

SEQUENCE LISTING

<110> Innolake Pharmaceuticals (Hangzhou) Co., Ltd.

<120> A GROUP OF B7H3 MONOCLONAL ANTIBODIES AND MEDICAL USE THEREOF

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<151> 2021-06-09

<160> 124

<170> PatentIn version 3.5

<210> 1

<211> 119

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<213> artificial

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

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

Tyr Ile His Trp Val Lys Gln Arg Pro Glu Gln Gly Leu Glu Trp Ile
35 40 45

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

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

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

Thr Arg Ser Ser Thr Arg Leu Arg Pro Phe Asp Tyr Trp Gly Gln Gly
100 105 110

Thr Thr Leu Thr Val Ser Ser
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Asp Ile Val Met Thr Gln Ala Ala Phe Ser Asn Pro Val Thr Leu Gly
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Thr Ser Ala Ser Ile Ser Cys Arg Ser Ser Lys Ser Leu Leu His Ser
20 25 30

Asn Gly Ile Thr Tyr Leu Tyr Trp Tyr Leu Gln Lys Ser Gly Gln Ser
35 40 45

Pro Gln Leu Leu Ile Tyr Gln Met Ser Asn Leu Ala Ser Gly Val Pro
50 55 60

Asp Arg Phe Ser Ser Ser Gly Ser Gly Thr Asp Phe Thr Leu Arg Ile
65 70 75 80

Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Ala Gln Asn
85 90 95

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

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

Thr Ile His Trp Val Lys Gln Ser His Gly Lys Ser Leu Glu Trp Ile
35 40 45

Gly Gly Ile Asn Pro Asn Ser Gly Gly Thr Thr Tyr Asn Leu Lys Phe
50 55 60

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

Met Glu Leu Arg Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Lys Glu Gly Phe Phe Thr Thr Asp Tyr Trp Gly Gln Gly Thr
100 105 110

Thr Leu Thr Val Ser Ser
115

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

Glu Lys Val Thr Met Thr Cys Ser Ala Ser Ser Ser Leu Ser Tyr Ile
20 25 30

His Trp Tyr Arg Gln Lys Ser Gly Thr Ser Pro Lys Arg Trp Ile Tyr
35 40 45

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

Gly Ser Gly Thr Ser Tyr Ser Leu Thr Ile Ser Ser Met Glu Ala Glu
65 70 75 80

Asp Ala Ala Thr Tyr Tyr Cys Gln Gln Trp His Tyr Asn Pro Pro Thr
85 90 95

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

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

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

Thr Ile His Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile
35 40 45

Gly Tyr Ile Asn Pro Thr Ser Asp Tyr Ala Asn Phe Asn Gln Lys Phe
50 55 60

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

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

Ala Arg Trp Gly Thr Thr Val Phe Gln Phe Tyr Phe Asp Tyr Trp Gly
100 105 110

Gln Gly Thr Thr Leu Thr Val Ser Ser
115 120

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Gln Ile Val Leu Ser Gln Ser Pro Ala Ile Leu Ser Ala Ser Pro Gly
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Glu Lys Val Thr Met Thr Cys Arg Ala Ser Gln Ser Leu Ser Tyr Ile
20 25 30

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

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

Ala Ser Gly Thr Ser Tyr Ser Leu Thr Ile Ser Arg Val Glu Ala Glu
 65 70 75 80

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

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

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 Glu Val Gln Leu Gln Gln Ser Gly Thr Glu Leu Val Arg Pro Gly Ala
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Leu Val Lys Leu Ser Cys Lys Ala Ser Ala Leu Asn Ile Lys Asp Phe
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Tyr Met His Trp Val Lys Gln Arg Pro Glu Arg Gly Leu Glu Trp Ile
 35 40 45

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

Gln Gly Lys Ala Ser Ile Thr Ala Asp Ile Ser Ser Ser Thr Ala Tyr
 65 70 75 80

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

Ala Arg Ser Ser Thr Arg Gln Arg Pro Phe Asp Tyr Trp Gly Gln Gly
 100 105 110

Thr Thr Leu Thr Val Ser Ser
 115

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Asp Ile Val Met Thr Gln Ser His Lys Val Met Ser Thr Ser Val Gly
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Asp Arg Val Ser Ile Thr Cys Lys Ala Ser Gln Asp Val Arg Thr Gly
20 25 30

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

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

Ser Gly Ser Gly Ala Asp Phe Thr Phe Thr Ile Thr Ser Val Gln Ala
65 70 75 80

Glu Asp Leu Ala Val Tyr Tyr Cys Gln Gln Tyr Tyr Ser Ile Pro Trp
85 90 95

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

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

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

Ile Met His Trp Val Lys Gln Ser Arg Gly Lys Ser Leu Glu Trp Ile
35 40 45

Gly Gly Ile Asn Pro Asn Ser Gly Gly Thr Thr Tyr Asn Glu Lys Phe

50		55		60
Lys Gly Lys Ala Thr Leu Thr Val Asp Lys Ser Ala Ser Thr Ala Tyr				
65		70		75 80
Met Glu Leu Arg Ser Leu Thr Ser Glu Asp Ser Ala Ile Tyr Tyr Cys				
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Ala Arg Arg Met Pro Tyr Trp Tyr Phe Asp Val Trp Gly Ala Gly Thr				
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Thr Val Thr Val Ser Ser				
	115			
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Gln Ile Val Leu Thr Gln Ser Pro Ala Ile Met Ser Ala Ser Pro Gly				
1	5		10	15
Glu Lys Val Thr Met Thr Cys Ser Ala Ser Ser Ser Val Ser Tyr Ile				
	20		25	30
His Trp Tyr Arg Gln Lys Ser Gly Thr Ser Pro Lys Arg Trp Val Tyr				
	35		40	45
Asp Thr Ser Lys Leu Ala Ser Gly Val Pro Ala Arg Phe Ser Gly Ser				
	50		55	60
Gly Ser Gly Thr Ser Tyr Ser Leu Thr Ile Ser Ser Met Glu Ala Glu				
65		70		75 80
Asp Ala Ala Thr Tyr Tyr Cys Gln Gln Trp Val Ser Asn Pro Leu Thr				
	85		90	95
Phe Gly Ala Gly Thr Lys Leu Glu Leu Lys				
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<400> 11

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

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

Ile Met His Trp Val Lys Gln Ser His Gly Lys Ser Leu Glu Trp Ile
 35 40 45

Gly Gly Ile Asn Pro Asn Thr Gly Gly Ile Thr Tyr Asn Gln Lys Phe
 50 55 60

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

Met Glu Leu Arg Ser Leu Thr Ser Asp Asp Ser Ala Val Tyr Phe Ser
 85 90 95

Ala Arg Ala Gly Gly Asn Phe Leu Trp Tyr Phe Asp Val Trp Gly Ala
 100 105 110

Gly Thr Thr Val Thr Val Ser Ser
 115 120

<210> 12
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 <212> PRT
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<400> 12

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

Glu Lys Val Thr Met Thr Cys Ser Ala Ser Ser Ser Val Ser Tyr Met
 20 25 30

His Trp Tyr Gln Gln Lys Ser Asp Met Ser Pro Lys Arg Trp Leu Tyr
35 40 45

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

Gly Ser Gly Thr Ser Tyr Ser Leu Ala Ile Ser Ser Met Glu Ala Glu
65 70 75 80

Asp Ala Ala Thr Tyr Tyr Cys Gln Gln Trp Asn Ser Asn Pro Leu Thr
85 90 95

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

<210> 13
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<400> 13

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

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

Asp Ile Asn Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile
35 40 45

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

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

Met Gln Phe Ser Ser Leu Thr Ser Glu Asn Ser Ala Val Tyr Phe Cys
85 90 95

Val Arg Arg Gly Phe Asp Tyr Trp Gly Gln Gly Thr Thr Leu Thr Val
100 105 110

Ser Ser

<210> 14
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<212> PRT
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<400> 14

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

Glu Lys Val Thr Met Thr Cys Arg Thr Ser Ser Ser Val Ser Tyr Leu
20 25 30

His Trp Phe Gln Gln Lys Pro Gly Ser Ser Pro Lys Leu Trp Ile His
35 40 45

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

Gly Ser Gly Thr Ser Tyr Ser Leu Ile Ile Ser Ser Met Glu Ala Glu
65 70 75 80

Asp Ala Ala Thr Tyr Tyr Cys His Gln Arg Ser Ser Tyr Pro Trp Thr
85 90 95

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

<210> 15
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<212> PRT
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<400> 15

Glu Val Lys Leu Val Glu Ser Gly Gly Gly Leu Val Arg Pro Gly Gly
1 5 10 15

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

Ala Val Ser Trp Val Arg Gln Thr Pro Glu Lys Arg Leu Glu Trp Val
 35 40 45

Ala Ser Ile Ser Gly Gly Gly Ile Tyr Ile Tyr Tyr Pro Asp Ser Val
 50 55 60

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

Leu Gln Met Asn Ser Leu Thr Pro Asp Asp Thr Ala Leu Tyr Tyr Cys
 85 90 95

Ala Arg His Gly Gly Ala Gly Tyr Phe Asp Tyr Trp Gly Gln Gly Thr
 100 105 110

Thr Leu Thr Val Ser Ser
 115

<210> 16
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<400> 16

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

Glu Thr Val Thr Ile Thr Cys Arg Gly Ser Glu Ser Val His Ser Tyr
 20 25 30

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

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

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

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

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

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<400> 17

Gln Val Gln Leu Gln Gln Ser Gly Pro Glu Leu Val Arg Pro Gly Val
1 5 10 15

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

Ala Met His Trp Val Lys Gln Ser His Ala Lys Ser Leu Glu Trp Ile
35 40 45

Gly Val Ile Asn Ser Tyr Tyr Gly Asn Thr His Tyr Asn Gln Lys Phe
50 55 60

Lys Gly Lys Ala Thr Met Thr Val Asp Lys Ser Ser Ser Thr Ala Tyr
65 70 75 80

Met Glu Leu Ala Arg Leu Thr Ser Glu Asp Ser Ala Ile Tyr Tyr Cys
85 90 95

Ala Arg Ala Gly Gly Tyr Ser Tyr Gly Ser Ser Tyr Arg Pro Asp Arg
100 105 110

Phe Ala Tyr Trp Gly Gln Gly Thr Leu Val Ile Val Ser Ala
115 120 125

<210> 18
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<400> 18

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

Glu Ser Val Thr Ile Thr Cys Leu Ala Ser Gln Thr Ile Gly Thr Trp
20 25 30

Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ser Pro Gln Leu Leu Ile
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 Lys Phe Ser Phe Lys Ile Ser Ser Leu Gln Ala
65 70 75 80

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

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

<210> 19
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Glu Val Gln Leu Gln Gln Ser Gly Pro Glu Leu Val Lys Pro Gly Ala
1 5 10 15

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

Thr Met His Trp Val Lys Gln Ser His Gly Lys Asn Leu Glu Trp Ile
35 40 45

Gly Gly Ile Asn Thr Asp Asn Gly Gly Thr Thr Tyr Ser Gln Lys Phe
50 55 60

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

Met Val Leu Arg Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Tyr Cys

85

90

95

Ala Arg Ser Phe Asn Asn Tyr Gly Pro Ala Trp Phe Ala Tyr Trp Gly
 100 105 110

Gln Gly Ala Leu Val Thr Val Ser Ala
 115 120

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Asp Ile Val Met Thr Gln Ser His Lys Phe Met Ser Thr Ser Ile Gly
 1 5 10 15

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

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

Tyr Trp Ala Ser Thr Arg His Thr Gly Val Pro Ala Arg Phe Thr Gly
 50 55 60

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

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

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

<210> 21
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<400> 21

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

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Ser	Val	Asn	Ile	Ser	Cys	Lys	Thr	Ser	Gly	Tyr	Thr	Phe	Thr	Glu	Asn
		20						25					30		
Thr	Met	His	Trp	Val	Lys	Leu	Ser	His	Gly	Lys	Ser	Leu	Glu	Trp	Ile
		35					40					45			
Gly	Gly	Ile	Asn	Pro	Asn	Asn	Gly	Gly	Thr	Thr	Tyr	Asn	Gln	Lys	Phe
	50					55					60				
Lys	Gly	Lys	Ala	Thr	Leu	Thr	Val	Asp	Lys	Ser	Ser	Ser	Thr	Ala	Tyr
65					70				75						80
Met	Glu	Leu	Arg	Ser	Leu	Thr	Ser	Glu	Asp	Ser	Ala	Val	Tyr	Tyr	Cys
				85					90					95	
Ala	Arg	Arg	Gly	Arg	Trp	Pro	Pro	Asp	Trp	Tyr	Phe	Asp	Val	Trp	Gly
			100					105					110		
Ala	Gly	Thr	Thr	Val	Thr	Val	Ser	Ser							
		115					120								
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<212>	PRT														
<213>	artificial														
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Gln	Ile	Val	Leu	Thr	Gln	Ser	Pro	Ala	Ile	Met	Ser	Ala	Ser	Pro	Gly
1				5					10					15	
Glu	Lys	Val	Thr	Met	Thr	Cys	Ser	Ala	Ser	Ser	Ser	Leu	Ser	Tyr	Met
			20					25					30		
His	Trp	Tyr	Gln	Gln	Lys	Ser	Gly	Thr	Ser	Pro	Lys	Arg	Trp	Ile	Tyr
		35					40					45			
Asp	Thr	Ser	Lys	Leu	Ala	Ser	Gly	Val	Pro	Ala	Arg	Phe	Ser	Gly	Ser
	50					55					60				

Gly Ser Gly Thr Ser Tyr Ser Leu Thr Ile Ser Ser Met Glu Ala Glu
65 70 75 80

Asp Ala Ala Thr Tyr Tyr Cys Gln Gln Trp Ser Ser Asn Pro Leu Thr
85 90 95

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

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<400> 23

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

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

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

Gly Gly Ile Lys Pro Ser Asn Gly Asp Thr Asn Phe Asn Ala Lys Phe
50 55 60

Met Asn Lys Ala Thr Leu Thr Val Asp Lys Ser Ser Ser Thr Ala Tyr
65 70 75 80

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

Thr Arg Phe Phe Tyr Gly Ser Pro Tyr Asp Phe Asp Val Trp Gly Ala
100 105 110

Gly Thr Thr Val Thr Val Ser Ser
115 120

<210> 24
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<400> 24

Asn Ile Val Met Thr Gln Ser Pro Lys Ser Met Ser Met Ala Val Gly
1 5 10 15

Glu Arg Val Thr Leu Thr Cys Lys Ala Ser Glu Asn Val Asp Thr His
20 25 30

Val Ser Trp Tyr Gln Gln Lys Pro Glu Gln Ser Pro Thr Leu Leu Met
35 40 45

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

Ser Gly Ser Ala Thr Asp Phe Thr Leu Thr Ile Ser Ser Val Gln Ala
65 70 75 80

Glu Asp Leu Ala Asp Tyr His Cys Gly Gln Ser Tyr Arg Tyr Pro Tyr
85 90 95

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

<210> 25

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<400> 25

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

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

Val Met His Trp Val Lys Gln Arg His Gly Gln Ser Leu Glu Trp Ile
35 40 45

Gly Gly Ile Asn Pro Asn Thr Gly Gly Thr Thr Tyr Asn Gln Lys Phe
50 55 60

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

Met Glu Phe Arg Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Tyr Cys
85 90 95

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

Gly Thr Ser Val Thr Val Ser Ser
115 120

<210> 26
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Gln Ile Val Leu Thr Gln Ser Pro Ala Ile Met Ser Ala Ser Pro Gly
1 5 10 15

Glu Lys Val Thr Met Thr Cys Ser Ala Ser Ser Ser Val Ser Tyr Ile
20 25 30

His Trp Phe Gln Gln Lys Ser Gly Thr Ser Pro Lys Arg Trp Ile Ser
35 40 45

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

Gly Ser Gly Thr Ser Tyr Ser Leu Thr Ile Ser Ser Met Gly Ala Glu
65 70 75 80

Asp Ala Ala Thr Tyr Tyr Cys His Gln Trp Ile Ser Tyr Pro Pro Thr
85 90 95

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

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Gln Val Gln Leu Gln Gln Ser Gly Pro Glu Leu Val Arg Pro Gly Val
1 5 10 15

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

Ala Ile His Trp Val Lys Gln Ser His Ala Lys Ser Leu Glu Trp Ile
35 40 45

Gly Val Ile Asn Thr Tyr Ser Gly Asn Thr Asn Phe Asn Gln Lys Leu
50 55 60

Lys Gly Lys Ala Thr Met Thr Val Asp Lys Ser Ser Ser Thr Ala Tyr
65 70 75 80

Met Glu Leu Ala Arg Leu Thr Ser Glu Asp Ser Ala Ile Tyr Tyr Cys
85 90 95

Ala Arg Gly Ala His Ser Ser Gly Tyr Pro Tyr Trp Tyr Phe Asp Val
100 105 110

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

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<400> 28

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

Glu Lys Val Thr Met Thr Cys Arg Ala Ser Ser Ser Val Ser Tyr Met
20 25 30

His Trp Tyr Gln Gln Lys Pro Gly Ser Ser Pro Lys Pro Trp Ile Tyr
35 40 45

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

Gly Ser Gly Thr Ser Tyr Ser Leu Thr Ile Ser Arg Val Glu Ala Glu
65 70 75 80

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

Phe Gly Ser Gly Thr Lys Leu Glu Met Lys
100 105

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<400> 29

Ala Tyr Tyr Ile His
1 5

<210> 30
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<400> 30

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

Gly

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Ser Ser Thr Arg Leu Arg Pro Phe Asp Tyr
1 5 10

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Arg Ser Ser Lys Ser Leu Leu His Ser Asn Gly Ile Thr Tyr Leu Tyr
1 5 10 15

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Gln Met Ser Asn Leu Ala Ser
1 5

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Ala Gln Asn Leu Glu Leu Tyr Thr
1 5

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Glu Tyr Thr Ile His
1 5

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<400> 36

Gly Ile Asn Pro Asn Ser Gly Gly Thr Thr Tyr Asn Leu Lys Phe Lys
1 5 10 15

Gly

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Lys Glu Gly Phe Phe Thr Thr Asp Tyr
1 5

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<400> 38

Ser Ala Ser Ser Ser Leu Ser Tyr Ile His
1 5 10

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Asp Thr Ser Asn Leu Ala Thr
1 5

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Gln Gln Trp His Tyr Asn Pro Pro Thr
1 5

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Thr Tyr Thr Ile His
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<400> 42

Tyr Ile Asn Pro Thr Ser Asp Tyr Ala Asn Phe Asn Gln Lys Phe Lys
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Asp

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Trp Gly Thr Thr Val Phe Gln Phe Tyr Phe Asp Tyr
1 5 10

<210> 44

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<400> 44

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

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Ala Thr Ser Ser Leu Gln Ser
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Gln His Trp Ser Ser Asp Pro Pro Thr
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Asp Phe Tyr Met His
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Trp Ile Asp Pro Asp Asn Gly Asn Thr Ile Tyr Asp Pro Lys Phe Gln
1 5 10 15

Gly

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Ser Ser Thr Arg Gln Arg Pro Phe Asp Tyr
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Lys Ala Ser Gln Asp Val Arg Thr Gly Val Ala
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Ser Ala Phe Tyr Arg Tyr Thr
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Gln Gln Tyr Tyr Ser Ile Pro Trp Thr
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Glu Tyr Ile Met His
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Gly Ile Asn Pro Asn Ser Gly Gly Thr Thr Tyr Asn Glu Lys Phe Lys
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Gly

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Arg Met Pro Tyr Trp Tyr Phe Asp Val
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Ser Tyr Ala Val Ser
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Ser Ile Ser Gly Gly Gly Ile Tyr Ile Tyr Tyr Pro Asp Ser Val Lys
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Ala Thr Ser Asn Leu Ala Ser
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Ile Met His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Ile
35 40 45

Gly Gly Ile Asn Pro Asn Ser Gly Gly Thr Thr Tyr Asn Glu Lys Phe
50 55 60

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

Met Glu Leu Ser Arg Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys
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Ala Arg Arg Met Pro Tyr Trp Tyr Phe Asp Val Trp Gly Gln Gly Thr
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Met Val Thr Val Ser Ser
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His Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Arg Trp Val Tyr
35 40 45

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

Gly Ser Gly Thr Asp Tyr Thr Leu Thr Ile Ser Ser Leu Glu Pro Glu
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Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys
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Ser Val Lys Val Ser Cys Lys Thr Ser Gly Tyr Thr Phe Thr Glu Tyr
 20 25 30

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

Gly Gly Ile Asn Pro Asn Thr Gly Gly Ile Thr Tyr Asn Gln Lys Phe
 50 55 60

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

Met Glu Leu Ser Arg Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys
 85 90 95

Ala Arg Ala Gly Gly Asn Phe Leu Trp Tyr Phe Asp Val Trp Gly Gln
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Gly Thr Met Val Thr Val Ser Ser
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Glu Arg Ala Thr Leu Ser Cys Ser Ala Ser Ser Ser Val Ser Tyr Met
 20 25 30

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

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

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

Asp Phe Ala Val Tyr Tyr Cys Gln Gln Trp Asn Ser Asn Pro Leu Thr
85 90 95

Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys
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Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
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Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Glu Tyr
20 25 30

Thr Ile His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Ile
35 40 45

Gly Gly Ile Asn Pro Asn Ser Gly Gly Thr Thr Tyr Asn Leu Lys Phe
50 55 60

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

Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Lys Glu Gly Phe Phe Thr Thr Asp Tyr Trp Gly Gln Gly Thr
100 105 110

Leu Val Thr Val Ser Ser
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Glu Thr Val Leu Thr Gln Ser Pro Ala Thr Leu Ser Leu Ser Pro Gly
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Glu Arg Ala Thr Leu Ser Cys Ser Ala Ser Ser Ser Leu Ser Tyr Ile
20 25 30

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

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

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

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

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

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

Gly Trp Ile Asp Pro Gly Asp Gly Ser Thr Lys Tyr Asn Glu Lys Phe

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His	Trp	Phe	Gln	Gln	Lys	Pro	Gly	Gln	Ala	Pro	Arg	Leu	Trp	Ile	His
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	50					55					60				
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Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Ile Thr Tyr
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Thr Ile His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Ile
35 40 45

Gly Tyr Ile Asn Pro Thr Ser Asp Tyr Ala Asn Phe Asn Gln Lys Phe
50 55 60

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

Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Trp Gly Thr Thr Val Phe Gln Phe Tyr Phe Asp Tyr Trp Gly
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Gln Gly Thr Leu Val Thr Val Ser Ser
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Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln Ser Leu Ser Tyr Ile
20 25 30

Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Pro Trp Ile Tyr
 35 40 45

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

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

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

Ile Gly Gly Gly Thr Lys Val Glu Ile Lys
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Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr
 20 25 30

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

Ala Ser Ile Ser Gly Gly Gly Ile Tyr Ile Tyr Tyr Pro Asp Ser Val
 50 55 60

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

Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
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Ala Arg His Gly Gly Ala Gly Tyr Phe Asp Tyr Trp Gly Gln Gly Thr
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Leu Val Thr Val Ser Ser
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35 40 45

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

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

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

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