

SEQUENCE LISTING

<110> Navigo Proteins GmbH

<120> Alkaline stable Immunoglobulin-binding proteins

<130> SP32 WO

<160> 55

<170> PatentIn version 3.5

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<211> 58

<212> PRT

<213> Artificial Sequence

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<223> may be replaced by K

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Leu	His	Leu	Pro	Asn	Leu	Thr	Glu	Asp	Gln	Arg	Asn	Ala	Phe	Ile	Gln
			20					25					30		

Ser	Leu	Lys	Asp	Asp	Pro	Ser	Val	Ser	Lys	Glu	Ile	Leu	Gly	Glu	Ala
		35					40					45			

Lys	Lys	Leu	Asn	Asp	Ala	Gln	Ala	Pro	Pro
	50					55			

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Ala Ala Ala Lys His Asp Lys Asp Gln Gln Ser Ala Phe Tyr Glu Ile
1 5 10 15

Leu His Leu Pro Asn Leu Thr Glu Asp Gln Arg Asn Ala Phe Ile Gln
20 25 30

Ser Leu Lys Asp Asp Pro Ser Val Ser Lys Glu Ile Leu Gly Glu Ala
35 40 45

Lys Lys Leu Asn Asp Ala Gln Ala Pro Pro
50 55

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<223> parental protein IB14 1A/28N (IB14a)

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Ala Ala Ala Lys His Asp Lys Asp Gln Gln Ser Ala Phe Tyr Glu Ile
1 5 10 15

Leu His Leu Pro Asn Leu Thr Glu Asp Gln Arg Asn Ala Phe Ile Gln
20 25 30

Ser Leu Lys Asp Asp Pro Ser Val Ser Lys Glu Ile Leu Gly Glu Ala
35 40 45

Lys Lys Leu Asn Asp Ala Gln Ala Pro Pro
50 55

<210> 4

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<223> parental protein IB27 1A

<400> 4

Ala Ala Ala Lys Phe Asp Glu Ala Gln Gln Ser Ala Phe Tyr Glu Ile
1 5 10 15

Leu His Leu Pro Asn Leu Thr Glu Glu Gln Arg Asn Ala Phe Ile Gln
20 25 30

Ser Leu Lys Asp Asp Pro Ser Val Ser Lys Glu Val Leu Gly Glu Ala
35 40 45

Gln Lys Leu Asn Asp Ser Gln Ala Pro Lys
50 55

<210> 5

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<400> 5

Ala Asp Asn Lys Phe Asn Lys Glu Gln Gln Asn Ala Phe Tyr Glu Ile
1 5 10 15

Leu His Leu Pro Asn Leu Thr Glu Glu Gln Arg Asn Gly Phe Ile Gln
20 25 30

Ser Leu Lys Asp Asp Pro Ser Val Ser Lys Glu Ile Leu Ala Glu Ala
35 40 45

Lys Lys Leu Asn Asp Ala Gln Ala Pro Lys
50 55

<210> 6

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<223> domain B

<400> 6

Ala Asp Asn Lys Phe Asn Lys Glu Gln Gln Asn Ala Phe Tyr Glu Ile
1 5 10 15

Leu His Leu Pro Asn Leu Asn Glu Glu Gln Arg Asn Gly Phe Ile Gln
20 25 30

Ser Leu Lys Asp Asp Pro Ser Gln Ser Ala Asn Leu Leu Ala Glu Ala
35 40 45

Lys Lys Leu Asn Asp Ala Gln Ala Pro Lys
50 55

<210> 7
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<223> domain Z

<400> 7

Val Asp Asn Lys Phe Asn Lys Glu Gln Gln Asn Ala Phe Tyr Glu Ile
1 5 10 15

Leu His Leu Pro Asn Leu Asn Glu Glu Gln Arg Asn Ala Phe Ile Gln
20 25 30

Ser Leu Lys Asp Asp Pro Ser Gln Ser Ala Asn Leu Leu Ala Glu Ala
35 40 45

Lys Lys Leu Asn Asp Ala Gln Ala Pro Lys
50 55

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<400> 8

Val Asp Ala Lys Phe Asp Lys Glu Gln Gln Asn Ala Phe Tyr Glu Ile
1 5 10 15

Leu His Leu Pro Asn Leu Thr Glu Glu Gln Arg Asn Ala Phe Ile Gln
20 25 30

Ser Leu Lys Asp Asp Pro Ser Gln Ser Ala Asn Leu Leu Ala Glu Ala
35 40 45

Lys Lys Leu Asn Asp Ala Gln Ala Pro Lys
50 55

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<223> IB14 1I

<400> 9

Ile Ala Ala Lys His Asp Lys Asp Gln Gln Ser Ala Phe Tyr Glu Ile
1 5 10 15

Leu His Leu Pro Asn Leu Thr Glu Asp Gln Arg Ser Ala Phe Ile Gln
20 25 30

Ser Leu Lys Asp Asp Pro Ser Val Ser Lys Glu Ile Leu Gly Glu Ala
35 40 45

Lys Lys Leu Asn Asp Ala Gln Ala Pro Pro

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Ala Ala Ala Lys His Asp Lys Asp Gln Gln Ser Ala Phe Tyr Glu Ile
1 5 10 15

Leu His Leu Pro Asn Leu Thr Glu Asp Gln Arg Ser Ala Phe Ile Gln
20 25 30

Ser Leu Lys Asp Asp Pro Ser Val Ser Lys Glu Ile Leu Gly Glu Ala
35 40 45

Lys Lys Leu Asn Asp Ala Gln Ala Pro Pro
50 55

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Pro Ala Ala Lys His Asp Lys Asp Gln Gln Ala Ala Phe Tyr Glu Ile
1 5 10 15

Leu His Leu Pro Asn Leu Thr Glu Asp Gln Arg Ser Ala Phe Ile Gln
20 25 30

Ser Leu Lys Asp Asp Pro Ser Val Ser Lys Glu Ile Leu Gly Glu Ala
35 40 45

Lys Lys Leu Asn Asp Ala Gln Ala Pro Pro
50 55

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Pro Ala Ala Lys His Asp Lys Asp Gln Gln Glu Ala Phe Tyr Glu Ile
1 5 10 15

Leu His Leu Pro Asn Leu Thr Glu Asp Gln Arg Ser Ala Phe Ile Gln
20 25 30

Ser Leu Lys Asp Asp Pro Ser Val Ser Lys Glu Ile Leu Gly Glu Ala
35 40 45

Lys Lys Leu Asn Asp Ala Gln Ala Pro Pro
50 55

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<220>
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<400> 13

Pro Ala Ala Lys His Asp Lys Asp Gln Gln Ile Ala Phe Tyr Glu Ile
1 5 10 15

Leu His Leu Pro Asn Leu Thr Glu Asp Gln Arg Ser Ala Phe Ile Gln
20 25 30

Ser Leu Lys Asp Asp Pro Ser Val Ser Lys Glu Ile Leu Gly Glu Ala

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Lys Lys Leu Asn Asp Ala Gln Ala Pro Pro
 50 55

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Pro Ala Ala Lys His Asp Lys Asp Gln Gln Ser Ala Phe Tyr Glu Ile
 1 5 10 15

Leu His Leu Pro Asn Leu Thr Glu Asp Gln Arg Ser Ala Phe Ile Gln
 20 25 30

Ser Leu Lys Asp Asp Pro Ser Val Ser Lys Glu Ile Leu Gly Glu Ala
 35 40 45

Lys Lys Leu Asn Asp Ala Gln Ala Pro Pro
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Pro Ala Ala Lys His Asp Lys Asp Gln Gln Ser Ala Phe Tyr Glu Ile
 1 5 10 15

Leu His Leu Pro Asn Leu Thr Glu Asp Gln Arg Ser Ala Phe Ile Gln
 20 25 30

Ser Leu Arg Asp Asp Pro Ser Val Ser Lys Glu Ile Leu Gly Glu Ala
35 40 45

Lys Lys Leu Asn Asp Ala Gln Ala Pro Pro
50 55

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Pro Ala Ala Lys His Asp Lys Asp Gln Gln Ser Ala Phe Tyr Glu Ile
1 5 10 15

Leu His Leu Pro Asn Leu Thr Glu Asp Gln Arg Ser Ala Phe Ile Gln
20 25 30

Ser Leu Ile Asp Asp Pro Ser Val Ser Lys Glu Ile Leu Gly Glu Ala
35 40 45

Lys Lys Leu Asn Asp Ala Gln Ala Pro Pro
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<400> 17

Pro Ala Ala Lys His Asp Lys Asp Gln Gln Ser Ala Phe Tyr Glu Ile
1 5 10 15

Leu His Leu Pro Asn Leu Thr Glu Asp Gln Arg Ser Ala Phe Ile Gln

20

25

30

Ser Leu Lys Asp Asp Pro Ser Val Ser Leu Glu Ile Leu Gly Glu Ala
35 40 45

Lys Lys Leu Asn Asp Ala Gln Ala Pro Pro
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<210> 18
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Ile Ala Ala Lys His Asp Lys Asp Gln Gln Ala Ala Phe Tyr Glu Ile
1 5 10 15

Leu His Leu Pro Asn Leu Thr Glu Asp Gln Arg Ser Ala Phe Ile Gln
20 25 30

Ser Leu Arg Asp Asp Pro Ser Val Ser Lys Glu Ile Leu Gly Glu Ala
35 40 45

Lys Lys Leu Asn Asp Ala Gln Ala Pro Pro
50 55

<210> 19
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Ile Ala Ala Lys His Asp Lys Asp Gln Gln Ala Ala Phe Tyr Glu Ile
1 5 10 15

Leu His Leu Pro Asn Leu Thr Glu Asp Gln Arg Ser Ala Phe Ile Gln
20 25 30

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

Lys Lys Leu Asn Asp Ala Gln Ala Pro Pro
50 55

<210> 20
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Ile Ala Ala Lys His Asp Lys Asp Gln Gln Ala Ala Phe Tyr Glu Ile
1 5 10 15

Leu His Leu Pro Asn Leu Thr Glu Asp Gln Arg Asn Ala Phe Ile Gln
20 25 30

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

Lys Lys Leu Asn Asp Ala Gln Ala Pro Pro
50 55

<210> 21
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Pro Ala Ala Lys His Asp Lys Asp Gln Gln Ser Ala Phe Tyr Glu Ile

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Leu His	Leu Pro Asn Leu Thr	Glu Asp Gln Arg Asn Ala	Phe Ile Gln
	20	25	30
Ser Leu	Lys Asp Asp Pro Ser Val	Ser Lys Glu Ile Leu Gly	Glu Ala
	35	40	45
Lys Lys	Leu Asn Asp Ala Gln Ala	Pro Pro	
	50	55	

<210> 22
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Asn Ala Ala Lys Phe Asp	Glu Ala Gln Gln Ser Ala Phe Tyr	Glu Ile
1	5	10 15

Leu His	Leu Pro Asn Leu Thr	Glu Glu Gln Arg Asn Ala	Phe Ile Gln
	20	25	30

Ser Leu	Lys Asp Asp Pro Ser Val	Ser Lys Glu Val Leu Gly	Glu Ala
	35	40	45

Gln Lys	Leu Asn Asp Ser Gln Ala	Pro Lys
	50	55

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Lys Phe Asp Glu Ala Gln Gln Ala Ala Phe Tyr Glu Ile Leu His Leu
1 5 10 15

Pro Asn Leu Thr Glu Glu Gln Arg Asn Ala Phe Ile Gln Ser Leu Arg
20 25 30

Asp Asp Pro Ser Val Ser Leu Glu Val Leu Gly Glu Ala Gln Lys Leu
35 40 45

Asn Asp Ser Gln Ala
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<400> 24

Ala Phe Asp Glu Ala Gln Gln Ala Ala Phe Tyr Glu Ile Leu His Leu
1 5 10 15

Pro Asn Leu Thr Glu Glu Gln Arg Asn Ala Phe Ile Gln Ser Leu Arg
20 25 30

Asp Asp Pro Ser Val Ser Leu Glu Val Leu Gly Glu Ala Gln Lys Leu
35 40 45

Asn Asp Ser Gln Ala Pro Lys
50 55

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Ala Ala Ala Lys His Asp Lys Asp Gln Gln Ser Ala Phe Tyr Glu Ile
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Leu His Leu Pro Asn Leu Thr Glu Asp Gln Arg Asn Ala Phe Ile Gln
20 25 30

Ser Leu Lys Asp Asp Pro Ser Val Ser Lys Glu Ile Leu Ala Glu Ala
35 40 45

Lys Lys Leu Asn Asp Ala Gln Ala Pro Lys
50 55

<210> 26

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Ile Ala Ala Lys His Asp Lys Asp Gln Gln Ala Ala Phe Tyr Glu Ile
1 5 10 15

Leu His Leu Pro Asn Leu Thr Glu Asp Gln Arg Asn Ala Phe Ile Gln
20 25 30

Ser Leu Arg Asp Asp Pro Ser Val Ser Leu Glu Ile Leu Ala Glu Ala
35 40 45

Lys Lys Leu Asn Asp Ala Gln Ala Pro Lys
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<400> 27

Lys Phe Asp Glu Ala Gln Gln Ala Ala Phe Tyr Glu Ile Leu His Leu
1 5 10 15

Pro Asn Leu Thr Glu Glu Gln Arg Asn Ala Phe Ile Gln Ser Leu Arg
20 25 30

Asp Asp Pro Ser Val Ser Leu Glu Val Leu Gly Glu Ala Gln Lys Leu
35 40 45

Asn Asp Ser Gln Ala Lys Phe Asp Glu Ala Gln Gln Ala Ala Phe Tyr
50 55 60

Glu Ile Leu His Leu Pro Asn Leu Thr Glu Glu Gln Arg Asn Ala Phe
65 70 75 80

Ile Gln Ser Leu Arg Asp Asp Pro Ser Val Ser Leu Glu Val Leu Gly
85 90 95

Glu Ala Gln Lys Leu Asn Asp Ser Gln Ala Lys Phe Asp Glu Ala Gln
100 105 110

Gln Ala Ala Phe Tyr Glu Ile Leu His Leu Pro Asn Leu Thr Glu Glu
115 120 125

Gln Arg Asn Ala Phe Ile Gln Ser Leu Arg Asp Asp Pro Ser Val Ser
130 135 140

Leu Glu Val Leu Gly Glu Ala Gln Lys Leu Asn Asp Ser Gln Ala Lys
145 150 155 160

Phe Asp Glu Ala Gln Gln Ala Ala Phe Tyr Glu Ile Leu His Leu Pro
165 170 175

Asn Leu Thr Glu Glu Gln Arg Asn Ala Phe Ile Gln Ser Leu Arg Asp

180

185

190

Asp Pro Ser Val Ser Leu Glu Val Leu Gly Glu Ala Gln Lys Leu Asn
 195 200 205

Asp Ser Gln Ala Lys Phe Asp Glu Ala Gln Gln Ala Ala Phe Tyr Glu
 210 215 220

Ile Leu His Leu Pro Asn Leu Thr Glu Glu Gln Arg Asn Ala Phe Ile
 225 230 235 240

Gln Ser Leu Arg Asp Asp Pro Ser Val Ser Leu Glu Val Leu Gly Glu
 245 250 255

Ala Gln Lys Leu Asn Asp Ser Gln Ala Lys Phe Asp Glu Ala Gln Gln
 260 265 270

Ala Ala Phe Tyr Glu Ile Leu His Leu Pro Asn Leu Thr Glu Glu Gln
 275 280 285

Arg Asn Ala Phe Ile Gln Ser Leu Arg Asp Asp Pro Ser Val Ser Leu
 290 295 300

Glu Val Leu Gly Glu Ala Gln Lys Leu Asn Asp Ser Gln Ala
 305 310 315

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Ile Ala Ala Lys Phe Asp Glu Ala Gln Gln Ala Ala Phe Tyr Glu Ile
 1 5 10 15

Leu His Leu Pro Asn Leu Thr Glu Glu Gln Arg Asn Ala Phe Ile Gln

20

25

30

Ser Leu Arg Asp Asp Pro Ser Val Ser Leu Glu Val Leu Gly Glu Ala
 35 40 45

Gln Lys Leu Asn Asp Ser Gln Ala Pro Lys Ile Ala Ala Lys Phe Asp
 50 55 60

Glu Ala Gln Gln Ala Ala Phe Tyr Glu Ile Leu His Leu Pro Asn Leu
 65 70 75 80

Thr Glu Glu Gln Arg Asn Ala Phe Ile Gln Ser Leu Arg Asp Asp Pro
 85 90 95

Ser Val Ser Leu Glu Val Leu Gly Glu Ala Gln Lys Leu Asn Asp Ser
 100 105 110

Gln Ala Pro Lys Ile Ala Ala Lys Phe Asp Glu Ala Gln Gln Ala Ala
 115 120 125

Phe Tyr Glu Ile Leu His Leu Pro Asn Leu Thr Glu Glu Gln Arg Asn
 130 135 140

Ala Phe Ile Gln Ser Leu Arg Asp Asp Pro Ser Val Ser Leu Glu Val
 145 150 155 160

Leu Gly Glu Ala Gln Lys Leu Asn Asp Ser Gln Ala Pro Lys Ile Ala
 165 170 175

Ala Lys Phe Asp Glu Ala Gln Gln Ala Ala Phe Tyr Glu Ile Leu His
 180 185 190

Leu Pro Asn Leu Thr Glu Glu Gln Arg Asn Ala Phe Ile Gln Ser Leu
 195 200 205

Arg Asp Asp Pro Ser Val Ser Leu Glu Val Leu Gly Glu Ala Gln Lys
 210 215 220

Leu Asn Asp Ser Gln Ala Pro Lys Ile Ala Ala Lys Phe Asp Glu Ala
225 230 235 240

Gln Gln Ala Ala Phe Tyr Glu Ile Leu His Leu Pro Asn Leu Thr Glu
245 250 255

Glu Gln Arg Asn Ala Phe Ile Gln Ser Leu Arg Asp Asp Pro Ser Val
260 265 270

Ser Leu Glu Val Leu Gly Glu Ala Gln Lys Leu Asn Asp Ser Gln Ala
275 280 285

Pro Lys
290

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Ile Ala Ala Lys Phe Asp Glu Ala Gln Gln Ala Ala Phe Tyr Glu Ile
1 5 10 15

Leu His Leu Pro Asn Leu Thr Glu Glu Gln Arg Asn Ala Phe Ile Gln
20 25 30

Ser Leu Arg Asp Asp Pro Ser Val Ser Lys Glu Val Leu Gly Glu Ala
35 40 45

Gln Lys Leu Asn Asp Ser Gln Ala Pro Lys
50 55

<210> 30
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<223> alkaline stable Ig binding domain cs27-2 (IB27 I/11A/35R/42L)

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Ile	Ala	Ala	Lys	Phe	Asp	Glu	Ala	Gln	Gln	Ala	Ala	Phe	Tyr	Glu	Ile
1			5					10						15	

Leu	His	Leu	Pro	Asn	Leu	Thr	Glu	Glu	Gln	Arg	Asn	Ala	Phe	Ile	Gln
			20					25					30		

Ser	Leu	Arg	Asp	Asp	Pro	Ser	Val	Ser	Leu	Glu	Val	Leu	Gly	Glu	Ala
		35					40					45			

Gln	Lys	Leu	Asn	Asp	Ser	Gln	Ala	Pro	Lys
	50					55			

<210> 31

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<223> alkaline stable Ig binding domain C 1I/11A/35R

<400> 31

Ile	Asp	Asn	Lys	Phe	Asn	Lys	Glu	Gln	Gln	Ala	Ala	Phe	Tyr	Glu	Ile
1			5					10						15	

Leu	His	Leu	Pro	Asn	Leu	Thr	Glu	Glu	Gln	Arg	Asn	Gly	Phe	Ile	Gln
			20					25					30		

Ser	Leu	Arg	Asp	Asp	Pro	Ser	Val	Ser	Lys	Glu	Ile	Leu	Ala	Glu	Ala
		35					40					45			

Lys	Lys	Leu	Asn	Asp	Ala	Gln	Ala	Pro	Lys
	50					55			

<210> 32

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Ile Asp Asn Lys Phe Asn Lys Glu Gln Gln Ala Ala Phe Tyr Glu Ile
1 5 10 15

Leu His Leu Pro Asn Leu Thr Glu Glu Gln Arg Asn Gly Phe Ile Gln
20 25 30

Ser Leu Arg Asp Asp Pro Ser Val Ser Leu Glu Ile Leu Ala Glu Ala
35 40 45

Lys Lys Leu Asn Asp Ala Gln Ala Pro Lys
50 55

<210> 33
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<220>
<223> alkaline stable Ig binding domain B 1I/11A/35R

<400> 33

Ile Asp Asn Lys Phe Asn Lys Glu Gln Gln Ala Ala Phe Tyr Glu Ile
1 5 10 15

Leu His Leu Pro Asn Leu Asn Glu Glu Gln Arg Asn Gly Phe Ile Gln
20 25 30

Ser Leu Arg Asp Asp Pro Ser Gln Ser Ala Asn Leu Leu Ala Glu Ala
35 40 45

Lys Lys Leu Asn Asp Ala Gln Ala Pro Lys
50 55

<210> 34
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Ile Asp Asn Lys Phe Asn Lys Glu Gln Gln Ala Ala Phe Tyr Glu Ile
1 5 10 15

Leu His Leu Pro Asn Leu Asn Glu Glu Gln Arg Asn Gly Phe Ile Gln
20 25 30

Ser Leu Arg Asp Asp Pro Ser Gln Ser Leu Asn Leu Leu Ala Glu Ala
35 40 45

Lys Lys Leu Asn Asp Ala Gln Ala Pro Lys
50 55

<210> 35
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<223> alkaline stable Ig binding domain Z 1I/11A/35R

<400> 35

Ile Asp Asn Lys Phe Asn Lys Glu Gln Gln Ala Ala Phe Tyr Glu Ile
1 5 10 15

Leu His Leu Pro Asn Leu Asn Glu Glu Gln Arg Asn Ala Phe Ile Gln
20 25 30

Ser Leu Arg Asp Asp Pro Ser Gln Ser Ala Asn Leu Leu Ala Glu Ala
35 40 45

Lys Lys Leu Asn Asp Ala Gln Ala Pro Lys

50

55

<210> 36
<211> 58
<212> PRT
<213> Artificial Sequence

<220>
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<400> 36

Ile Asp Asn Lys Phe Asn Lys Glu Gln Gln Ala Ala Phe Tyr Glu Ile
1 5 10 15

Leu His Leu Pro Asn Leu Asn Glu Glu Gln Arg Asn Ala Phe Ile Gln
20 25 30

Ser Leu Arg Asp Asp Pro Ser Gln Ser Leu Asn Leu Leu Ala Glu Ala
35 40 45

Lys Lys Leu Asn Asp Ala Gln Ala Pro Lys
50 55

<210> 37
<211> 58
<212> PRT
<213> Artificial Sequence

<220>
<223> alkaline stable Ig binding domain domain Z/2 1I/11A/35R

<400> 37

Ile Asp Ala Lys Phe Asp Lys Glu Gln Gln Ala Ala Phe Tyr Glu Ile
1 5 10 15

Leu His Leu Pro Asn Leu Thr Glu Glu Gln Arg Asn Ala Phe Ile Gln
20 25 30

Ser Leu Arg Asp Asp Pro Ser Gln Ser Leu Ala Leu Leu Ala Glu Ala
35 40 45

Lys Lys Leu Asn Asp Ala Gln Ala Pro Lys
50 55

<210> 38
<211> 58
<212> PRT
<213> Artificial Sequence

<220>
<223> alkaline stable Ig binding domain Z/2 1I/11A/35R/42L

<400> 38

Ile Asp Ala Lys Phe Asp Lys Glu Gln Gln Ala Ala Phe Tyr Glu Ile
1 5 10 15

Leu His Leu Pro Asn Leu Thr Glu Glu Gln Arg Asn Ala Phe Ile Gln
20 25 30

Ser Leu Arg Asp Asp Pro Ser Gln Ser Leu Asn Leu Leu Ala Glu Ala
35 40 45

Lys Lys Leu Asn Asp Ala Gln Ala Pro Lys
50 55

<210> 39
<211> 79
<212> PRT
<213> Artificial Sequence

<220>
<223> alkaline stable Ig binding domain cs14-3 with coupling sequence
and strep tag

<400> 39

Ile Ala Ala Lys His Asp Lys Asp Gln Gln Ala Ala Phe Tyr Glu Ile
1 5 10 15

Leu His Leu Pro Asn Leu Thr Glu Asp Gln Arg Asn Ala Phe Ile Gln
20 25 30

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

Lys Lys Leu Asn Asp Ala Gln Ala Pro Pro Ala Ser Pro Ala Pro Ser
50 55 60

Ala Pro Ser Ala Cys Ala Ser Trp Ser His Pro Gln Phe Glu Lys
65 70 75

<210> 40

<211> 79

<212> PRT

<213> Artificial Sequence

<220>

<223> alkaline stable Ig binding domain cs27-2 with coupling sequence
and strep tag

<400> 40

Ile Ala Ala Lys Phe Asp Glu Ala Gln Gln Ala Ala Phe Tyr Glu Ile
1 5 10 15

Leu His Leu Pro Asn Leu Thr Glu Glu Gln Arg Asn Ala Phe Ile Gln
20 25 30

Ser Leu Arg Asp Asp Pro Ser Val Ser Leu Glu Val Leu Gly Glu Ala
35 40 45

Gln Lys Leu Asn Asp Ser Gln Ala Pro Lys Ala Ser Pro Ala Pro Ser
50 55 60

Ala Pro Ser Ala Cys Ala Ser Trp Ser His Pro Gln Phe Glu Lys
65 70 75

<210> 41

<211> 13

<212> PRT

<213> Artificial Sequence

<220>

<223> coupling sequence

<400> 41

Ala Ser Pro Ala Pro Ser Ala Pro Ser Ala Cys Ala Ser
1 5 10

<210> 42

<211> 58

<212> PRT

<213> Artificial Sequence

<220>

<223> alkaline stable Ig binding domain cs74h1

<400> 42

Ile Ala Ala Lys Phe Asp Glu Ala Gln Gln Ala Ala Phe Tyr Glu Ile
1 5 10 15

Leu His Leu Pro Asn Leu Thr Glu Asp Gln Arg Asn Ala Phe Ile Gln
20 25 30

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

Lys Lys Leu Asn Asp Ala Gln Ala Pro Pro
50 55

<210> 43

<211> 58

<212> PRT

<213> Artificial Sequence

<220>

<223> alkaline stable Ig binding domain cs74h2

<400> 43

Ile Ala Ala Lys Phe Asp Glu Ala Gln Gln Ala Ala Phe Tyr Glu Ile
1 5 10 15

Leu His Leu Pro Asn Leu Thr Glu Glu Gln Arg Asn Ala Phe Ile Gln
20 25 30

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

Lys Lys Leu Asn Asp Ala Gln Ala Pro Pro
50 55

<210> 44
<211> 58
<212> PRT
<213> Artificial Sequence

<220>
<223> alkaline stable Ig binding domain cs47h3

<400> 44

Ile Ala Ala Lys His Asp Lys Asp Gln Gln Ala Ala Phe Tyr Glu Ile
1 5 10 15

Leu His Leu Pro Asn Leu Thr Glu Asp Gln Arg Asn Ala Phe Ile Gln
20 25 30

Ser Leu Arg Asp Asp Pro Ser Val Ser Leu Glu Val Leu Gly Glu Ala
35 40 45

Gln Lys Leu Asn Asp Ser Gln Ala Pro Lys
50 55

<210> 45
<211> 58
<212> PRT
<213> Artificial Sequence

<220>
<223> alkaline stable Ig binding domain cs47h4

<400> 45

Ile Ala Ala Lys His Asp Lys Asp Gln Gln Ala Ala Phe Tyr Glu Ile
1 5 10 15

Leu His Leu Pro Asn Leu Thr Glu Glu Gln Arg Asn Ala Phe Ile Gln

20

25

30

Ser Leu Arg Asp Asp Pro Ser Val Ser Leu Glu Val Leu Gly Glu Ala
35 40 45

Gln Lys Leu Asn Asp Ser Gln Ala Pro Lys
50 55

<210> 46
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> StrepTag

<400> 46

Trp Ser His Pro Gln Phe Glu Lys
1 5

<210> 47
<211> 58
<212> PRT
<213> Artificial Sequence

<220>
<223> parental protein IB74h1

<400> 47

Ala Ala Ala Lys Phe Asp Glu Ala Gln Gln Ser Ala Phe Tyr Glu Ile
1 5 10 15

Leu His Leu Pro Asn Leu Thr Glu Asp Gln Arg Asn Ala Phe Ile Gln
20 25 30

Ser Leu Lys Asp Asp Pro Ser Val Ser Lys Glu Ile Leu Gly Glu Ala
35 40 45

Lys Lys Leu Asn Asp Ala Gln Ala Pro Pro
50 55

<210> 48
<211> 58
<212> PRT
<213> Artificial Sequence

<220>
<223> parental protein IB74h2

<400> 48

Ala Ala Ala Lys Phe Asp Glu Ala Gln Gln Ser Ala Phe Tyr Glu Ile
1 5 10 15

Leu His Leu Pro Asn Leu Thr Glu Glu Gln Arg Asn Ala Phe Ile Gln
20 25 30

Ser Leu Lys Asp Asp Pro Ser Val Ser Lys Glu Ile Leu Gly Glu Ala
35 40 45

Lys Lys Leu Asn Asp Ala Gln Ala Pro Pro
50 55

<210> 49
<211> 58
<212> PRT
<213> Artificial Sequence

<220>
<223> parental protein IB47h3

<400> 49

Ala Ala Ala Lys His Asp Lys Asp Gln Gln Ser Ala Phe Tyr Glu Ile
1 5 10 15

Leu His Leu Pro Asn Leu Thr Glu Asp Gln Arg Asn Ala Phe Ile Gln
20 25 30

Ser Leu Lys Asp Asp Pro Ser Val Ser Lys Glu Val Leu Gly Glu Ala
35 40 45

Gln Lys Leu Asn Asp Ser Gln Ala Pro Lys

50

55

<210> 50
<211> 58
<212> PRT
<213> Artificial Sequence

<220>
<223> parental protein IB47h4

<400> 50

Ala Ala Ala Lys His Asp Lys Asp Gln Gln Ser Ala Phe Tyr Glu Ile
1 5 10 15

Leu His Leu Pro Asn Leu Thr Glu Glu Gln Arg Asn Ala Phe Ile Gln
20 25 30

Ser Leu Lys Asp Asp Pro Ser Val Ser Lys Glu Val Leu Gly Glu Ala
35 40 45

Gln Lys Leu Asn Asp Ser Gln Ala Pro Lys
50 55

<210> 51
<211> 58
<212> PRT
<213> Artificial Sequence

<220>
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<220>
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<222> (1)..(1)
<223> may be replaced by N or P

<220>
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<222> (5)..(5)
<223> may be replaced by F

<220>
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<222> (7)..(7)
<223> may be replaced by E

<220>
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<222> (8)..(8)
<223> may be replaced by A

<220>
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<222> (25)..(25)
<223> may be replaced by E

<220>
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<222> (28)..(28)
<223> may be replaced by S

<220>
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<222> (44)..(44)
<223> may be replaced by V

<220>
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<222> (49)..(49)
<223> may be replaced by Q

<220>
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<222> (54)..(54)
<223> may be replaced by S

<220>
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<222> (58)..(58)
<223> may be replaced by K

<400> 51

Ala	Ala	Ala	Lys	His	Asp	Lys	Asp	Gln	Gln	Ser	Ala	Phe	Tyr	Glu	Ile
1				5				10						15	

Leu	His	Leu	Pro	Asn	Leu	Thr	Glu	Asp	Gln	Arg	Asn	Ala	Phe	Ile	Gln
			20					25					30		

Ser	Leu	Lys	Asp	Asp	Pro	Ser	Val	Ser	Lys	Glu	Ile	Leu	Gly	Glu	Ala
		35					40					45			

Lys Lys Leu Asn Asp Ala Gln Ala Pro Pro
50 55

<210> 52
<211> 58
<212> PRT
<213> Artificial Sequence

<220>
<223> Generic sequence of preferred alkaline stable artifical IgG binding proteins

<220>
<221> variant
<222> (5)..(5)
<223> may be replaced by F

<220>
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<223> may be replaced by E

<220>
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<222> (8)..(8)
<223> may be replaced by A or E

<220>
<221> variant
<222> (25)..(25)
<223> may be replaced by E

<220>
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<222> (28)..(28)
<223> may be replaced by S

<220>
<221> variant
<222> (42)..(42)
<223> may be replaced by L

<220>
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<222> (44)..(44)
<223> may be replaced by V

<220>
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<222> (46)..(46)
<223> may be replaced by A

<220>
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<222> (49)..(49)
<223> may be replaced by Q

<220>
<221> variant
<222> (54)..(54)
<223> may be replaced by S

<220>
<221> variant
<222> (58)..(58)
<223> may be replaced by K

<400> 52

Ile	Ala	Ala	Lys	His	Asp	Lys	Asp	Gln	Gln	Ala	Ala	Phe	Tyr	Glu	Ile
1			5					10						15	

Leu	His	Leu	Pro	Asn	Leu	Thr	Glu	Asp	Gln	Arg	Asn	Ala	Phe	Ile	Gln
		20					25					30			

Ser	Leu	Arg	Asp	Asp	Pro	Ser	Val	Ser	Lys	Glu	Ile	Leu	Gly	Glu	Ala
		35					40					45			

Lys	Lys	Leu	Asn	Asp	Ala	Gln	Ala	Pro	Pro
	50					55			

<210> 53
<211> 58
<212> PRT
<213> Artificial Sequence

<220>
<223> cs27 46C

<400> 53

Ile Ala Ala Lys Phe Asp Glu Ala Gln Gln Ala Ala Phe Tyr Glu Ile

1	5	10	15
Leu His Leu Pro Asn Leu Thr Glu Glu Gln Arg Asn Ala Phe Ile Gln	20	25	30
Ser Leu Arg Asp Asp Pro Ser Val Ser Leu Glu Val Leu Cys Glu Ala	35	40	45
Gln Lys Leu Asn Asp Ser Gln Ala Pro Lys	50	55	

<210> 54
 <211> 58
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> cs14 43C

<400> 54

Ile Ala Ala Lys His Asp Lys Asp Gln Gln Ala Ala Phe Tyr Glu Ile	1	5	10	15
---	---	---	----	----

Leu His Leu Pro Asn Leu Thr Glu Asp Gln Arg Asn Ala Phe Ile Gln	20	25	30
---	----	----	----

Ser Leu Arg Asp Asp Pro Ser Val Ser Leu Cys Ile Leu Gly Glu Ala	35	40	45
---	----	----	----

Lys Lys Leu Asn Asp Ala Gln Ala Pro Pro	50	55
---	----	----

<210> 55
 <211> 174
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> cs27 tetramer

<400> 55

Ile Ala Ala Lys Phe Asp Glu Ala Gln Gln Ala Ala Phe Tyr Glu Ile
1 5 10 15

Leu His Leu Pro Asn Leu Thr Glu Glu Gln Arg Asn Ala Phe Ile Gln
20 25 30

Ser Leu Arg Asp Asp Pro Ser Val Ser Leu Glu Val Leu Gly Glu Ala
35 40 45

Gln Lys Leu Asn Asp Ser Gln Ala Pro Lys Ile Ala Ala Lys Phe Asp
50 55 60

Glu Ala Gln Gln Ala Ala Phe Tyr Glu Ile Leu His Leu Pro Asn Leu
65 70 75 80

Thr Glu Glu Gln Arg Asn Ala Phe Ile Gln Ser Leu Arg Asp Asp Pro
85 90 95

Ser Val Ser Leu Glu Val Leu Gly Glu Ala Gln Lys Leu Asn Asp Ser
100 105 110

Gln Ala Pro Lys Ile Ala Ala Lys Phe Asp Glu Ala Gln Gln Ala Ala
115 120 125

Phe Tyr Glu Ile Leu His Leu Pro Asn Leu Thr Glu Glu Gln Arg Asn
130 135 140

Ala Phe Ile Gln Ser Leu Arg Asp Asp Pro Ser Val Ser Leu Glu Val
145 150 155 160

Leu Gly Glu Ala Gln Lys Leu Asn Asp Ser Gln Ala Pro Lys
165 170