   , H H ,   , D ,   , B -
   D,   : O   V   7   -
                1997, **272**:24279-24286.

59. A   -D   , G   C,   , C   - J, C   ,
        D,   : M   7-
                           2000,
275:29594-29601.

60. A   ,   D,   A:
                              1999, **274**:34851-34858.

61.   ,   D   F, D   - J-
       G   R
                    1993, **268**:909-916.

62.   C : A
   B   1978, **83**:101-115.

63.   D,   D   ,   B, H   A: S
      2-   K   1995,
3:1109-1119.

64.   : P.   A2 A C   M   P.
        P   E   : J   &
      ; 1997:1-28.

65.   , C   : M
                       C   2005, **45**:1-14.

66. F   J, E   D,   E,   : T
              (O   ).
                1976, **68**:457-469.

67. F   G, G   C: C
                  A2
                 2007, **7**:82.

68.   ,   ,   ,   G   , D   B   , D   J   17..565.