

SEQUENCE LISTING

<110> Regeneron Pharmaceuticals, Inc.

<120> IL-4/IL-13 Pathway Inhibitors for Enhanced Efficacy in Treating Cancer

<130> 10529P1-US

<160> 22

<170> FastSEQ for Windows Version 4.0

 $\langle 210 \rangle$ 1

$\langle 211 \rangle$ 124

<212> PRT

<213> Artificial Sequence

 $\langle 220 \rangle$

<223> R668 HCVR

$\langle 400 \rangle$ 1

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

 $\langle 210 \rangle$ 2 $\langle 211 \rangle$ 112

<212> PRT

<213> Artificial Sequence

 $\langle 220 \rangle$

<223> R668 LCVR

 $\langle 400 \rangle$ 2

Asp	Ile	Val	Met	Thr	Gln	Ser	Pro	Leu	Ser	Leu	Pro	Val	Thr	Pro	Gly
1				5					10					15	
Glu	Pro	Ala	Ser	Ile	Ser	Cys	Arg	Ser	Ser	Gln	Ser	Leu	Leu	Tyr	Ser
			20					25					30		

Ile	Gly	Tyr	Asn	Tyr	Leu	Asp	Trp	Tyr	Leu	Gln	Lys	Ser	Gly	Gln	Ser
	35					40				45					
Pro	Gln	Leu	Leu	Ile	Tyr	Leu	Gly	Ser	Asn	Arg	Ala	Ser	Gly	Val	Pro
50					55		60								
Asp	Arg	Phe	Ser	Gly	Ser	Gly	Ser	Gly	Thr	Asp	Phe	Thr	Leu	Lys	Ile
65				70			75							80	
Ser	Arg	Val	Glu	Ala	Glu	Asp	Val	Gly	Phe	Tyr	Tyr	Cys	Met	Gln	Ala
			85				90						95		
Leu	Gln	Thr	Pro	Tyr	Thr	Phe	Gly	Gln	Gly	Thr	Lys	Leu	Glu	Ile	Lys
		100					105						110		

<210> 3
 <211> 8
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> R668 HCDR1

<400> 3
 Gly Phe Thr Phe Arg Asp Tyr Ala
 1 5

<210> 4
 <211> 8
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> R668 HCDR2

<400> 4
 Ile Ser Gly Ser Gly Gly Asn Thr
 1 5

<210> 5
 <211> 18
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> R668 HCDR3

<400> 5
 Ala Lys Asp Arg Leu Ser Ile Thr Ile Arg Pro Arg Tyr Tyr Gly Leu
 1 5 10 15
 Asp Val

<210> 6
 <211> 11

<212> PRT
<213> Artificial Sequence

<220>
<223> R668 LCDR1

<400> 6
Gln Ser Leu Leu Tyr Ser Ile Gly Tyr Asn Tyr
1 5 10

<210> 7
<211> 3
<212> PRT
<213> Artificial Sequence

<220>
<223> R668 LCDR2

<400> 7
Leu Gly Ser
1

<210> 8
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> R668 LCDR3

<400> 8
Met Gln Ala Leu Gln Thr Pro Tyr Thr
1 5

<210> 9
<211> 451
<212> PRT
<213> Artificial Sequence

<220>
<223> R668 HC

<400> 9
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Glu Gln Pro Gly Gly
1 5 10 15
Ser Leu Arg Leu Ser Cys Ala Gly Ser Gly Phe Thr Phe Arg Asp Tyr
20 25 30
Ala Met Thr Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45
Ser Ser Ile Ser Gly Ser Gly Gly Asn Thr Tyr Tyr Ala Asp Ser Val
50 55 60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr

65					70				75					80
Leu	Gln	Met	Asn	Ser	Leu	Arg	Ala	Glu	Asp	Thr	Ala	Val	Tyr	Tyr
				85					90					95
Ala	Lys	Asp	Arg	Leu	Ser	Ile	Thr	Ile	Arg	Pro	Arg	Tyr	Tyr	Gly
			100					105					110	Leu
Asp	Val	Trp	Gly	Gln	Gly	Thr	Thr	Val	Thr	Val	Ser	Ser	Ala	Ser
		115					120					125		Thr
Lys	Gly	Pro	Ser	Val	Phe	Pro	Leu	Ala	Pro	Cys	Ser	Arg	Ser	Thr
	130					135					140			Ser
Glu	Ser	Thr	Ala	Ala	Leu	Gly	Cys	Leu	Val	Lys	Asp	Tyr	Phe	Pro
145					150					155				Glu
Pro	Val	Thr	Val	Ser	Trp	Asn	Ser	Gly	Ala	Leu	Thr	Ser	Gly	Val
				165					170					175
Thr	Phe	Pro	Ala	Val	Leu	Gln	Ser	Ser	Gly	Leu	Tyr	Ser	Leu	Ser
			180					185					190	
Val	Val	Thr	Val	Pro	Ser	Ser	Ser	Leu	Gly	Thr	Lys	Thr	Tyr	Thr
		195					200					205		Cys
Asn	Val	Asp	His	Lys	Pro	Ser	Asn	Thr	Lys	Val	Asp	Lys	Arg	Val
	210					215					220			Glu
Ser	Lys	Tyr	Gly	Pro	Pro	Cys	Pro	Pro	Cys	Pro	Ala	Pro	Glu	Phe
225					230					235				240
Gly	Gly	Pro	Ser	Val	Phe	Leu	Phe	Pro	Pro	Lys	Pro	Lys	Asp	Thr
				245					250					255
Met	Ile	Ser	Arg	Thr	Pro	Glu	Val	Thr	Cys	Val	Val	Val	Asp	Val
			260					265					270	Ser
Gln	Glu	Asp	Pro	Glu	Val	Gln	Phe	Asn	Trp	Tyr	Val	Asp	Gly	Val
		275					280					285		Glu
Val	His	Asn	Ala	Lys	Thr	Lys	Pro	Arg	Glu	Glu	Gln	Phe	Asn	Ser
	290					295					300			Thr
Tyr	Arg	Val	Val	Ser	Val	Leu	Thr	Val	Leu	His	Gln	Asp	Trp	Leu
305					310					315				320
Gly	Lys	Glu	Tyr	Lys	Cys	Lys	Val	Ser	Asn	Lys	Gly	Leu	Pro	Ser
				325					330					335
Ile	Glu	Lys	Thr	Ile	Ser	Lys	Ala	Lys	Gly	Gln	Pro	Arg	Glu	Pro
			340					345					350	Gln
Val	Tyr	Thr	Leu	Pro	Pro	Ser	Gln	Glu	Glu	Met	Thr	Lys	Asn	Gln
		355					360					365		Val
Ser	Leu	Thr	Cys	Leu	Val	Lys	Gly	Phe	Tyr	Pro	Ser	Asp	Ile	Ala
	370					375					380			Val
Glu	Trp	Glu	Ser	Asn	Gly	Gln	Pro	Glu	Asn	Asn	Tyr	Lys	Thr	Thr
385					390					395				400
Pro	Val	Leu	Asp	Ser	Asp	Gly	Ser	Phe	Phe	Leu	Tyr	Ser	Arg	Leu
				405					410					415
Val	Asp	Lys	Ser	Arg	Trp	Gln	Glu	Gly	Asn	Val	Phe	Ser	Cys	Ser
			420					425					430	Val
Met	His	Glu	Ala	Leu	His	Asn	His	Tyr	Thr	Gln	Lys	Ser	Leu	Ser
		435				440						445		Leu
Ser	Leu	Gly												
	450													

<210> 10

<211> 219

<212> PRT

<213> Artificial Sequence

<220>

<223> R668 LC

<400> 10

Asp	Ile	Val	Met	Thr	Gln	Ser	Pro	Leu	Ser	Leu	Pro	Val	Thr	Pro	Gly
1				5					10					15	
Glu	Pro	Ala	Ser	Ile	Ser	Cys	Arg	Ser	Ser	Gln	Ser	Leu	Leu	Tyr	Ser
			20					25					30		
Ile	Gly	Tyr	Asn	Tyr	Leu	Asp	Trp	Tyr	Leu	Gln	Lys	Ser	Gly	Gln	Ser
		35					40					45			
Pro	Gln	Leu	Leu	Ile	Tyr	Leu	Gly	Ser	Asn	Arg	Ala	Ser	Gly	Val	Pro
	50					55					60				
Asp	Arg	Phe	Ser	Gly	Ser	Gly	Ser	Gly	Thr	Asp	Phe	Thr	Leu	Lys	Ile
65				70						75					80
Ser	Arg	Val	Glu	Ala	Glu	Asp	Val	Gly	Phe	Tyr	Tyr	Cys	Met	Gln	Ala
			85					90						95	
Leu	Gln	Thr	Pro	Tyr	Thr	Phe	Gly	Gln	Gly	Thr	Lys	Leu	Glu	Ile	Lys
			100					105						110	
Arg	Thr	Val	Ala	Ala	Pro	Ser	Val	Phe	Ile	Phe	Pro	Pro	Ser	Asp	Glu
		115					120					125			
Gln	Leu	Lys	Ser	Gly	Thr	Ala	Ser	Val	Val	Cys	Leu	Leu	Asn	Asn	Phe
	130					135					140				
Tyr	Pro	Arg	Glu	Ala	Lys	Val	Gln	Trp	Lys	Val	Asp	Asn	Ala	Leu	Gln
145					150					155					160
Ser	Gly	Asn	Ser	Gln	Glu	Ser	Val	Thr	Glu	Gln	Asp	Ser	Lys	Asp	Ser
				165					170					175	
Thr	Tyr	Ser	Leu	Ser	Ser	Thr	Leu	Thr	Leu	Ser	Lys	Ala	Asp	Tyr	Glu
			180					185						190	
Lys	His	Lys	Val	Tyr	Ala	Cys	Glu	Val	Thr	His	Gln	Gly	Leu	Ser	Ser
	195						200					205			
Pro	Val	Thr	Lys	Ser	Phe	Asn	Arg	Gly	Glu	Cys					
	210					215									

<210> 11

<211> 117

<212> PRT

<213> Artificial Sequence

<220>

<223> R2810 HCVR

<400> 11

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

				85					90					95		
Val	Lys	Trp	Gly	Asn	Ile	Tyr	Phe	Asp	Tyr	Trp	Gly	Gln	Gly	Thr	Leu	
			100					105					110			
Val	Thr	Val	Ser	Ser												
		115														

<210> 12
 <211> 107
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> R2810 LCVR

<400> 12																
Asp	Ile	Gln	Met	Thr	Gln	Ser	Pro	Ser	Ser	Leu	Ser	Ala	Ser	Val	Gly	
1				5				10						15		
Asp	Ser	Ile	Thr	Ile	Thr	Cys	Arg	Ala	Ser	Leu	Ser	Ile	Asn	Thr	Phe	
			20					25					30			
Leu	Asn	Trp	Tyr	Gln	Gln	Lys	Pro	Gly	Lys	Ala	Pro	Asn	Leu	Leu	Ile	
		35					40					45				
Tyr	Ala	Ala	Ser	Ser	Leu	His	Gly	Gly	Val	Pro	Ser	Arg	Phe	Ser	Gly	
	50					55					60					
Ser	Gly	Ser	Gly	Thr	Asp	Phe	Thr	Leu	Thr	Ile	Arg	Thr	Leu	Gln	Pro	
65					70					75					80	
Glu	Asp	Phe	Ala	Thr	Tyr	Tyr	Cys	Gln	Gln	Ser	Ser	Asn	Thr	Pro	Phe	
				85					90					95		
Thr	Phe	Gly	Pro	Gly	Thr	Val	Val	Asp	Phe	Arg						
			100					105								

<210> 13
 <211> 8
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> R2810 HCDR1

<400> 13							
Gly	Phe	Thr	Phe	Ser	Asn	Phe	Gly
1				5			

<210> 14
 <211> 8
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> R2810 HCDR2

<400> 14					
Ile	Ser	Gly	Gly	Gly	Arg
				Asp	Thr

1 5

<210> 15
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> R2810 HCDR3

<400> 15
Val Lys Trp Gly Asn Ile Tyr Phe Asp Tyr
1 5 10

<210> 16
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> R2810 LCDR1

<400> 16
Leu Ser Ile Asn Thr Phe
1 5

<210> 17
<211> 3
<212> PRT
<213> Artificial Sequence

<220>
<223> R2810 LCDR2

<400> 17
Ala Ala Ser
1

<210> 18
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> R2810 LCDR3

<400> 18
Gln Gln Ser Ser Asn Thr Pro Phe Thr
1 5

<210> 19
 <211> 444
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> R2810 HC

<400> 19

Glu	Val	Gln	Leu	Leu	Glu	Ser	Gly	Gly	Val	Leu	Val	Gln	Pro	Gly	Gly	1	5	10	15
Ser	Leu	Arg	Leu	Ser	Cys	Ala	Ala	Ser	Gly	Phe	Thr	Phe	Ser	Asn	Phe	20	25	30	
Gly	Met	Thr	Trp	Val	Arg	Gln	Ala	Pro	Gly	Lys	Gly	Leu	Glu	Trp	Val	35	40	45	
Ser	Gly	Ile	Ser	Gly	Gly	Gly	Arg	Asp	Thr	Tyr	Phe	Ala	Asp	Ser	Val	50	55	60	
Lys	Gly	Arg	Phe	Thr	Ile	Ser	Arg	Asp	Asn	Ser	Lys	Asn	Thr	Leu	Tyr	65	70	75	80
Leu	Gln	Met	Asn	Ser	Leu	Lys	Gly	Glu	Asp	Thr	Ala	Val	Tyr	Tyr	Cys	85	90	95	
Val	Lys	Trp	Gly	Asn	Ile	Tyr	Phe	Asp	Tyr	Trp	Gly	Gln	Gly	Thr	Leu	100	105	110	
Val	Thr	Val	Ser	Ser	Ala	Ser	Thr	Lys	Gly	Pro	Ser	Val	Phe	Pro	Leu	115	120	125	
Ala	Pro	Cys	Ser	Arg	Ser	Thr	Ser	Glu	Ser	Thr	Ala	Ala	Leu	Gly	Cys	130	135	140	
Leu	Val	Lys	Asp	Tyr	Phe	Pro	Glu	Pro	Val	Thr	Val	Ser	Trp	Asn	Ser	145	150	155	160
Gly	Ala	Leu	Thr	Ser	Gly	Val	His	Thr	Phe	Pro	Ala	Val	Leu	Gln	Ser	165	170	175	
Ser	Gly	Leu	Tyr	Ser	Leu	Ser	Ser	Val	Val	Thr	Val	Pro	Ser	Ser	Ser	180	185	190	
Leu	Gly	Thr	Lys	Thr	Tyr	Thr	Cys	Asn	Val	Asp	His	Lys	Pro	Ser	Asn	195	200	205	
Thr	Lys	Val	Asp	Lys	Arg	Val	Glu	Ser	Lys	Tyr	Gly	Pro	Pro	Cys	Pro	210	215	220	
Pro	Cys	Pro	Ala	Pro	Glu	Phe	Leu	Gly	Gly	Pro	Ser	Val	Phe	Leu	Phe	225	230	235	240
Pro	Pro	Lys	Pro	Lys	Asp	Thr	Leu	Met	Ile	Ser	Arg	Thr	Pro	Glu	Val	245	250	255	
Thr	Cys	Val	Val	Val	Asp	Val	Ser	Gln	Glu	Asp	Pro	Glu	Val	Gln	Phe	260	265	270	
Asn	Trp	Tyr	Val	Asp	Gly	Val	Glu	Val	His	Asn	Ala	Lys	Thr	Lys	Pro	275	280	285	
Arg	Glu	Glu	Gln	Phe	Asn	Ser	Thr	Tyr	Arg	Val	Val	Ser	Val	Leu	Thr	290	295	300	
Val	Leu	His	Gln	Asp	Trp	Leu	Asn	Gly	Lys	Glu	Tyr	Lys	Cys	Lys	Val	305	310	315	320
Ser	Asn	Lys	Gly	Leu	Pro	Ser	Ser	Ile	Glu	Lys	Thr	Ile	Ser	Lys	Ala	325	330	335	
Lys	Gly	Gln	Pro	Arg	Glu	Pro	Gln	Val	Tyr	Thr	Leu	Pro	Pro	Ser	Gln	340	345	350	
Glu	Glu	Met	Thr	Lys	Asn	Gln	Val	Ser	Leu	Thr	Cys	Leu	Val	Lys	Gly	355	360	365	

Phe	Tyr	Pro	Ser	Asp	Ile	Ala	Val	Glu	Trp	Glu	Ser	Asn	Gly	Gln	Pro
370						375					380				
Glu	Asn	Asn	Tyr	Lys	Thr	Thr	Pro	Pro	Val	Leu	Asp	Ser	Asp	Gly	Ser
385					390					395					400
Phe	Phe	Leu	Tyr	Ser	Arg	Leu	Thr	Val	Asp	Lys	Ser	Arg	Trp	Gln	Glu
				405					410					415	
Gly	Asn	Val	Phe	Ser	Cys	Ser	Val	Met	His	Glu	Ala	Leu	His	Asn	His
			420					425					430		
Tyr	Thr	Gln	Lys	Ser	Leu	Ser	Leu	Ser	Leu	Gly	Lys				
		435					440								

<210> 20
 <211> 214
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> R2810 LC

Asp	Ile	Gln	Met	Thr	Gln	Ser	Pro	Ser	Ser	Leu	Ser	Ala	Ser	Val	Gly
1				5				10						15	
Asp	Ser	Ile	Thr	Ile	Thr	Cys	Arg	Ala	Ser	Leu	Ser	Ile	Asn	Thr	Phe
			20				25						30		
Leu	Asn	Trp	Tyr	Gln	Gln	Lys	Pro	Gly	Lys	Ala	Pro	Asn	Leu	Leu	Ile
	35					40						45			
Tyr	Ala	Ala	Ser	Ser	Leu	His	Gly	Gly	Val	Pro	Ser	Arg	Phe	Ser	Gly
	50					55					60				
Ser	Gly	Ser	Gly	Thr	Asp	Phe	Thr	Leu	Thr	Ile	Arg	Thr	Leu	Gln	Pro
65					70					75					80
Glu	Asp	Phe	Ala	Thr	Tyr	Tyr	Cys	Gln	Gln	Ser	Ser	Asn	Thr	Pro	Phe
				85					90					95	
Thr	Phe	Gly	Pro	Gly	Thr	Val	Val	Asp	Phe	Arg	Arg	Thr	Val	Ala	Ala
			100					105					110		
Pro	Ser	Val	Phe	Ile	Phe	Pro	Pro	Ser	Asp	Glu	Gln	Leu	Lys	Ser	Gly
		115					120					125			
Thr	Ala	Ser	Val	Val	Cys	Leu	Leu	Asn	Asn	Phe	Tyr	Pro	Arg	Glu	Ala
	130					135					140				
Lys	Val	Gln	Trp	Lys	Val	Asp	Asn	Ala	Leu	Gln	Ser	Gly	Asn	Ser	Gln
145					150					155					160
Glu	Ser	Val	Thr	Glu	Gln	Asp	Ser	Lys	Asp	Ser	Thr	Tyr	Ser	Leu	Ser
				165					170					175	
Ser	Thr	Leu	Thr	Leu	Ser	Lys	Ala	Asp	Tyr	Glu	Lys	His	Lys	Val	Tyr
			180					185					190		
Ala	Cys	Glu	Val	Thr	His	Gln	Gly	Leu	Ser	Ser	Pro	Val	Thr	Lys	Ser
		195					200						205		
Phe	Asn	Arg	Gly	Glu	Cys										
															210

<210> 21
 <211> 117
 <212> PRT
 <213> Artificial Sequence

<220>

<223> R1103 HCVR

<400> 21

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

<210> 22

<211> 111

<212> PRT

<213> Artificial Sequence

<220>

<223> R1103 LCVR

<400> 22

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