

ESAP1505F Sequence Listing
SEQUENCE LISTING

<110> EISAI R&D MANAGEMENT CO., LTD.

<120> ANTI-EPHA4 ANTIBODY

<130> ESAP1505F

<150> JP2015-177081

<151> 2015-09-08

<160> 85

<170> PatentIn version 3.5

<210> 1

<211> 986

<212> PRT

<213> Mus musculus

<400> 1

Met	Ala	Gly	Ile	Phe	Tyr	Phe	Ile	Leu	Phe	Ser	Phe	Leu	Phe	Gly	Ile
1				5				10						15	

Cys	Asp	Ala	Val	Thr	Gly	Ser	Arg	Val	Tyr	Pro	Ala	Asn	Glu	Val	Thr
			20					25					30		

Leu	Leu	Asp	Ser	Arg	Ser	Val	Gln	Gly	Glu	Leu	Gly	Trp	Ile	Ala	Ser
		35					40					45			

Pro	Leu	Glu	Gly	Gly	Trp	Glu	Glu	Val	Ser	Ile	Met	Asp	Glu	Lys	Asn
	50					55					60				

Thr	Pro	Ile	Arg	Thr	Tyr	Gln	Val	Cys	Asn	Val	Met	Glu	Ala	Ser	Gln
65				70						75					80

Asn	Asn	Trp	Leu	Arg	Thr	Asp	Trp	Ile	Thr	Arg	Glu	Gly	Ala	Gln	Arg
			85					90						95	

Val	Tyr	Ile	Glu	Ile	Lys	Phe	Thr	Leu	Arg	Asp	Cys	Asn	Ser	Leu	Pro
			100					105					110		

Gly	Val	Met	Gly	Thr	Cys	Lys	Glu	Thr	Phe	Asn	Leu	Tyr	Tyr	Tyr	Glu
		115					120					125			

ESAP1505F Sequence Listing

Ser Asp Asn Asp Lys Glu Arg Phe Ile Arg Glu Ser Gln Phe Gly Lys
130 135 140

Ile Asp Thr Ile Ala Ala Asp Glu Ser Phe Thr Gln Val Asp Ile Gly
145 150 155 160

Asp Arg Ile Met Lys Leu Asn Thr Glu Ile Arg Asp Val Gly Pro Leu
165 170 175

Ser Lys Lys Gly Phe Tyr Leu Ala Phe Gln Asp Val Gly Ala Cys Ile
180 185 190

Ala Leu Val Ser Val Arg Val Phe Tyr Lys Lys Cys Pro Leu Thr Val
195 200 205

Arg Asn Leu Ala Gln Phe Pro Asp Thr Ile Thr Gly Ala Asp Thr Ser
210 215 220

Ser Leu Val Glu Val Arg Gly Ser Cys Val Asn Asn Ser Glu Glu Lys
225 230 235 240

Asp Val Pro Lys Met Tyr Cys Gly Ala Asp Gly Glu Trp Leu Val Pro
245 250 255

Ile Gly Asn Cys Leu Cys Asn Ala Gly His Glu Glu Gln Asn Gly Glu
260 265 270

Cys Gln Ala Cys Lys Ile Gly Tyr Tyr Lys Ala Leu Ser Thr Asp Ala
275 280 285

Ser Cys Ala Lys Cys Pro Pro His Ser Tyr Ser Val Trp Glu Gly Ala
290 295 300

Thr Ser Cys Thr Cys Asp Arg Gly Phe Phe Arg Ala Asp Asn Asp Ala
305 310 315 320

Ala Ser Met Pro Cys Thr Arg Pro Pro Ser Ala Pro Leu Asn Leu Ile
325 330 335

ESAP1505F Sequence Listing

Ser Asn Val Asn Glu Thr Ser Val Asn Leu Glu Trp Ser Ser Pro Gln
340 345 350

Asn Thr Gly Gly Arg Gln Asp Ile Ser Tyr Asn Val Val Cys Lys Lys
355 360 365

Cys Gly Ala Gly Asp Pro Ser Lys Cys Arg Pro Cys Gly Ser Gly Val
370 375 380

His Tyr Thr Pro Gln Gln Asn Gly Leu Lys Thr Thr Arg Val Ser Ile
385 390 395 400

Thr Asp Leu Leu Ala His Thr Asn Tyr Thr Phe Glu Ile Trp Ala Val
405 410 415

Asn Gly Val Ser Lys Tyr Asn Pro Ser Pro Asp Gln Ser Val Ser Val
420 425 430

Thr Val Thr Thr Asn Gln Ala Ala Pro Ser Ser Ile Ala Leu Val Gln
435 440 445

Ala Lys Glu Val Thr Arg Tyr Ser Val Ala Leu Ala Trp Leu Glu Pro
450 455 460

Asp Arg Pro Asn Gly Val Ile Leu Glu Tyr Glu Val Lys Tyr Tyr Glu
465 470 475 480

Lys Asp Gln Asn Glu Arg Ser Tyr Arg Ile Val Arg Thr Ala Ala Arg
485 490 495

Asn Thr Asp Ile Lys Gly Leu Asn Pro Leu Thr Ser Tyr Val Phe His
500 505 510

Val Arg Ala Arg Thr Ala Ala Gly Tyr Gly Asp Phe Ser Glu Pro Leu
515 520 525

Glu Val Thr Thr Asn Thr Val Pro Ser Arg Ile Ile Gly Asp Gly Ala
530 535 540

ESAP1505F Sequence Listing

Asn Ser Thr Val Leu Leu Val Ser Val Ser Gly Ser Val Val Leu Val
545 550 555 560

Val Ile Leu Ile Ala Ala Phe Val Ile Ser Arg Arg Arg Ser Lys Tyr
565 570 575

Ser Lys Ala Lys Gln Glu Ala Asp Glu Glu Lys His Leu Asn Gln Gly
580 585 590

Val Arg Thr Tyr Val Asp Pro Phe Thr Tyr Glu Asp Pro Asn Gln Ala
595 600 605

Val Arg Glu Phe Ala Lys Glu Ile Asp Ala Ser Cys Ile Lys Ile Glu
610 615 620

Lys Val Ile Gly Val Gly Glu Phe Gly Glu Val Cys Ser Gly Arg Leu
625 630 635 640

Lys Val Pro Gly Lys Arg Glu Ile Cys Val Ala Ile Lys Thr Leu Lys
645 650 655

Ala Gly Tyr Thr Asp Lys Gln Arg Arg Asp Phe Leu Ser Glu Ala Ser
660 665 670

Ile Met Gly Gln Phe Asp His Pro Asn Ile Ile His Leu Glu Gly Val
675 680 685

Val Thr Lys Cys Lys Pro Val Met Ile Ile Thr Glu Tyr Met Glu Asn
690 695 700

Gly Ser Leu Asp Ala Phe Leu Arg Lys Asn Asp Gly Arg Phe Thr Val
705 710 715 720

Ile Gln Leu Val Gly Met Leu Arg Gly Ile Gly Ser Gly Met Lys Tyr
725 730 735

Leu Ser Asp Met Ser Tyr Val His Arg Asp Leu Ala Ala Arg Asn Ile
740 745 750

ESAP1505F Sequence Listing

Leu Val Asn Ser Asn Leu Val Cys Lys Val Ser Asp Phe Gly Met Ser
755 760 765

Arg Val Leu Glu Asp Asp Pro Glu Ala Ala Tyr Thr Thr Arg Gly Gly
770 775 780

Lys Ile Pro Ile Arg Trp Thr Ala Pro Glu Ala Ile Ala Tyr Arg Lys
785 790 795 800

Phe Thr Ser Ala Ser Asp Val Trp Ser Tyr Gly Ile Val Met Trp Glu
805 810 815

Val Met Ser Tyr Gly Glu Arg Pro Tyr Trp Asp Met Ser Asn Gln Asp
820 825 830

Val Ile Lys Ala Ile Glu Glu Gly Tyr Arg Leu Pro Pro Pro Met Asp
835 840 845

Cys Pro Ile Ala Leu His Gln Leu Met Leu Asp Cys Trp Gln Lys Glu
850 855 860

Arg Ser Asp Arg Pro Lys Phe Gly Gln Ile Val Asn Met Leu Asp Lys
865 870 875 880

Leu Ile Arg Asn Pro Asn Ser Leu Lys Arg Thr Gly Ser Glu Ser Ser
885 890 895

Arg Pro Asn Thr Ala Leu Leu Asp Pro Ser Ser Pro Glu Phe Ser Ala
900 905 910

Val Val Ser Val Gly Asp Trp Leu Gln Ala Ile Lys Met Asp Arg Tyr
915 920 925

Lys Asp Asn Phe Thr Ala Ala Gly Tyr Thr Thr Leu Glu Ala Val Val
930 935 940

His Met Ser Gln Asp Asp Leu Ala Arg Ile Gly Ile Thr Ala Ile Thr
945 950 955 960

ESAP1505F Sequence Listing

His Gln Asn Lys Ile Leu Ser Ser Val Gln Ala Met Arg Thr Gln Met
965 970 975

Gln Gln Met His Gly Arg Met Val Pro Val
980 985

<210> 2
<211> 528
<212> PRT
<213> Mus musculus

<400> 2

Val Thr Gly Ser Arg Val Tyr Pro Ala Asn Glu Val Thr Leu Leu Asp
1 5 10 15

Ser Arg Ser Val Gln Gly Glu Leu Gly Trp Ile Ala Ser Pro Leu Glu
20 25 30

Gly Gly Trp Glu Glu Val Ser Ile Met Asp Glu Lys Asn Thr Pro Ile
35 40 45

Arg Thr Tyr Gln Val Cys Asn Val Met Glu Ala Ser Gln Asn Asn Trp
50 55 60

Leu Arg Thr Asp Trp Ile Thr Arg Glu Gly Ala Gln Arg Val Tyr Ile
65 70 75 80

Glu Ile Lys Phe Thr Leu Arg Asp Cys Asn Ser Leu Pro Gly Val Met
85 90 95

Gly Thr Cys Lys Glu Thr Phe Asn Leu Tyr Tyr Tyr Glu Ser Asp Asn
100 105 110

Asp Lys Glu Arg Phe Ile Arg Glu Ser Gln Phe Gly Lys Ile Asp Thr
115 120 125

Ile Ala Ala Asp Glu Ser Phe Thr Gln Val Asp Ile Gly Asp Arg Ile
130 135 140

ESAP1505F Sequence Listing

Met Lys Leu Asn Thr Glu Ile Arg Asp Val Gly Pro Leu Ser Lys Lys
145 150 155 160

Gly Phe Tyr Leu Ala Phe Gln Asp Val Gly Ala Cys Ile Ala Leu Val
165 170 175

Ser Val Arg Val Phe Tyr Lys Lys Cys Pro Leu Thr Val Arg Asn Leu
180 185 190

Ala Gln Phe Pro Asp Thr Ile Thr Gly Ala Asp Thr Ser Ser Leu Val
195 200 205

Glu Val Arg Gly Ser Cys Val Asn Asn Ser Glu Glu Lys Asp Val Pro
210 215 220

Lys Met Tyr Cys Gly Ala Asp Gly Glu Trp Leu Val Pro Ile Gly Asn
225 230 235 240

Cys Leu Cys Asn Ala Gly His Glu Glu Gln Asn Gly Glu Cys Gln Ala
245 250 255

Cys Lys Ile Gly Tyr Tyr Lys Ala Leu Ser Thr Asp Ala Ser Cys Ala
260 265 270

Lys Cys Pro Pro His Ser Tyr Ser Val Trp Glu Gly Ala Thr Ser Cys
275 280 285

Thr Cys Asp Arg Gly Phe Phe Arg Ala Asp Asn Asp Ala Ala Ser Met
290 295 300

Pro Cys Thr Arg Pro Pro Ser Ala Pro Leu Asn Leu Ile Ser Asn Val
305 310 315 320

Asn Glu Thr Ser Val Asn Leu Glu Trp Ser Ser Pro Gln Asn Thr Gly
325 330 335

Gly Arg Gln Asp Ile Ser Tyr Asn Val Val Cys Lys Lys Cys Gly Ala
340 345 350

ESAP1505F Sequence Listing

Gly Asp Pro Ser Lys Cys Arg Pro Cys Gly Ser Gly Val His Tyr Thr
355 360 365

Pro Gln Gln Asn Gly Leu Lys Thr Thr Arg Val Ser Ile Thr Asp Leu
370 375 380

Leu Ala His Thr Asn Tyr Thr Phe Glu Ile Trp Ala Val Asn Gly Val
385 390 395 400

Ser Lys Tyr Asn Pro Ser Pro Asp Gln Ser Val Ser Val Thr Val Thr
405 410 415

Thr Asn Gln Ala Ala Pro Ser Ser Ile Ala Leu Val Gln Ala Lys Glu
420 425 430

Val Thr Arg Tyr Ser Val Ala Leu Ala Trp Leu Glu Pro Asp Arg Pro
435 440 445

Asn Gly Val Ile Leu Glu Tyr Glu Val Lys Tyr Tyr Glu Lys Asp Gln
450 455 460

Asn Glu Arg Ser Tyr Arg Ile Val Arg Thr Ala Ala Arg Asn Thr Asp
465 470 475 480

Ile Lys Gly Leu Asn Pro Leu Thr Ser Tyr Val Phe His Val Arg Ala
485 490 495

Arg Thr Ala Ala Gly Tyr Gly Asp Phe Ser Glu Pro Leu Glu Val Thr
500 505 510

Thr Asn Thr Val Pro Ser Arg Ile Ile Gly Asp Gly Ala Asn Ser Thr
515 520 525

<210> 3
<211> 986
<212> PRT
<213> Homo sapiens

<400> 3

ESAP1505F Sequence Listing

Met Ala Gly Ile Phe Tyr Phe Ala Leu Phe Ser Cys Leu Phe Gly Ile
1 5 10 15

Cys Asp Ala Val Thr Gly Ser Arg Val Tyr Pro Ala Asn Glu Val Thr
20 25 30

Leu Leu Asp Ser Arg Ser Val Gln Gly Glu Leu Gly Trp Ile Ala Ser
35 40 45

Pro Leu Glu Gly Gly Trp Glu Glu Val Ser Ile Met Asp Glu Lys Asn
50 55 60

Thr Pro Ile Arg Thr Tyr Gln Val Cys Asn Val Met Glu Pro Ser Gln
65 70 75 80

Asn Asn Trp Leu Arg Thr Asp Trp Ile Thr Arg Glu Gly Ala Gln Arg
85 90 95

Val Tyr Ile Glu Ile Lys Phe Thr Leu Arg Asp Cys Asn Ser Leu Pro
100 105 110

Gly Val Met Gly Thr Cys Lys Glu Thr Phe Asn Leu Tyr Tyr Tyr Glu
115 120 125

Ser Asp Asn Asp Lys Glu Arg Phe Ile Arg Glu Asn Gln Phe Val Lys
130 135 140

Ile Asp Thr Ile Ala Ala Asp Glu Ser Phe Thr Gln Val Asp Ile Gly
145 150 155 160

Asp Arg Ile Met Lys Leu Asn Thr Glu Ile Arg Asp Val Gly Pro Leu
165 170 175

Ser Lys Lys Gly Phe Tyr Leu Ala Phe Gln Asp Val Gly Ala Cys Ile
180 185 190

Ala Leu Val Ser Val Arg Val Phe Tyr Lys Lys Cys Pro Leu Thr Val
195 200 205

ESAP1505F Sequence Listing

Arg Asn Leu Ala Gln Phe Pro Asp Thr Ile Thr Gly Ala Asp Thr Ser
210 215 220

Ser Leu Val Glu Val Arg Gly Ser Cys Val Asn Asn Ser Glu Glu Lys
225 230 235 240

Asp Val Pro Lys Met Tyr Cys Gly Ala Asp Gly Glu Trp Leu Val Pro
245 250 255

Ile Gly Asn Cys Leu Cys Asn Ala Gly His Glu Glu Arg Ser Gly Glu
260 265 270

Cys Gln Ala Cys Lys Ile Gly Tyr Tyr Lys Ala Leu Ser Thr Asp Ala
275 280 285

Thr Cys Ala Lys Cys Pro Pro His Ser Tyr Ser Val Trp Glu Gly Ala
290 295 300

Thr Ser Cys Thr Cys Asp Arg Gly Phe Phe Arg Ala Asp Asn Asp Ala
305 310 315 320

Ala Ser Met Pro Cys Thr Arg Pro Pro Ser Ala Pro Leu Asn Leu Ile
325 330 335

Ser Asn Val Asn Glu Thr Ser Val Asn Leu Glu Trp Ser Ser Pro Gln
340 345 350

Asn Thr Gly Gly Arg Gln Asp Ile Ser Tyr Asn Val Val Cys Lys Lys
355 360 365

Cys Gly Ala Gly Asp Pro Ser Lys Cys Arg Pro Cys Gly Ser Gly Val
370 375 380

His Tyr Thr Pro Gln Gln Asn Gly Leu Lys Thr Thr Lys Val Ser Ile
385 390 395 400

Thr Asp Leu Leu Ala His Thr Asn Tyr Thr Phe Glu Ile Trp Ala Val
405 410 415

ESAP1505F Sequence Listing

Asn Gly Val Ser Lys Tyr Asn Pro Asn Pro Asp Gln Ser Val Ser Val
420 425 430

Thr Val Thr Thr Asn Gln Ala Ala Pro Ser Ser Ile Ala Leu Val Gln
435 440 445

Ala Lys Glu Val Thr Arg Tyr Ser Val Ala Leu Ala Trp Leu Glu Pro
450 455 460

Asp Arg Pro Asn Gly Val Ile Leu Glu Tyr Glu Val Lys Tyr Tyr Glu
465 470 475 480

Lys Asp Gln Asn Glu Arg Ser Tyr Arg Ile Val Arg Thr Ala Ala Arg
485 490 495

Asn Thr Asp Ile Lys Gly Leu Asn Pro Leu Thr Ser Tyr Val Phe His
500 505 510

Val Arg Ala Arg Thr Ala Ala Gly Tyr Gly Asp Phe Ser Glu Pro Leu
515 520 525

Glu Val Thr Thr Asn Thr Val Pro Ser Arg Ile Ile Gly Asp Gly Ala
530 535 540

Asn Ser Thr Val Leu Leu Val Ser Val Ser Gly Ser Val Val Leu Val
545 550 555 560

Val Ile Leu Ile Ala Ala Phe Val Ile Ser Arg Arg Arg Ser Lys Tyr
565 570 575

Ser Lys Ala Lys Gln Glu Ala Asp Glu Glu Lys His Leu Asn Gln Gly
580 585 590

Val Arg Thr Tyr Val Asp Pro Phe Thr Tyr Glu Asp Pro Asn Gln Ala
595 600 605

Val Arg Glu Phe Ala Lys Glu Ile Asp Ala Ser Cys Ile Lys Ile Glu
610 615 620

ESAP1505F Sequence Listing

Lys Val Ile Gly Val Gly Glu Phe Gly Glu Val Cys Ser Gly Arg Leu
625 630 635 640

Lys Val Pro Gly Lys Arg Glu Ile Cys Val Ala Ile Lys Thr Leu Lys
645 650 655

Ala Gly Tyr Thr Asp Lys Gln Arg Arg Asp Phe Leu Ser Glu Ala Ser
660 665 670

Ile Met Gly Gln Phe Asp His Pro Asn Ile Ile His Leu Glu Gly Val
675 680 685

Val Thr Lys Cys Lys Pro Val Met Ile Ile Thr Glu Tyr Met Glu Asn
690 695 700

Gly Ser Leu Asp Ala Phe Leu Arg Lys Asn Asp Gly Arg Phe Thr Val
705 710 715 720

Ile Gln Leu Val Gly Met Leu Arg Gly Ile Gly Ser Gly Met Lys Tyr
725 730 735

Leu Ser Asp Met Ser Tyr Val His Arg Asp Leu Ala Ala Arg Asn Ile
740 745 750

Leu Val Asn Ser Asn Leu Val Cys Lys Val Ser Asp Phe Gly Met Ser
755 760 765

Arg Val Leu Glu Asp Asp Pro Glu Ala Ala Tyr Thr Thr Arg Gly Gly
770 775 780

Lys Ile Pro Ile Arg Trp Thr Ala Pro Glu Ala Ile Ala Tyr Arg Lys
785 790 795 800

Phe Thr Ser Ala Ser Asp Val Trp Ser Tyr Gly Ile Val Met Trp Glu
805 810 815

Val Met Ser Tyr Gly Glu Arg Pro Tyr Trp Asp Met Ser Asn Gln Asp
820 825 830

ESAP1505F Sequence Listing

Val Ile Lys Ala Ile Glu Glu Gly Tyr Arg Leu Pro Pro Pro Met Asp
835 840 845

Cys Pro Ile Ala Leu His Gln Leu Met Leu Asp Cys Trp Gln Lys Glu
850 855 860

Arg Ser Asp Arg Pro Lys Phe Gly Gln Ile Val Asn Met Leu Asp Lys
865 870 875 880

Leu Ile Arg Asn Pro Asn Ser Leu Lys Arg Thr Gly Thr Glu Ser Ser
885 890 895

Arg Pro Asn Thr Ala Leu Leu Asp Pro Ser Ser Pro Glu Phe Ser Ala
900 905 910

Val Val Ser Val Gly Asp Trp Leu Gln Ala Ile Lys Met Asp Arg Tyr
915 920 925

Lys Asp Asn Phe Thr Ala Ala Gly Tyr Thr Thr Leu Glu Ala Val Val
930 935 940

His Val Asn Gln Glu Asp Leu Ala Arg Ile Gly Ile Thr Ala Ile Thr
945 950 955 960

His Gln Asn Lys Ile Leu Ser Ser Val Gln Ala Met Arg Thr Gln Met
965 970 975

Gln Gln Met His Gly Arg Met Val Pro Val
980 985

<210> 4
<211> 528
<212> PRT
<213> Homo sapiens

<400> 4

Val Thr Gly Ser Arg Val Tyr Pro Ala Asn Glu Val Thr Leu Leu Asp
1 5 10 15

Ser Arg Ser Val Gln Gly Glu Leu Gly Trp Ile Ala Ser Pro Leu Glu

ESAP1505F Sequence Listing

20

25

30

Gly Gly Trp Glu Glu Val Ser Ile Met Asp Glu Lys Asn Thr Pro Ile
35 40 45

Arg Thr Tyr Gln Val Cys Asn Val Met Glu Pro Ser Gln Asn Asn Trp
50 55 60

Leu Arg Thr Asp Trp Ile Thr Arg Glu Gly Ala Gln Arg Val Tyr Ile
65 70 75 80

Glu Ile Lys Phe Thr Leu Arg Asp Cys Asn Ser Leu Pro Gly Val Met
85 90 95

Gly Thr Cys Lys Glu Thr Phe Asn Leu Tyr Tyr Tyr Glu Ser Asp Asn
100 105 110

Asp Lys Glu Arg Phe Ile Arg Glu Asn Gln Phe Val Lys Ile Asp Thr
115 120 125

Ile Ala Ala Asp Glu Ser Phe Thr Gln Val Asp Ile Gly Asp Arg Ile
130 135 140

Met Lys Leu Asn Thr Glu Ile Arg Asp Val Gly Pro Leu Ser Lys Lys
145 150 155 160

Gly Phe Tyr Leu Ala Phe Gln Asp Val Gly Ala Cys Ile Ala Leu Val
165 170 175

Ser Val Arg Val Phe Tyr Lys Lys Cys Pro Leu Thr Val Arg Asn Leu
180 185 190

Ala Gln Phe Pro Asp Thr Ile Thr Gly Ala Asp Thr Ser Ser Leu Val
195 200 205

Glu Val Arg Gly Ser Cys Val Asn Asn Ser Glu Glu Lys Asp Val Pro
210 215 220

Lys Met Tyr Cys Gly Ala Asp Gly Glu Trp Leu Val Pro Ile Gly Asn

ESAP1505F Sequence Listing

Cys Leu Cys Asn Ala Gly His Glu Glu Arg Ser Gly Glu Cys Gln Ala
245 250 255

Cys Lys Ile Gly Tyr Tyr Lys Ala Leu Ser Thr Asp Ala Thr Cys Ala
260 265 270

Lys Cys Pro Pro His Ser Tyr Ser Val Trp Glu Gly Ala Thr Ser Cys
275 280 285

Thr Cys Asp Arg Gly Phe Phe Arg Ala Asp Asn Asp Ala Ala Ser Met
290 295 300

Pro Cys Thr Arg Pro Pro Ser Ala Pro Leu Asn Leu Ile Ser Asn Val
305 310 315 320

Asn Glu Thr Ser Val Asn Leu Glu Trp Ser Ser Pro Gln Asn Thr Gly
325 330 335

Gly Arg Gln Asp Ile Ser Tyr Asn Val Val Cys Lys Lys Cys Gly Ala
340 345 350

Gly Asp Pro Ser Lys Cys Arg Pro Cys Gly Ser Gly Val His Tyr Thr
355 360 365

Pro Gln Gln Asn Gly Leu Lys Thr Thr Lys Val Ser Ile Thr Asp Leu
370 375 380

Leu Ala His Thr Asn Tyr Thr Phe Glu Ile Trp Ala Val Asn Gly Val
385 390 395 400

Ser Lys Tyr Asn Pro Asn Pro Asp Gln Ser Val Ser Val Thr Val Thr
405 410 415

Thr Asn Gln Ala Ala Pro Ser Ser Ile Ala Leu Val Gln Ala Lys Glu
420 425 430

Val Thr Arg Tyr Ser Val Ala Leu Ala Trp Leu Glu Pro Asp Arg Pro

ESAP1505F Sequence Listing

435

440

445

Asn Gly Val Ile Leu Glu Tyr Glu Val Lys Tyr Tyr Glu Lys Asp Gln
 450 455 460

Asn Glu Arg Ser Tyr Arg Ile Val Arg Thr Ala Ala Arg Asn Thr Asp
 465 470 475 480

Ile Lys Gly Leu Asn Pro Leu Thr Ser Tyr Val Phe His Val Arg Ala
 485 490 495

Arg Thr Ala Ala Gly Tyr Gly Asp Phe Ser Glu Pro Leu Glu Val Thr
 500 505 510

Thr Asn Thr Val Pro Ser Arg Ile Ile Gly Asp Gly Ala Asn Ser Thr
 515 520 525

<210> 5
 <211> 12
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic primer

<400> 5
 acatcactcc gt 12

<210> 6
 <211> 50
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic primer

<400> 6
 acggagtgat gtccgtcgac gtatctctgc gttgatactt cagcgtagct 50

<210> 7
 <211> 26
 <212> DNA
 <213> Artificial Sequence

ESAP1505F Sequence Listing

<220>

<223> Synthetic primer

<400> 7

agctacgctg aagtatcaac gcagag

26

<210> 8

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic primer

<400> 8

gccagtggat agactgatgg

20

<210> 9

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic primer

<400> 9

gatggataca gttggtgcag c

21

<210> 10

<211> 19

<212> PRT

<213> Mus musculus

<400> 10

Met Ala Trp Val Trp Thr Leu Leu Phe Leu Met Ala Ala Ala Gln Ser

1

5

10

15

Ile Gln Ala

<210> 11

<211> 124

<212> PRT

<213> Mus musculus

<400> 11

ESAP1505F Sequence Listing

Gln Ile Gln Leu Val Gln Ser Gly Pro Glu Leu Lys Lys Pro Gly Glu
1 5 10 15

Thr Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asp Tyr
20 25 30

Ser Met His Trp Val Lys Gln Ala Pro Gly Lys Gly Leu Lys Trp Met
35 40 45

Gly Trp Ile Asn Thr Glu Thr Gly Glu Pro Thr Tyr Ala Asp Asp Phe
50 55 60

Lys Gly Arg Phe Ala Phe Ser Leu Glu Thr Ser Ala Ser Thr Ala Tyr
65 70 75 80

Leu Gln Ile Asn Asn Leu Lys Asn Glu Asp Thr Ala Thr Tyr Phe Cys
85 90 95

Ala Arg Ile Pro Leu Tyr Tyr Tyr Gly Ser Arg Tyr Trp Tyr Phe Asp
100 105 110

Val Trp Gly Ala Gly Thr Thr Val Thr Val Ser Ser
115 120

<210> 12
<211> 20
<212> PRT
<213> Mus musculus

<400> 12

Met Ser Val Pro Thr Gln Val Leu Gly Leu Leu Leu Leu Trp Leu Thr
1 5 10 15

Asp Ala Arg Cys
20

<210> 13
<211> 107
<212> PRT
<213> Mus musculus

ESAP1505F Sequence Listing

<400> 13

Asp Ile Gln Met Thr Gln Ser Pro Ala Ser Leu Ser Val Ser Val Gly
1 5 10 15

Glu Thr Val Thr Ile Thr Cys Arg Ala Ser Glu Asn Ile Tyr Arg Asn
20 25 30

Leu Ala Trp Tyr Gln Gln Lys Gln Gly Lys Ser Pro Gln Leu Leu Val
35 40 45

Tyr Ala Ala Thr Asn Leu Ala Asp Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

Ser Gly Ser Gly Thr Gln Tyr Ser Leu Lys Ile Asn Ser Leu Gln Ser
65 70 75 80

Glu Asp Phe Gly Ser Tyr Tyr Cys Gln His Phe Trp Gly Thr Pro Trp
85 90 95

Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys
100 105

<210> 14

<211> 57

<212> DNA

<213> Mus musculus

<400> 14

atggccttggg tgtggacctt gctattcctg atggcagctg cccaaagtat ccaagca 57

<210> 15

<211> 372

<212> DNA

<213> Mus musculus

<400> 15

cagatccagt tgggtgcagtc tggacctgag ctgaagaagc ctggagagac agtcaagatc 60

tcctgcaagg cttctgggta taccttcaca gactattcaa tgcactgggt gaagcaggct 120

ccaggaaagg gtttaaagtg gatgggctgg ataaacactg agactggtga gccaacatat 180

ESAP1505F Sequence Listing

gcagatgact tcaagggacg gtttgccttc tctttggaaa cctctgccag cactgcctat 240
 ttgcagatca acaacctcaa aaatgaggac acggctacat atttctgtgc tagaattccc 300
 ctctattact acggtagtag gtactgggtac ttcgatgtct ggggcgcagg gaccacggtc 360
 accgtctcct ca 372

<210> 16
 <211> 60
 <212> DNA
 <213> Mus musculus

<400> 16
 atgagtgtgc ccactcaggt cctggggttg ctgctgctgt ggcttacaga tgccagatgt 60

<210> 17
 <211> 321
 <212> DNA
 <213> Mus musculus

<400> 17
 gacatccaga tgactcagtc tccagcctcc ctatctgtat ctgtgggaga aactgtcacc 60
 atcacatgtc gagcaagtga gaatatttac agaaatttag catggtatca gcagaaacag 120
 ggaaaatctc ctgagctcct ggtctatgct gcaacaaact tagcagatgg tgtgccatca 180
 aggttcagtg gcagtggatc aggcacacag tattccctca agatcaacag cctgcagtct 240
 gaagattttg ggagttatta ctgtcaacat ttttggggta ctccgtggac gttcggtgga 300
 ggcaccaagc tggaaatcaa a 321

<210> 18
 <211> 40
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic primer

<400> 18
 gcgaagcttg ccgccacat ggcttgggtg tggaccttgc 40

<210> 19
 <211> 40
 <212> DNA

ESAP1505F Sequence Listing

<213> Artificial Sequence

<220>

<223> Synthetic primer

<400> 19

gcgaagcttg ccgccaccat gagtgtgccc actcaggtcc

40

<210> 20

<211> 36

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic primer

<400> 20

gcggaattca tcatttacca ggagagtggg agaggc

36

<210> 21

<211> 40

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic primer

<400> 21

cgcggaattca ctaacactca ttcctgttga agctcttgac

40

<210> 22

<211> 324

<212> PRT

<213> Mus musculus

<400> 22

Ala Lys Thr Thr Pro Pro Ser Val Tyr Pro Leu Ala Pro Gly Ser Ala
1 5 10 15

Ala Gln Thr Asn Ser Met Val Thr Leu Gly Cys Leu Val Lys Gly Tyr
20 25 30

Phe Pro Glu Pro Val Thr Val Thr Trp Asn Ser Gly Ser Leu Ser Ser
35 40 45

ESAP1505F Sequence Listing

Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Asp Leu Tyr Thr Leu
50 55 60

Ser Ser Ser Val Thr Val Pro Ser Ser Thr Trp Pro Ser Glu Thr Val
65 70 75 80

Thr Cys Asn Val Ala His Pro Ala Ser Ser Thr Lys Val Asp Lys Lys
85 90 95

Ile Val Pro Arg Asp Cys Gly Cys Lys Pro Cys Ile Cys Thr Val Pro
100 105 110

Glu Val Ser Ser Val Phe Ile Phe Pro Pro Lys Pro Lys Asp Val Leu
115 120 125

Thr Ile Thr Leu Thr Pro Lys Val Thr Cys Val Val Val Asp Ile Ser
130 135 140

Lys Asp Asp Pro Glu Val Gln Phe Ser Trp Phe Val Asp Asp Val Glu
145 150 155 160

Val His Thr Ala Gln Thr Gln Pro Arg Glu Glu Gln Phe Asn Ser Thr
165 170 175

Phe Arg Ser Val Ser Glu Leu Pro Ile Met His Gln Asp Trp Leu Asn
180 185 190

Gly Lys Glu Phe Lys Cys Arg Val Asn Ser Ala Ala Phe Pro Ala Pro
195 200 205

Ile Glu Lys Thr Ile Ser Lys Thr Lys Gly Arg Pro Lys Ala Pro Gln
210 215 220

Val Tyr Thr Ile Pro Pro Pro Lys Glu Gln Met Ala Lys Asp Lys Val
225 230 235 240

Ser Leu Thr Cys Met Ile Thr Asp Phe Phe Pro Glu Asp Ile Thr Val
245 250 255

ESAP1505F Sequence Listing

Glu Trp Gln Trp Asn Gly Gln Pro Ala Glu Asn Tyr Lys Asn Thr Gln
260 265 270

Pro Ile Met Asp Thr Asp Gly Ser Tyr Phe Val Tyr Ser Lys Leu Asn
275 280 285

Val Gln Lys Ser Asn Trp Glu Ala Gly Asn Thr Phe Thr Cys Ser Val
290 295 300

Leu His Glu Gly Leu His Asn His His Thr Glu Lys Ser Leu Ser His
305 310 315 320

Ser Pro Gly Lys

<210> 23
<211> 107
<212> PRT
<213> Mus musculus

<400> 23

Arg Ala Asp Ala Ala Pro Thr Val Ser Ile Phe Pro Pro Ser Ser Glu
1 5 10 15

Gln Leu Thr Ser Gly Gly Ala Ser Val Val Cys Phe Leu Asn Asn Phe
20 25 30

Tyr Pro Lys Asp Ile Asn Val Lys Trp Lys Ile Asp Gly Ser Glu Arg
35 40 45

Gln Asn Gly Val Leu Asn Ser Trp Thr Asp Gln Asp Ser Lys Asp Ser
50 55 60

Thr Tyr Ser Met Ser Ser Thr Leu Thr Leu Thr Lys Asp Glu Tyr Glu
65 70 75 80

Arg His Asn Ser Tyr Thr Cys Glu Ala Thr His Lys Thr Ser Thr Ser
85 90 95

Pro Ile Val Lys Ser Phe Asn Arg Asn Glu Cys

ESAP1505F Sequence Listing

100

105

<210> 24
<211> 975
<212> DNA
<213> Mus musculus

<400> 24
gccccaaacga cccccccatc tgtctatcca ctggcccctg gatctgctgc ccaaactaac 60
tccatgggtga ccctgggatg cctgggtcaag ggctatttcc ctgagccagt gacagtgacc 120
tggaactctg gatccctgtc cagcgggtgtg cacaccttcc cagctgtcct gcagtctgac 180
ctctacactc tgagcagctc agtgactgtc ccctccagca cctggcccag cgagaccgtc 240
acctgcaacg ttgccacccc ggccagcagc accaaggtgg acaagaaaat tgtgccagg 300
gattgtgggtt gtaagccttg catatgtaca gtcccagaag tatcatctgt cttcatcttc 360
cccccaaagc ccaaggatgt gtcaccatt actctgactc ctaaggtcac gtgtgtttgtg 420
gtagacatca gcaaggatga tcccagagtc cagttcagct ggttttaga tgatgtggag 480
gtgcacacag ctgagacgca accccgggag gagcagttca acagcacttt ccgctcagtc 540
agtgaacttc ccatcatgca ccaggactgg ctcaatggca aggagttcaa atgcagggtc 600
aacagtgcag ctttccctgc ccccatcgag aaaaccatct ccaaaaccaa aggcagaccg 660
aaggctccac aggtgtacac cattccacct cccaaggagc agatggccaa ggataaagtc 720
agtctgacct gcatgataac agacttcttc cctgaagaca ttactgtgga gtggcagtg 780
aatgggcagc cagcggagaa ctacaagaac actcagccca tcatggacac agatggctct 840
tacttcgtct acagcaagct caatgtgcag aagagcaact gggaggcagg aaatactttc 900
acctgctctg tgttacatga gggcctgcac aaccaccata ctgagaagag cctctccac 960
tctcctggta aatga 975

<210> 25
<211> 324
<212> DNA
<213> Mus musculus

<400> 25
cgggctgatg ctgcaccaac tgtatccatc ttcccacat ccagtgagca gttaacatct 60

ESAP1505F Sequence Listing

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ggaggtgcct cagtcgtgtg cttcttgaac aacttctacc ccaaagacat caatgtcaag      120
tggaagattg atggcagtga acgacaaaat ggcgtcctga acagttggac tgatcaggac      180
agcaaagaca gcacctacag catgagcagc accctcacgt tgaccaagga cgagtatgaa      240
cgacataaca gctatacctg tgaggccact cacaagacat caacttcacc cattgtcaag      300
agcttcaaca ggaatgagtg ttag                                              324

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<210> 26
<211> 5
<212> PRT
<213> Mus musculus

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<400> 26

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Asp Tyr Ser Met His
1              5

```

```

<210> 27
<211> 10
<212> PRT
<213> Mus musculus

```

<400> 27

```

Gly Tyr Thr Phe Thr Asp Tyr Ser Met His
1              5              10

```

```

<210> 28
<211> 17
<212> PRT
<213> Mus musculus

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<400> 28

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Trp Ile Asn Thr Glu Thr Gly Glu Pro Thr Tyr Ala Asp Asp Phe Lys
1              5              10              15

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Gly

```

<210> 29
<211> 10
<212> PRT
<213> Mus musculus

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ESAP1505F Sequence Listing

<400> 29

Trp Ile Asn Thr Glu Thr Gly Glu Pro Thr
1 5 10

<210> 30

<211> 15

<212> PRT

<213> Mus musculus

<400> 30

Ile Pro Leu Tyr Tyr Tyr Gly Ser Arg Tyr Trp Tyr Phe Asp Val
1 5 10 15

<210> 31

<211> 11

<212> PRT

<213> Mus musculus

<400> 31

Arg Ala Ser Glu Asn Ile Tyr Arg Asn Leu Ala
1 5 10

<210> 32

<211> 7

<212> PRT

<213> Mus musculus

<400> 32

Ala Ala Thr Asn Leu Ala Asp
1 5

<210> 33

<211> 9

<212> PRT

<213> Mus musculus

<400> 33

Gln His Phe Trp Gly Thr Pro Trp Thr
1 5

<210> 34

ESAP1505F Sequence Listing

<211>	15	
<212>	DNA	
<213>	Mus musculus	
<400>	34	
	gactattcaa tgcac	15
<210>	35	
<211>	30	
<212>	DNA	
<213>	Mus musculus	
<400>	35	
	ggttatacct tcacagacta ttcaatgcac	30
<210>	36	
<211>	51	
<212>	DNA	
<213>	Mus musculus	
<400>	36	
	tggataaaca ctgagactgg tgagccaaca tatgcagatg acttcaaggg a	51
<210>	37	
<211>	30	
<212>	DNA	
<213>	Mus musculus	
<400>	37	
	tggataaaca ctgagactgg tgagccaaca	30
<210>	38	
<211>	45	
<212>	DNA	
<213>	Mus musculus	
<400>	38	
	attccctct attactacgg tagtaggtac tggacttcg atgtc	45
<210>	39	
<211>	33	
<212>	DNA	
<213>	Mus musculus	
<400>	39	
	cgagcaagtg agaataattta cagaaattta gca	33

ESAP1505F Sequence Listing

<210> 40
 <211> 21
 <212> DNA
 <213> Mus musculus
 <400> 40
 gctgcaacaa acttagcaga t 21

<210> 41
 <211> 27
 <212> DNA
 <213> Mus musculus
 <400> 41
 caacattttt ggggtactcc gtggacg 27

<210> 42
 <211> 19
 <212> PRT
 <213> Mus musculus
 <400> 42
 Met Ala Gly Ile Phe Tyr Phe Ile Leu Phe Ser Phe Leu Phe Gly Ile
 1 5 10 15

Cys Asp Ala

<210> 43
 <211> 1030
 <212> PRT
 <213> Mus musculus
 <400> 43
 Val Thr Gly Ser Arg Val Tyr Pro Ala Asn Glu Val Thr Leu Leu Asp
 1 5 10 15

Ser Arg Ser Val Gln Gly Glu Leu Gly Trp Ile Ala Ser Pro Leu Glu
 20 25 30

Gly Gly Trp Glu Glu Val Ser Ile Met Asp Glu Lys Asn Thr Pro Ile
 35 40 45

ESAP1505F Sequence Listing

Arg Thr Tyr Gln Val Cys Asn Val Met Glu Ala Ser Gln Asn Asn Trp
50 55 60

Leu Arg Thr Asp Trp Ile Thr Arg Glu Gly Ala Gln Arg Val Tyr Ile
65 70 75 80

Glu Ile Lys Phe Thr Leu Arg Asp Cys Asn Ser Leu Pro Gly Val Met
85 90 95

Gly Thr Cys Lys Glu Thr Phe Asn Leu Tyr Tyr Tyr Glu Ser Asp Asn
100 105 110

Asp Lys Glu Arg Phe Ile Arg Glu Ser Gln Phe Gly Lys Ile Asp Thr
115 120 125

Ile Ala Ala Asp Glu Ser Phe Thr Gln Val Asp Ile Gly Asp Arg Ile
130 135 140

Met Lys Leu Asn Thr Glu Ile Arg Asp Val Gly Pro Leu Ser Lys Lys
145 150 155 160

Gly Phe Tyr Leu Ala Phe Gln Asp Val Gly Ala Cys Ile Ala Leu Val
165 170 175

Ser Val Arg Val Phe Tyr Lys Lys Cys Pro Leu Thr Val Arg Asn Leu
180 185 190

Ala Gln Phe Pro Asp Thr Ile Thr Gly Ala Asp Thr Ser Ser Leu Val
195 200 205

Glu Val Arg Gly Ser Cys Val Asn Asn Ser Glu Glu Lys Asp Val Pro
210 215 220

Lys Met Tyr Cys Gly Ala Asp Gly Glu Trp Leu Val Pro Ile Gly Asn
225 230 235 240

Cys Leu Cys Asn Ala Gly His Glu Glu Gln Asn Gly Glu Cys Gln Ala
245 250 255

ESAP1505F Sequence Listing

Cys Lys Ile Gly Tyr Tyr Lys Ala Leu Ser Thr Asp Ala Ser Cys Ala
260 265 270

Lys Cys Pro Pro His Ser Tyr Ser Val Trp Glu Gly Ala Thr Ser Cys
275 280 285

Thr Cys Asp Arg Gly Phe Phe Arg Ala Asp Asn Asp Ala Ala Ser Met
290 295 300

Pro Cys Thr Arg Pro Pro Ser Ala Pro Leu Asn Leu Ile Ser Asn Val
305 310 315 320

Asn Glu Thr Ser Val Asn Leu Glu Trp Ser Ser Pro Gln Asn Thr Gly
325 330 335

Gly Arg Gln Asp Ile Ser Tyr Asn Val Val Cys Lys Lys Cys Gly Ala
340 345 350

Gly Asp Pro Ser Lys Cys Arg Pro Cys Gly Ser Gly Val His Tyr Thr
355 360 365

Pro Gln Gln Asn Gly Leu Lys Thr Thr Arg Val Ser Ile Thr Asp Leu
370 375 380

Leu Ala His Thr Asn Tyr Thr Phe Glu Ile Trp Ala Val Asn Gly Val
385 390 395 400

Ser Lys Tyr Asn Pro Ser Pro Asp Gln Ser Val Ser Val Thr Val Thr
405 410 415

Thr Asn Gln Ala Ala Pro Ser Ser Ile Ala Leu Val Gln Ala Lys Glu
420 425 430

Val Thr Arg Tyr Ser Val Ala Leu Ala Trp Leu Glu Pro Asp Arg Pro
435 440 445

Asn Gly Val Ile Leu Glu Tyr Glu Val Lys Tyr Tyr Glu Lys Asp Gln
450 455 460

ESAP1505F Sequence Listing

Asn Glu Arg Ser Tyr Arg Ile Val Arg Thr Ala Ala Arg Asn Thr Asp
465 470 475 480

Ile Lys Gly Leu Asn Pro Leu Thr Ser Tyr Val Phe His Val Arg Ala
485 490 495

Arg Thr Ala Ala Gly Tyr Gly Asp Phe Ser Glu Pro Leu Glu Val Thr
500 505 510

Thr Asn Thr Val Pro Ser Arg Ile Ile Gly Asp Gly Ala Asn Ser Thr
515 520 525

Ala Ala Ala Ile Ile Pro Val Glu Glu Glu Asn Pro Asp Phe Trp Asn
530 535 540

Arg Glu Ala Ala Glu Ala Leu Gly Ala Ala Lys Lys Leu Gln Pro Ala
545 550 555 560

Gln Thr Ala Ala Lys Asn Leu Ile Ile Phe Leu Gly Asp Gly Met Gly
565 570 575

Val Ser Thr Val Thr Ala Ala Arg Ile Leu Lys Gly Gln Lys Lys Asp
580 585 590

Lys Leu Gly Pro Glu Ile Pro Leu Ala Met Asp Arg Phe Pro Tyr Val
595 600 605

Ala Leu Ser Lys Thr Tyr Asn Val Asp Lys His Val Pro Asp Ser Gly
610 615 620

Ala Thr Ala Thr Ala Tyr Leu Cys Gly Val Lys Gly Asn Phe Gln Thr
625 630 635 640

Ile Gly Leu Ser Ala Ala Ala Arg Phe Asn Gln Cys Asn Thr Thr Arg
645 650 655

Gly Asn Glu Val Ile Ser Val Met Asn Arg Ala Lys Lys Ala Gly Lys
660 665 670

ESAP1505F Sequence Listing

Ser Val Gly Val Val Thr Thr Thr Arg Val Gln His Ala Ser Pro Ala
675 680 685

Gly Thr Tyr Ala His Thr Val Asn Arg Asn Trp Tyr Ser Asp Ala Asp
690 695 700

Val Pro Ala Ser Ala Arg Gln Glu Gly Cys Gln Asp Ile Ala Thr Gln
705 710 715 720

Leu Ile Ser Asn Met Asp Ile Asp Val Ile Leu Gly Gly Gly Arg Lys
725 730 735

Tyr Met Phe Arg Met Gly Thr Pro Asp Pro Glu Tyr Pro Asp Asp Tyr
740 745 750

Ser Gln Gly Gly Thr Arg Leu Asp Gly Lys Asn Leu Val Gln Glu Trp
755 760 765

Leu Ala Lys Arg Gln Gly Ala Arg Tyr Val Trp Asn Arg Thr Glu Leu
770 775 780

Met Gln Ala Ser Leu Asp Pro Ser Val Thr His Leu Met Gly Leu Phe
785 790 795 800

Glu Pro Gly Asp Met Lys Tyr Glu Ile His Arg Asp Ser Thr Leu Asp
805 810 815

Pro Ser Leu Met Glu Met Thr Glu Ala Ala Leu Arg Leu Leu Ser Arg
820 825 830

Asn Pro Arg Gly Phe Phe Leu Phe Val Glu Gly Gly Arg Ile Asp His
835 840 845

Gly His His Glu Ser Arg Ala Tyr Arg Ala Leu Thr Glu Thr Ile Met
850 855 860

Phe Asp Asp Ala Ile Glu Arg Ala Gly Gln Leu Thr Ser Glu Glu Asp
865 870 875 880

ESAP1505F Sequence Listing

Thr Leu Ser Leu Val Thr Ala Asp His Ser His Val Phe Ser Phe Gly
885 890 895

Gly Tyr Pro Leu Arg Gly Ser Ser Ile Phe Gly Leu Ala Pro Gly Lys
900 905 910

Ala Arg Asp Arg Lys Ala Tyr Thr Val Leu Leu Tyr Gly Asn Gly Pro
915 920 925

Gly Tyr Val Leu Lys Asp Gly Ala Arg Pro Asp Val Thr Glu Ser Glu
930 935 940

Ser Gly Ser Pro Glu Tyr Arg Gln Gln Ser Ala Val Pro Leu Asp Glu
945 950 955 960

Glu Thr His Ala Gly Glu Asp Val Ala Val Phe Ala Arg Gly Pro Gln
965 970 975

Ala His Leu Val His Gly Val Gln Glu Gln Thr Phe Ile Ala His Val
980 985 990

Met Ala Phe Ala Ala Cys Leu Glu Pro Tyr Thr Ala Cys Asp Leu Ala
995 1000 1005

Pro Pro Ala Gly Thr Thr Asp Ala Ala His Pro Gly His His His
1010 1015 1020

His His His His His His His
1025 1030

<210> 44
<211> 986
<212> PRT
<213> Macaca mulatta

<400> 44

Met Ala Gly Ile Phe Tyr Phe Ala Leu Phe Ser Cys Leu Phe Gly Ile
1 5 10 15

ESAP1505F Sequence Listing

Cys Asp Ala Val Thr Gly Ser Arg Val Tyr Pro Ala Asn Glu Val Thr
20 25 30

Leu Leu Asp Ser Arg Ser Val Gln Gly Glu Leu Gly Trp Ile Ala Ser
35 40 45

Pro Leu Glu Gly Gly Trp Glu Glu Val Ser Ile Met Asp Glu Lys Asn
50 55 60

Thr Pro Ile Arg Thr Tyr Gln Val Cys Asn Val Met Glu Pro Ser Gln
65 70 75 80

Asn Asn Trp Leu Arg Thr Asp Trp Ile Thr Arg Glu Gly Ala Gln Arg
85 90 95

Val Tyr Ile Glu Ile Lys Phe Thr Leu Arg Asp Cys Asn Ser Leu Pro
100 105 110

Gly Val Met Gly Thr Cys Lys Glu Thr Phe Asn Leu Tyr Tyr Tyr Glu
115 120 125

Ser Asp Asn Asp Lys Glu Arg Phe Ile Arg Glu Asn Gln Phe Val Lys
130 135 140

Ile Asp Thr Ile Ala Ala Asp Glu Ser Phe Thr Gln Val Asp Ile Gly
145 150 155 160

Asp Arg Ile Met Lys Leu Asn Thr Glu Ile Arg Asp Val Gly Pro Leu
165 170 175

Ser Lys Lys Gly Phe Tyr Leu Ala Phe Gln Asp Val Gly Ala Cys Ile
180 185 190

Ala Leu Val Ser Val Arg Val Phe Tyr Lys Lys Cys Pro Leu Thr Val
195 200 205

Arg Asn Leu Ala Gln Phe Pro Asp Thr Ile Thr Gly Ala Asp Thr Ser
210 215 220

ESAP1505F Sequence Listing

Ser Leu Val Glu Val Arg Gly Ser Cys Val Asn Asn Ser Glu Glu Lys
225 230 235 240

Asp Val Pro Lys Met Tyr Cys Gly Ala Asp Gly Glu Trp Leu Val Pro
245 250 255

Ile Gly Asn Cys Leu Cys Asn Ala Gly His Glu Glu Arg Ser Gly Glu
260 265 270

Cys Gln Ala Cys Lys Ile Gly Tyr Tyr Lys Ala Leu Ser Thr Asp Ala
275 280 285

Thr Cys Ala Lys Cys Pro Pro His Ser Tyr Ser Val Trp Glu Gly Ala
290 295 300

Thr Ser Cys Thr Cys Asp Arg Gly Phe Phe Arg Ala Asp Asn Asp Ala
305 310 315 320

Ala Ser Met Pro Cys Thr Arg Pro Pro Ser Ala Pro Leu Asn Leu Ile
325 330 335

Ser Asn Val Asn Glu Thr Ser Val Asn Leu Glu Trp Ser Ser Pro Gln
340 345 350

Asn Thr Gly Gly Arg Gln Asp Ile Ser Tyr Asn Val Val Cys Lys Lys
355 360 365

Cys Gly Ala Gly Asp Pro Ser Lys Cys Arg Pro Cys Gly Ser Gly Val
370 375 380

His Tyr Thr Pro Gln Gln Asn Gly Leu Lys Thr Thr Lys Val Ser Ile
385 390 395 400

Thr Asp Leu Leu Ala His Thr Asn Tyr Thr Phe Glu Ile Trp Ala Val
405 410 415

Asn Gly Val Ser Lys Tyr Asn Pro Ser Pro Asp Gln Ser Val Ser Val
420 425 430

ESAP1505F Sequence Listing

Thr Val Thr Thr Asn Gln Ala Ala Pro Ser Ser Ile Ala Leu Val Gln
435 440 445

Ala Lys Glu Val Thr Arg Tyr Ser Val Ala Leu Ala Trp Leu Glu Pro
450 455 460

Asp Arg Pro Asn Gly Val Ile Leu Glu Tyr Glu Val Lys Tyr Tyr Glu
465 470 475 480

Lys Asp Gln Asn Glu Arg Ser Tyr Arg Ile Val Arg Thr Ala Ala Arg
485 490 495

Asn Thr Asp Ile Lys Gly Leu Asn Pro Leu Thr Ser Tyr Val Phe His
500 505 510

Val Arg Ala Arg Thr Ala Ala Gly Tyr Gly Asp Phe Ser Glu Pro Leu
515 520 525

Glu Val Thr Thr Asn Thr Val Pro Ser Arg Ile Ile Gly Asp Gly Ala
530 535 540

Asn Ser Thr Val Leu Leu Val Ser Val Ser Gly Ser Val Val Leu Val
545 550 555 560

Val Ile Leu Ile Ala Ala Phe Val Ile Ser Arg Arg Arg Ser Lys Tyr
565 570 575

Ser Lys Ala Lys Gln Glu Ala Asp Glu Glu Lys His Leu Asn Gln Gly
580 585 590

Val Arg Thr Tyr Val Asp Pro Phe Thr Tyr Glu Asp Pro Asn Gln Ala
595 600 605

Val Arg Glu Phe Ala Lys Glu Ile Asp Ala Ser Cys Ile Lys Ile Glu
610 615 620

Lys Val Ile Gly Val Gly Glu Phe Gly Glu Val Cys Ser Gly Arg Leu
625 630 635 640

ESAP1505F Sequence Listing

Lys Val Pro Gly Lys Arg Glu Ile Cys Val Ala Ile Lys Thr Leu Lys
645 650 655

Ala Gly Tyr Thr Asp Lys Gln Arg Arg Asp Phe Leu Ser Glu Ala Ser
660 665 670

Ile Met Gly Gln Phe Asp His Pro Asn Ile Ile His Leu Glu Gly Val
675 680 685

Val Thr Lys Cys Lys Pro Val Met Ile Ile Thr Glu Tyr Met Glu Asn
690 695 700

Gly Ser Leu Asp Ala Phe Leu Arg Lys Asn Asp Gly Arg Phe Thr Val
705 710 715 720

Ile Gln Leu Val Gly Met Leu Arg Gly Ile Gly Ser Gly Met Lys Tyr
725 730 735

Leu Ser Asp Met Ser Tyr Val His Arg Asp Leu Ala Ala Arg Asn Ile
740 745 750

Leu Val Asn Ser Asn Leu Val Cys Lys Val Ser Asp Phe Gly Met Ser
755 760 765

Arg Val Leu Glu Asp Asp Pro Glu Ala Ala Tyr Thr Thr Arg Gly Gly
770 775 780

Lys Ile Pro Ile Arg Trp Thr Ala Pro Glu Ala Ile Ala Tyr Arg Lys
785 790 795 800

Phe Thr Ser Ala Ser Asp Val Trp Ser Tyr Gly Ile Val Met Trp Glu
805 810 815

Val Met Ser Tyr Gly Glu Arg Pro Tyr Trp Asp Met Ser Asn Gln Asp
820 825 830

Val Ile Lys Ala Ile Glu Glu Gly Tyr Arg Leu Pro Pro Pro Met Asp
835 840 845

ESAP1505F Sequence Listing

Cys Pro Ile Ala Leu His Gln Leu Met Leu Asp Cys Trp Gln Lys Glu
850 855 860

Arg Ser Asp Arg Pro Lys Phe Gly Gln Ile Val Asn Met Leu Asp Lys
865 870 875 880

Leu Ile Arg Asn Pro Asn Ser Leu Lys Arg Thr Gly Thr Glu Ser Ser
885 890 895

Arg Pro Asn Thr Ala Leu Leu Asp Pro Ser Ser Pro Glu Phe Ser Ala
900 905 910

Val Val Ser Val Gly Asp Trp Leu Gln Ala Ile Lys Met Asp Arg Tyr
915 920 925

Lys Asp Asn Phe Thr Ala Ala Gly Tyr Thr Thr Leu Glu Ala Val Val
930 935 940

His Val Asn Gln Glu Asp Leu Ala Arg Ile Gly Ile Thr Ala Ile Thr
945 950 955 960

His Gln Asn Lys Ile Leu Ser Ser Val Gln Ala Met Arg Thr Gln Met
965 970 975

Gln Gln Met His Gly Arg Met Val Pro Val
980 985

<210> 45
<211> 528
<212> PRT
<213> Macaca mulatta

<400> 45

Val Thr Gly Ser Arg Val Tyr Pro Ala Asn Glu Val Thr Leu Leu Asp
1 5 10 15

Ser Arg Ser Val Gln Gly Glu Leu Gly Trp Ile Ala Ser Pro Leu Glu
20 25 30

Gly Gly Trp Glu Glu Val Ser Ile Met Asp Glu Lys Asn Thr Pro Ile

ESAP1505F Sequence Listing

35

40

45

Arg Thr Tyr Gln Val Cys Asn Val Met Glu Pro Ser Gln Asn Asn Trp
50 55 60

Leu Arg Thr Asp Trp Ile Thr Arg Glu Gly Ala Gln Arg Val Tyr Ile
65 70 75 80

Glu Ile Lys Phe Thr Leu Arg Asp Cys Asn Ser Leu Pro Gly Val Met
85 90 95

Gly Thr Cys Lys Glu Thr Phe Asn Leu Tyr Tyr Tyr Glu Ser Asp Asn
100 105 110

Asp Lys Glu Arg Phe Ile Arg Glu Asn Gln Phe Val Lys Ile Asp Thr
115 120 125

Ile Ala Ala Asp Glu Ser Phe Thr Gln Val Asp Ile Gly Asp Arg Ile
130 135 140

Met Lys Leu Asn Thr Glu Ile Arg Asp Val Gly Pro Leu Ser Lys Lys
145 150 155 160

Gly Phe Tyr Leu Ala Phe Gln Asp Val Gly Ala Cys Ile Ala Leu Val
165 170 175

Ser Val Arg Val Phe Tyr Lys Lys Cys Pro Leu Thr Val Arg Asn Leu
180 185 190

Ala Gln Phe Pro Asp Thr Ile Thr Gly Ala Asp Thr Ser Ser Leu Val
195 200 205

Glu Val Arg Gly Ser Cys Val Asn Asn Ser Glu Glu Lys Asp Val Pro
210 215 220

Lys Met Tyr Cys Gly Ala Asp Gly Glu Trp Leu Val Pro Ile Gly Asn
225 230 235 240

Cys Leu Cys Asn Ala Gly His Glu Glu Arg Ser Gly Glu Cys Gln Ala

ESAP1505F Sequence Listing

245

250

255

Cys Lys Ile Gly Tyr Tyr Lys Ala Leu Ser Thr Asp Ala Thr Cys Ala
260 265 270

Lys Cys Pro Pro His Ser Tyr Ser Val Trp Glu Gly Ala Thr Ser Cys
275 280 285

Thr Cys Asp Arg Gly Phe Phe Arg Ala Asp Asn Asp Ala Ala Ser Met
290 295 300

Pro Cys Thr Arg Pro Pro Ser Ala Pro Leu Asn Leu Ile Ser Asn Val
305 310 315 320

Asn Glu Thr Ser Val Asn Leu Glu Trp Ser Ser Pro Gln Asn Thr Gly
325 330 335

Gly Arg Gln Asp Ile Ser Tyr Asn Val Val Cys Lys Lys Cys Gly Ala
340 345 350

Gly Asp Pro Ser Lys Cys Arg Pro Cys Gly Ser Gly Val His Tyr Thr
355 360 365

Pro Gln Gln Asn Gly Leu Lys Thr Thr Lys Val Ser Ile Thr Asp Leu
370 375 380

Leu Ala His Thr Asn Tyr Thr Phe Glu Ile Trp Ala Val Asn Gly Val
385 390 395 400

Ser Lys Tyr Asn Pro Ser Pro Asp Gln Ser Val Ser Val Thr Val Thr
405 410 415

Thr Asn Gln Ala Ala Pro Ser Ser Ile Ala Leu Val Gln Ala Lys Glu
420 425 430

Val Thr Arg Tyr Ser Val Ala Leu Ala Trp Leu Glu Pro Asp Arg Pro
435 440 445

Asn Gly Val Ile Leu Glu Tyr Glu Val Lys Tyr Tyr Glu Lys Asp Gln

ESAP1505F Sequence Listing

450

455

460

Asn Glu Arg Ser Tyr Arg Ile Val Arg Thr Ala Ala Arg Asn Thr Asp
465 470 475 480

Ile Lys Gly Leu Asn Pro Leu Thr Ser Tyr Val Phe His Val Arg Ala
485 490 495

Arg Thr Ala Ala Gly Tyr Gly Asp Phe Ser Glu Pro Leu Glu Val Thr
500 505 510

Thr Asn Thr Val Pro Ser Arg Ile Ile Gly Asp Gly Ala Asn Ser Thr
515 520 525

<210> 46
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Primer

<400> 46
catcagccct aatccatctg a 21

<210> 47
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Primer

<400> 47
cgcgactaac aatcaaagtg a 21

<210> 48
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Primer

<400> 48

ESAP1505F Sequence Listing

ctaggccaca gaattgaaag atct 24

<210> 49
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Primer

<400> 49
gtaggtggaa attctagcat catcc 25

<210> 50
<211> 96
<212> PRT
<213> Artificial Sequence

<220>
<223> artificial sequence

<400> 50

Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
1 5 10 15

Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Gly Ile Ser Asn Ser
20 25 30

Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Leu
35 40 45

Tyr Ala Ala Ser Arg Leu Glu Ser Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

Ser Gly Ser Gly Thr Asp Tyr Thr Leu Thr Ile Ser Ser Leu Gln Pro
65 70 75 80

Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Tyr Tyr Ser Thr Pro Pro
85 90 95

<210> 51
<211> 96
<212> PRT

ESAP1505F Sequence Listing

<213> Artificial Sequence

<220>

<223> artificial sequence

<400> 51

Glu Ile Val Met Thr Gln Ser Pro Ala Thr Leu Ser Val Ser Pro Gly
1 5 10 15

Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Asn
20 25 30

Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile
35 40 45

Tyr Gly Ala Ser Thr Arg Ala Thr Gly Ile Pro Ala Arg Phe Ser Gly
50 55 60

Ser Gly Ser Gly Thr Glu Phe Thr Leu Thr Ile Ser Ser Leu Gln Ser
65 70 75 80

Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln Tyr Asn Asn Trp Pro Pro
85 90 95

<210> 52

<211> 12

<212> PRT

<213> Artificial Sequence

<220>

<223> artificial sequence

<400> 52

Trp Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys
1 5 10

<210> 53

<211> 98

<212> PRT

<213> Artificial Sequence

<220>

<223> artificial sequence

ESAP1505F Sequence Listing

<400> 53

Gln Val Gln Leu Val Gln Ser Gly Ser Glu Leu Lys Lys Pro Gly Ala
1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr
20 25 30

Ala Met Asn Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
35 40 45

Gly Trp Ile Asn Thr Asn Thr Gly Asn Pro Thr Tyr Ala Gln Gly Phe
50 55 60

Thr Gly Arg Phe Val Phe Ser Leu Asp Thr Ser Val Ser Thr Ala Tyr
65 70 75 80

Leu Gln Ile Ser Ser Leu Lys Ala Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Arg

<210> 54

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> artificial sequence

<400> 54

Tyr Tyr Tyr Tyr Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val
1 5 10 15

Thr Val Ser Ser
20

<210> 55

<211> 19

<212> PRT

ESAP1505F Sequence Listing

<213> Artificial Sequence

<220>

<223> artificial sequence

<400> 55

Met	Glu	Trp	Ser	Trp	Val	Phe	Leu	Phe	Phe	Leu	Ser	Val	Thr	Thr	Gly
1				5				10					15		

Val His Ser

<210> 56

<211> 57

<212> DNA

<213> Artificial Sequence

<220>

<223> artificial sequence

<400> 56

atggaatggg catgggtctt tctgttcttt ctgtcagtca caaccggggg ccacagt 57

<210> 57

<211> 57

<212> DNA

<213> Artificial Sequence

<220>

<223> artificial sequence

<400> 57

atggaatggg cttgggtctt tctgttcttt ctgtccgtca ctaccggggg ccactca 57

<210> 58

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> artificial sequence

<400> 58

Met	Ser	Val	Pro	Thr	Gln	Val	Leu	Gly	Leu	Leu	Leu	Leu	Trp	Leu	Thr
1				5				10					15		

ESAP1505F Sequence Listing

Asp Ala Arg Cys
20

<210> 59
<211> 60
<212> DNA
<213> Artificial Sequence

<220>
<223> artificial sequence

<400> 59
atgtccgtgc ctactcaggt gctggggctg ctgctgctgt ggctgaccga cgctagatgt 60

<210> 60
<211> 328
<212> PRT
<213> Artificial Sequence

<220>
<223> artificial sequence

<400> 60

Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Ser Ser Lys
1 5 10 15

Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr
20 25 30

Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser
35 40 45

Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser
50 55 60

Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr Gln Thr
65 70 75 80

Tyr Ile Cys Asn Val Asn His Lys Pro Ser Asn Thr Lys Val Asp Lys
85 90 95

Arg Val Glu Pro Lys Ser Cys Asp Lys Thr His Thr Cys Pro Pro Cys

ESAP1505F Sequence Listing

100

105

110

Pro Ala Pro Pro Ala Ala Ala Pro Ser Val Phe Leu Phe Pro Pro Lys
115 120 125

Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val
130 135 140

Val Val Asp Val Ser His Glu Asp Pro Glu Val Gln Phe Asn Trp Tyr
145 150 155 160

Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu
165 170 175

Gln Phe Asn Ser Thr Phe Arg Val Val Ser Val Leu Thr Val Val His
180 185 190

Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys
195 200 205

Gly Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Thr Lys Gly Gln
210 215 220

Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met
225 230 235 240

Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro
245 250 255

Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn
260 265 270

Tyr Lys Thr Thr Pro Pro Met Leu Asp Ser Asp Gly Ser Phe Phe Leu
275 280 285

Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val
290 295 300

Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln

305 310 315 320

<210> 62

ESAP1505F Sequence Listing

<211> 325
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> artificial sequence

<400> 62

Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Ser Ser Arg
 1 5 10 15

Ser Thr Ser Glu Ser Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr
 20 25 30

Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser
 35 40 45

Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser
 50 55 60

Leu Ser Ser Val Val Thr Val Pro Ser Ser Asn Phe Gly Thr Gln Thr
 65 70 75 80

Tyr Thr Cys Asn Val Asp His Lys Pro Ser Asn Thr Lys Val Asp Lys
 85 90 95

Thr Val Glu Arg Lys Ser Cys Val Glu Cys Pro Pro Cys Pro Ala Pro
 100 105 110

Pro Ala Ala Ala Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp
 115 120 125

Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp
 130 135 140

Val Ser His Glu Asp Pro Glu Val Gln Phe Asn Trp Tyr Val Asp Gly
 145 150 155 160

Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Phe Asn
 165 170 175

ESAP1505F Sequence Listing

Ser Thr Phe Arg Val Val Ser Val Leu Thr Val Val His Gln Asp Trp
180 185 190

Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Gly Leu Pro
195 200 205

Ala Pro Ile Glu Lys Thr Ile Ser Lys Thr Lys Gly Gln Pro Arg Glu
210 215 220

Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn
225 230 235 240

Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile
245 250 255

Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr
260 265 270

Thr Pro Pro Met Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys
275 280 285

Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys
290 295 300

Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu
305 310 315 320

Ser Leu Ser Pro Gly
325

<210> 63
<211> 975
<212> DNA
<213> Artificial Sequence

<220>
<223> artificial sequence

<400> 63
gctagcaca aagggcccctc tgtcttcct ctggctcct cctcccgtc cacctccgag

60

ESAP1505F Sequence Listing

tccactgccg ctctgggctg tctgggtcaag gattacttcc ctgagccagt cactgtgagt	120
tggaactcag gcgccctgac cagcggagtc cacacatttc ccgctgtgct gcagagctcc	180
ggcctgtact ccctgtctag tgtgggtcacc gtgccttcaa gcaatttcgg gactcagacc	240
tatacatgca acgtggacca taagccatct aatactaagg tcgataaaac cgtggagcga	300
aaatcctgcg tggaatgccc acctgttcct gtcaccag ccgctgcacc aagcgtgttc	360
ctgtttcctc caaagcccaa agacacactg atgatcagca gaactcctga ggtcacctgc	420
gtggtcgtgg acgtgtccca cgaggatccc gaagtccagt ttaactggta cgtggatggg	480
gtcgaagtgc ataatgcaaa gactaaacct cgggaggaac agttcaactc tacctttaga	540
gtcgtgagtg tgctgacagt cgtgcaccag gactggctga acggaaagga gtataagtgc	600
aaagtgtcta ataagggcct gcccggcccct atcgagaaaa caattagtaa gactaaaggc	660
cagccaaggg aaccccaggt gtacacactg cccctagtc gcgaggaaat gacaaagaac	720
caggctctac tgacttgtct ggtgaaaggg ttctatccat ccgacattgc cgtggagtgg	780
gaatctaata gacagcccga aaacaattac aagaccacac caccatgct ggacagcgat	840
ggatccttct ttctgtattc aaagctgacc gtggataaaa gccggtggca gcagggaat	900
gtcttttcct gctctgtgat gcacgaagcc ctgcacaacc actacactca gaagtccttg	960
tccctgtctc ctggc	975

<210> 64
 <211> 107
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> artificial sequence

<400> 64

Arg	Thr	Val	Ala	Ala	Pro	Ser	Val	Phe	Ile	Phe	Pro	Pro	Ser	Asp	Glu
1				5					10					15	

Gln	Leu	Lys	Ser	Gly	Thr	Ala	Ser	Val	Val	Cys	Leu	Leu	Asn	Asn	Phe
			20					25					30		

Tyr	Pro	Arg	Glu	Ala	Lys	Val	Gln	Trp	Lys	Val	Asp	Asn	Ala	Leu	Gln
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

ESAP1505F Sequence Listing

35

40

45

Ser Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser
50 55 60

Thr Tyr Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu
65 70 75 80

Lys His Lys Val Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser
85 90 95

Pro Val Thr Lys Ser Phe Asn Arg Gly Glu Cys
100 105

<210> 65
<211> 321
<212> DNA
<213> Artificial Sequence

<220>
<223> artificial sequence

<400> 65
cgtagcgtcg ccgccccctc cgtgtttatt tttcctccat ctgacgaaca gctgaagagt 60
gggaccgcct ccgtggtgtg cctgctgaac aatttctacc cccgggaggc caaggtgcag 120
tggaaagtcg acaacgctct gcagtctggc aatagtcagg agtcagtgac tgaacaggac 180
agcaaggatt ccacctattc tctgagctcc accctgacac tgagcaaagc agattacgaa 240
aagcaciaag tctatgcctg cgaagtgacc caccaggggc tgagcagtc agtgaccaag 300
tcctttaaca ggggagagtg t 321

<210> 66
<211> 124
<212> PRT
<213> Artificial Sequence

<220>
<223> artificial sequence

<400> 66

Gln Val Gln Leu Val Gln Ser Gly Ser Glu Leu Lys Lys Pro Gly Ala

ESAP1505F Sequence Listing

1	5	10	15
Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asp Tyr	20	25	30
Ser Met His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met	35	40	45
Gly Trp Ile Asn Thr Glu Thr Gly Glu Pro Thr Tyr Ala Gln Gly Phe	50	55	60
Thr Gly Arg Phe Val Phe Ser Leu Asp Thr Ser Val Ser Thr Ala Tyr	65	70	75
Leu Gln Ile Ser Ser Leu Lys Ala Glu Asp Thr Ala Val Tyr Tyr Cys	85	90	95
Ala Arg Ile Pro Leu Tyr Tyr Tyr Gly Ser Arg Tyr Trp Tyr Phe Asp	100	105	110
Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser	115	120	

<210> 67
 <211> 372
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> artificial sequence

<400> 67	
caggtccagc tgggtccagtc agggagcgaa ctgaagaaac caggcgcatac agtgaaggctc	60
agctgcaaag cctccgggta taccttcaca gactactcta tgcactgggt gcggcaggct	120
ccaggacagg gactggagtg gatgggggtgg atcaacactg agaccggaga acctacctat	180
gctcagggct tcaccggcag attcgtgttt agcctggaca catctgtcag tactgcatac	240
ctgcagatca gctccctgaa ggccgaagat accgctgtct actattgtgc caggattccc	300
ctgtactatt acgggagcag gtattggtat tttgatgtct gggggcaggg aacaaccgtc	360

actgtcagca gc

<210> 68
 <211> 124
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> artificial sequence

<400> 68

Gln Val Gln Leu Val Gln Ser Gly Ser Glu Leu Lys Lys Pro Gly Ala
 1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asp Tyr
 20 25 30

Ser Met His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Lys Trp Met
 35 40 45

Gly Trp Ile Asn Thr Glu Thr Gly Glu Pro Thr Tyr Ala Gln Gly Phe
 50 55 60

Thr Gly Arg Phe Val Phe Ser Leu Asp Thr Ser Val Ser Thr Ala Tyr
 65 70 75 80

Leu Gln Ile Ser Ser Leu Lys Ala Glu Asp Thr Ala Val Tyr Tyr Cys
 85 90 95

Ala Arg Ile Pro Leu Tyr Tyr Tyr Gly Ser Arg Tyr Trp Tyr Phe Asp
 100 105 110

Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
 115 120

<210> 69
 <211> 372
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> artificial sequence

ESAP1505F Sequence Listing

<400> 69
caggtccagc tggtccagtc agggagcgaa ctgaagaaac caggcgcatc agtgaaggtc 60
agctgcaaag cctccgggta taccttcaca gactactcta tgcactgggt gcggcaggct 120
ccaggacagg gactgaagtg gatgggggtg atcaacactg agaccggaga acctacctat 180
gctcagggct tcaccggcag attcgtgttt agcctggaca catctgtcag tactgcatac 240
ctgcagatca gtccttgaa ggccgaagat accgctgtct actattgtgc caggattccc 300
ctgtactatt acgggagcag gtattggtat tttgatgtct gggggcaggg aacaaccgtc 360
actgtcagca gc 372

<210> 70
<211> 124
<212> PRT
<213> Artificial Sequence

<220>
<223> artificial sequence

<400> 70

Gln Ile Gln Leu Val Gln Ser Gly Ser Glu Leu Lys Lys Pro Gly Ala
1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asp Tyr
20 25 30

Ser Met His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Lys Trp Met
35 40 45

Gly Trp Ile Asn Thr Glu Thr Gly Glu Pro Thr Tyr Ala Gln Gly Phe
50 55 60

Thr Gly Arg Phe Val Phe Ser Leu Asp Thr Ser Val Ser Thr Ala Tyr
65 70 75 80

Leu Gln Ile Ser Ser Leu Lys Ala Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Ile Pro Leu Tyr Tyr Tyr Gly Ser Arg Tyr Trp Tyr Phe Asp

ESAP1505F Sequence Listing

100

105

110

Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
115 120

<210> 71
<211> 372
<212> DNA
<213> Artificial Sequence

<220>
<223> artificial sequence

<400> 71
cagatccagc tgggtccagtc agggagcgaa ctgaagaaac caggcgcatc agtgaaggct 60
agctgcaaag cctccgggta taccttcaca gactactcta tgcactgggt gcggcaggct 120
ccaggacagg gactgaagtg gatgggggtgg atcaacactg agaccggaga acctacctat 180
gctcagggtc tcaccggcag attcgtgttt agcctggaca catctgtcag tactgcatac 240
ctgcagatca gtccttgaa ggccgaagat accgctgtct actattgtgc caggattccc 300
ctgtactatt acgggagcag gtattggtat tttgatgtct gggggcaggg aacaaccgtc 360
actgtcagca gc 372

<210> 72
<211> 124
<212> PRT
<213> Artificial Sequence

<220>
<223> artificial sequence

<400> 72

Gln Val Gln Leu Val Gln Ser Gly Ser Glu Leu Lys Lys Pro Gly Ala
1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asp Tyr
20 25 30

Ser Met His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
35 40 45

ESAP1505F Sequence Listing

Gly Trp Ile Asn Thr Glu Thr Gly Glu Pro Thr Tyr Ala Asp Asp Phe
50 55 60

Lys Gly Arg Phe Val Phe Ser Leu Asp Thr Ser Val Ser Thr Ala Tyr
65 70 75 80

Leu Gln Ile Ser Ser Leu Lys Ala Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Ile Pro Leu Tyr Tyr Tyr Gly Ser Arg Tyr Trp Tyr Phe Asp
100 105 110

Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
115 120

<210> 73
<211> 372
<212> DNA
<213> Artificial Sequence

<220>
<223> artificial sequence

<400> 73
caggtgcagc tggtgcagtc tgggagcgaa ctgaagaaac caggggcatc agtgaaggtc 60
agctgcaaag cctccggata taccttcaca gactactcta tgcactgggt gcggcaggct 120
ccaggacagg gactggagtg gatgggatgg atcaacactg agaccggcga acctacctat 180
gctgacgatt ttaagggcag attcgtgttt agcctggaca catctgtcag tactgcatac 240
ctgcagatca gctccctgaa agccgaagat acagctgtct actattgtgc caggattccc 300
ctgtactatt acggaagcag gtattggtat tttgatgtct gggggcaggg aacaactgtg 360
actgtgtcct cc 372

<210> 74
<211> 124
<212> PRT
<213> Artificial Sequence

<220>
<223> artificial sequence

ESAP1505F Sequence Listing

<400> 74

Gln Val Gln Leu Val Gln Ser Gly Ser Glu Leu Lys Lys Pro Gly Ala
1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asp Tyr
20 25 30

Ser Met His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Lys Trp Met
35 40 45

Gly Trp Ile Asn Thr Glu Thr Gly Glu Pro Thr Tyr Ala Asp Asp Phe
50 55 60

Lys Gly Arg Phe Val Phe Ser Leu Asp Thr Ser Val Ser Thr Ala Tyr
65 70 75 80

Leu Gln Ile Ser Ser Leu Lys Ala Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Ile Pro Leu Tyr Tyr Tyr Gly Ser Arg Tyr Trp Tyr Phe Asp
100 105 110

Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
115 120

<210> 75

<211> 372

<212> DNA

<213> Artificial Sequence

<220>

<223> artificial sequence

<400> 75

caggtgcagc tgggtgcagtc tgggagcgaa ctgaagaaac caggggcatc agtgaaggtc 60

agctgcaaag cctccggata taccttcaca gactactcta tgcactgggt gcggcaggct 120

ccaggacagg gactgaagtg gatgggatgg atcaacactg agaccggcga acctacctat 180

gctgacgatt ttaagggcag attcgtgttt agcctggaca catctgtcag tactgcatac 240

ESAP1505F Sequence Listing

ctgcagatca gctccctgaa agccgaagat acagctgtct actattgtgc caggattccc 300
 ctgtactatt acggaagcag gtattggtat tttgatgtct gggggcaggg aacaactgtg 360
 actgtgtcct cc 372

<210> 76
 <211> 124
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> artificial sequence

<400> 76

Gln Ile Gln Leu Val Gln Ser Gly Ser Glu Leu Lys Lys Pro Gly Ala
 1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asp Tyr
 20 25 30

Ser Met His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Lys Trp Met
 35 40 45

Gly Trp Ile Asn Thr Glu Thr Gly Glu Pro Thr Tyr Ala Asp Asp Phe
 50 55 60

Lys Gly Arg Phe Val Phe Ser Leu Asp Thr Ser Val Ser Thr Ala Tyr
 65 70 75 80

Leu Gln Ile Ser Ser Leu Lys Ala Glu Asp Thr Ala Val Tyr Tyr Cys
 85 90 95

Ala Arg Ile Pro Leu Tyr Tyr Tyr Gly Ser Arg Tyr Trp Tyr Phe Asp
 100 105 110

Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
 115 120

<210> 77
 <211> 372
 <212> DNA

<213> Artificial Sequence

 $\langle 220 \rangle$

<223> artificial sequence

<400> 77

cagatccagc	tggtgcagtc	tgggagcgaa	ctgaagaaac	caggggcatc	agtgaaggtc	60
agctgcaaag	cctccggata	taccttcaca	gactactcta	tgcactgggt	gcggcaggct	120
ccaggacagg	gactgaagtg	gatgggatgg	atcaacactg	agaccggcga	acctacctat	180
gctgacgatt	ttaagggcag	attcgtgttt	agcctggaca	catctgtcag	tactgcatac	240
ctgcagatca	gctccctgaa	agccgaagat	acagctgtct	actattgtgc	caggattccc	300
ctgtactatt	acggaagcag	gtattggtat	tttgatgtct	gggggcaggg	aacaactgtg	360
actgtgtcct	cc					372

<210> 78

<211> 107

<212> PRT

<213> Artificial Sequence

 $\langle 220 \rangle$

<223> artificial sequence

<400> 78

Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
1 5 10 15

Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Glu Asn Ile Tyr Arg Asn
20 25 30

Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Val
35 40 45

Tyr Ala Ala Thr Asn Leu Ala Asp Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

Ser Gly Ser Gly Thr Asp Tyr Thr Leu Thr Ile Ser Ser Leu Gln Pro
65 70 75 80

Glu Asp Phe Ala Thr Tyr Tyr Cys Gln His Phe Trp Gly Thr Pro Trp

ESAP1505F Sequence Listing

85

90

95

Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys
100 105

<210> 79
<211> 321
<212> DNA
<213> Artificial Sequence

<220>
<223> artificial sequence

<400> 79
gatatccaga tgaccagtc tccttcctct ctgagtgctt cagtgggcga ccgggtcacc 60
atcacatgca gagcaagcga gaacatctac aggaatctgg cctggtatca gcagaagccc 120
ggcaaagctc ctaagctgct ggtgtacgcc gctaccaacc tggcagatgg agtgccaagc 180
cggttcagcg gatccggatc tggaacagac tatactctga ccatcagctc cctgcagccc 240
gaagattttg ccacttacta ttgtcagcat ttctggggca caccttggac cttcgggcag 300
ggaactaaag tggagattaa g 321

<210> 80
<211> 107
<212> PRT
<213> Artificial Sequence

<220>
<223> artificial sequence

<400> 80

Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
1 5 10 15

Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Glu Asn Ile Tyr Arg Asn
20 25 30

Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Leu
35 40 45

Tyr Ala Ala Thr Asn Leu Ala Asp Gly Val Pro Ser Arg Phe Ser Gly

ESAP1505F Sequence Listing

50

55

60

Ser Gly Ser Gly Thr Asp Tyr Thr Leu Thr Ile Ser Ser Leu Gln Ser
65 70 75 80

Glu Asp Phe Ala Thr Tyr Tyr Cys Gln His Phe Trp Gly Thr Pro Trp
85 90 95

Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys
100 105

<210> 81
<211> 321
<212> DNA
<213> Artificial Sequence

<220>
<223> artificial sequence

<400> 81
gatatccaga tgaccagtc tccttcctct ctgagtgcctt cagtgggcga ccgggtcacc 60
atcacatgca gagcaagcga gaacatctac aggaatctgg cctggtatca gcagaagccc 120
ggcaaagctc ctaagctgct gctgtacgcc gctaccaacc tggcagatgg agtgccaagc 180
cggttcagcg gatccggatc tggaacagac tatactctga ccatcagctc cctgcagtcc 240
gaagattttg ccacttacta ttgtcagcat ttctggggca caccttggac cttcgggcag 300
ggaactaaag tggagattaa g 321

<210> 82
<211> 107
<212> PRT
<213> Artificial Sequence

<220>
<223> artificial sequence

<400> 82

Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
1 5 10 15

Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Glu Asn Ile Tyr Arg Asn

ESAP1505F Sequence Listing

20 25 30

Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Gln Leu Leu Leu
35 40 45

Tyr Ala Ala Thr Asn Leu Ala Asp Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

Ser Gly Ser Gly Thr Asp Tyr Thr Leu Thr Ile Ser Ser Leu Gln Pro
65 70 75 80

Glu Asp Phe Ala Thr Tyr Tyr Cys Gln His Phe Trp Gly Thr Pro Trp
85 90 95

Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys
100 105

<210> 83
<211> 321
<212> DNA
<213> Artificial Sequence

<220>
<223> artificial sequence

<400> 83
gatatccaga tgaccagtc tccttcctct ctgagtgctt cagtgggcga ccgggtcacc 60
atcacatgca gagcaagcga gaacatctac aggaatctgg cctggtatca gcagaagccc 120
ggcaaagctc ctcaactgct gctgtacgcc gctaccaacc tggcagatgg agtgccaagc 180
cggttcagcg gatccggatc tggaacagac tatactctga ccatcagctc cctgcagccc 240
gaagattttg ccacttacta ttgtcagcat ttctggggca caccttggac cttcgggcag 300
ggaactaaag tggagattaa g 321

<210> 84
<211> 107
<212> PRT
<213> Artificial Sequence

<220>
<223> artificial sequence

ESAP1505F Sequence Listing

<400> 84

Glu Ile Val Met Thr Gln Ser Pro Ala Thr Leu Ser Val Ser Pro Gly
1 5 10 15

Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Glu Asn Ile Tyr Arg Asn
20 25 30

Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ser Pro Arg Leu Leu Ile
35 40 45

Tyr Ala Ala Thr Asn Leu Ala Asp Gly Ile Pro Ala Arg Phe Ser Gly
50 55 60

Ser Gly Ser Gly Thr Glu Tyr Thr Leu Thr Ile Ser Ser Leu Gln Ser
65 70 75 80

Glu Asp Phe Ala Val Tyr Tyr Cys Gln His Phe Trp Gly Thr Pro Trp
85 90 95

Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys
100 105

<210> 85

<211> 321

<212> DNA

<213> Artificial Sequence

<220>

<223> artificial sequence

<400> 85

gaaatcgtga tgaccagtc tcccgccact ctgtctgtga gtccaggcga gcgggctacc 60
ctgtcttgca gagcaagcga aaacatctac aggaatctgg cctggtatca gcagaagcca 120
ggacagtctc ctcgactgct gatctacgcc gctacaaacc tggcagacgg gattcccgcga 180
cgattctcag gaagcggatc cggaaccgag tataccctga caattagctc cctgcagagc 240
gaagatttcg ccgtctacta ttgtcagcat ttctggggaa caccttggac attcgggcag 300
ggaactaaaag tggagattaa g 321

ESAP1505F Sequence Listing