

Sequence_Listing_13542-016-228

SEQUENCE LISTING

<110> MEMORIAL SLOAN-KETTERING CANCER CENTER

<120> ANTI-MUC16 ANTIBODIES AND USES THEREOF

<130> 13542-016-228

<150> 62/134,402

<151> 2015-03-17

<160> 175

<170> FastSEQ for Windows Version 4.0

<210> 1

<211> 122

<212> PRT

<213> Artificial Sequence

<220>

<223> 10C6 VH

<400> 1

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

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<210> 2

<211> 109

<212> PRT

<213> Artificial Sequence

Sequence_Listing_13542-016-228

<220>

<223> 10C6 VL

<400> 2

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

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<212> PRT

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<220>

<223> 10C6 HCDR1 (KABAT)

<400> 3

Thr	Leu	Gly	Met	Gly	Val	Gly
1				5		

<210> 4

<211> 16

<212> PRT

<213> Artificial Sequence

<220>

<223> 10C6 HCDR2 (KABAT)

<400> 4

His	Ile	Trp	Trp	Asp	Asp	Asp	Lys	Tyr	Tyr	Asn	Pro	Ala	Leu	Lys	Ser
1				5					10					15	

<210> 5

Sequence_Listing_13542-016-228

<211> 12

<212> PRT

<213> Artificial Sequence

<220>

<223> 10C6 HCDR3 (KABAT)

<400> 5

Ile Gly Thr Ala Gln Ala Thr Asp Ala Leu Asp Tyr
1 5 10

<210> 6

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> 10C6 LCDR1 (KABAT)

<400> 6

Arg Ala Ser Lys Ser Val Ser Thr Ser Gly Tyr Ser Tyr Met His
1 5 10 15

<210> 7

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> 10C6 LCDR2 (KABAT)

<400> 7

Leu Val Ser Asn Leu Glu Ser
1 5

<210> 8

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> 10C6 LCDR3 (KABAT)

<400> 8

Gln His Ile Arg Glu Leu Thr Arg Ser

1 5

<210> 9
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 <223> 10C6 HCDR1 (CHOTHIA)

<400> 9
 Gly Phe Ser Leu Asn Thr Leu Gly Met
 1 5

<210> 10
 <211> 3
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 <223> 10C6 HCDR2 (CHOTHIA)

<400> 10
 Trp Asp Asp
 1

<210> 11
 <211> 10
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> 10C6 HCDR3 (CHOTHIA)

<400> 11
 Gly Thr Ala Gln Ala Thr Asp Ala Leu Asp
 1 5 10

<210> 12
 <211> 11
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<223> 10C6 LCDR1 (CHOTHIA)

<400> 12

Ser Lys Ser Val Ser Thr Ser Gly Tyr Ser Tyr
1 5 10

<210> 13

<211> 3

<212> PRT

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<223> 10C6 LCDR2 (CHOTHIA)

<400> 13

Leu Val Ser
1

<210> 14

<211> 6

<212> PRT

<213> Artificial Sequence

<220>

<223> 10C6 LCDR3 (CHOTHIA)

<400> 14

Ile Arg Glu Leu Thr Arg
1 5

<210> 15

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<223> 10C6 HCDR1 (IMGT)

<400> 15

Gly Phe Ser Leu Asn Thr Leu Gly Met Gly
1 5 10

<210> 16

<211> 7

Sequence_Listing_13542-016-228

<212> PRT

<213> Artificial Sequence

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<223> 10C6 HCDR2 (IMGT)

<400> 16

Ile Trp Trp Asp Asp Asp Lys
1 5

<210> 17

<211> 14

<212> PRT

<213> Artificial Sequence

<220>

<223> 10C6 HCDR3 (IMGT)

<400> 17

Ser Arg Ile Gly Thr Ala Gln Ala Thr Asp Ala Leu Asp Tyr
1 5 10

<210> 18

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<223> 10C6 LCDR1 (IMGT)

<400> 18

Lys Ser Val Ser Thr Ser Gly Tyr Ser Tyr
1 5 10

<210> 19

<211> 3

<212> PRT

<213> Artificial Sequence

<220>

<223> 10C6 LCDR2 (IMGT)

<400> 19

Leu Val Ser
1

Sequence_Listing_13542-016-228

<210> 20
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<220>
 <223> 10C6 LCDR3 (IMGT)

<400> 20
 Gln His Ile Arg Glu Leu Thr Arg Ser
 1 5

<210> 21
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 <223> 7B12 VH

<400> 21
 Gln Val Thr Leu Lys Glu Ser Gly Pro Gly Ile Leu Gln Pro Ser Gln
 1 5 10 15
 Thr Leu Ser Leu Thr Cys Ser Phe Ser Gly Phe Ser Leu Ser Thr Val
 20 25 30
 Gly Met Gly Val Gly Trp Ser Arg Gln Pro Ser Gly Lys Gly Leu Glu
 35 40 45
 Trp Leu Ala His Ile Trp Trp Asp Asp Glu Asp Lys Tyr Tyr Asn Pro
 50 55 60
 Ala Leu Lys Ser Arg Leu Thr Ile Ser Lys Asp Thr Ser Lys Asn Gln
 65 70 75 80
 Val Phe Leu Lys Ile Ala Asn Val Asp Thr Ala Asp Ser Ala Thr Tyr
 85 90 95
 Tyr Cys Thr Arg Ile Gly Thr Ala Gln Ala Thr Asp Ala Leu Asp Tyr
 100 105 110
 Trp Gly Gln Gly Thr Ser Val Thr Val Ser Ser
 115 120

<210> 22
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 <212> PRT
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Sequence_Listing_13542-016-228

<223> 7B12 VL

<400> 22

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

<210> 23

<211> 7

<212> PRT

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<223> 7B12 HCDR1 (KABAT)

<400> 23

Thr	Val	Gly	Met	Gly	Val	Gly
1				5		

<210> 24

<211> 17

<212> PRT

<213> Artificial Sequence

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<223> 7B12 HCDR2 (KABAT)

<400> 24

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

<210> 25

Sequence_Listing_13542-016-228

<211> 12

<212> PRT

<213> Artificial Sequence

<220>

<223> 7B12 HCDR3 (KABAT)

<400> 25

Ile Gly Thr Ala Gln Ala Thr Asp Ala Leu Asp Tyr
1 5 10

<210> 26

<211> 16

<212> PRT

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<220>

<223> 7B12 LCDR1 (KABAT)

<400> 26

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

<210> 27

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> 7B12 LCDR2 (KABAT)

<400> 27

Tyr Met Ser Asn Leu Ala Ser
1 5

<210> 28

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> 7B12 LCDR3 (KABAT)

<400> 28

Met Gln Ser Leu Glu Tyr Pro Leu Thr

1 5

<210> 29
 <211> 9
 <212> PRT
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<220>
 <223> 7B12 HCDR1 (CHOTHIA)

<400> 29
 Gly Phe Ser Leu Ser Thr Val Gly Met
 1 5

<210> 30
 <211> 4
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> 7B12 HCDR2 (CHOTHIA)

<400> 30
 Trp Asp Asp Glu
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<210> 31
 <211> 10
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> 7B12 HCDR3 (CHOTHIA)

<400> 31
 Gly Thr Ala Gln Ala Thr Asp Ala Leu Asp
 1 5 10

<210> 32
 <211> 12
 <212> PRT
 <213> Artificial Sequence

Sequence_Listing_13542-016-228

<220>

<223> 7B12 LCDR1 (CHOTHIA)

<400> 32

Ser Lys Ser Leu Arg Lys Ser Asn Gly Asn Thr Tyr
1 5 10

<210> 33

<211> 3

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<220>

<223> 7B12 LCDR2 (CHOTHIA)

<400> 33

Tyr Met Ser
1

<210> 34

<211> 6

<212> PRT

<213> Artificial Sequence

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<223> 7B12 LCDR3 (CHOTHIA)

<400> 34

Ser Leu Glu Tyr Pro Leu
1 5

<210> 35

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<223> 7B12 HCDR1 (IMGT)

<400> 35

Gly Phe Ser Leu Ser Thr Val Gly Met Gly
1 5 10

<210> 36

Sequence_Listing_13542-016-228

<211> 8

<212> PRT

<213> Artificial Sequence

<220>

<223> 7B12 HCDR2 (IMGT)

<400> 36

Ile Trp Trp Asp Asp Glu Asp Lys
1 5

<210> 37

<211> 14

<212> PRT

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<220>

<223> 7B12 HCDR3 (IMGT)

<400> 37

Thr Arg Ile Gly Thr Ala Gln Ala Thr Asp Ala Leu Asp Tyr
1 5 10

<210> 38

<211> 11

<212> PRT

<213> Artificial Sequence

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<223> 7B12 LCDR1 (IMGT)

<400> 38

Lys Ser Leu Arg Lys Ser Asn Gly Asn Thr Tyr
1 5 10

<210> 39

<211> 3

<212> PRT

<213> Artificial Sequence

<220>

<223> 7B12 LCDR2 (IMGT)

<400> 39

Tyr Met Ser

Sequence_Listing_13542-016-228

1

<210> 40
 <211> 9
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> 7B12 LCDR3 (IMGT)

<400> 40
 Met Gln Ser Leu Glu Tyr Pro Leu Thr
 1 5

<210> 41
 <211> 122
 <212> PRT
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<220>
 <223> 19C11 VH

<400> 41
 Gln Val Asn Leu Lys Glu Ser Gly Pro Gly Lys Leu Gln Pro Ser Gln
 1 5 10 15
 Thr Leu Ser Leu Thr Cys Ser Phe Ser Gly Phe Ser Leu Ser Thr Leu
 20 25 30
 Gly Met Gly Val Gly Trp Ile Arg Gln Ser Ser Gly Lys Gly Leu Glu
 35 40 45
 Trp Leu Ala His Ile Trp Trp Asp Asp Asp Lys Tyr Tyr Asn Pro Ala
 50 55 60
 Leu Lys Ser Arg Leu Thr Ile Ser Arg Ala Thr Ser Lys Asn Gln Val
 65 70 75 80
 Phe Leu Lys Ile Val Asn Val Gly Thr Ala Asp Thr Ala Thr Tyr Tyr
 85 90 95
 Cys Ala Arg Ile Gly Thr Ala Gln Ala Thr Asp Ala Leu Asp Tyr Trp
 100 105 110
 Gly Gln Gly Thr Ser Val Thr Val Ser Ser
 115 120

<210> 42
 <211> 112
 <212> PRT
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Sequence_Listing_13542-016-228

<220>

<223> 19C11 VL

<400> 42

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

<210> 43

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> 19C11 HCDR1 (KABAT)

<400> 43

Thr	Leu	Gly	Met	Gly	Val	Gly
1				5		

<210> 44

<211> 16

<212> PRT

<213> Artificial Sequence

<220>

<223> 19C11 HCDR2 (KABAT)

<400> 44

His	Ile	Trp	Trp	Asp	Asp	Asp	Lys	Tyr	Tyr	Asn	Pro	Ala	Leu	Lys	Ser
1				5				10					15		

<210> 45

<211> 12

Sequence_Listing_13542-016-228

<212> PRT

<213> Artificial Sequence

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<223> 19C11 HCDR3 (KABAT)

<400> 45

Ile Gly Thr Ala Gln Ala Thr Asp Ala Leu Asp Tyr
1 5 10

<210> 46

<211> 16

<212> PRT

<213> Artificial Sequence

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<223> 19C11 LCDR1 (KABAT)

<400> 46

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

<210> 47

<211> 7

<212> PRT

<213> Artificial Sequence

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<223> 19C11 LCDR2 (KABAT)

<400> 47

Tyr Met Ser Asn Leu Ala Ser
1 5

<210> 48

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> 19C11 LCDR3 (KABAT)

<400> 48

Met Gln Gly Leu Glu His Pro Leu Thr
1 5

Sequence_Listing_13542-016-228

<210> 49

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> 19C11 HCDR1 (CHOTHIA)

<400> 49

Gly Phe Ser Leu Ser Thr Leu Gly Met
1 5

<210> 50

<211> 3

<212> PRT

<213> Artificial Sequence

<220>

<223> 19C11 HCDR2 (CHOTHIA)

<400> 50

Trp Asp Asp
1

<210> 51

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<223> 19C11 HCDR3 (CHOTHIA)

<400> 51

Gly Thr Ala Gln Ala Thr Asp Ala Leu Asp
1 5 10

<210> 52

<211> 12

<212> PRT

<213> Artificial Sequence

<220>

<223> 19C11 LCDR1 (CHOTHIA)

Sequence_Listing_13542-016-228

<400> 52

Ser Lys Ser Leu Leu His Ser Asn Gly Asn Thr Tyr
1 5 10

<210> 53

<211> 3

<212> PRT

<213> Artificial Sequence

<220>

<223> 19C11 LCDR2 (CHOTHIA)

<400> 53

Tyr Met Ser
1

<210> 54

<211> 6

<212> PRT

<213> Artificial Sequence

<220>

<223> 19C11 LCDR3 (CHOTHIA)

<400> 54

Gly Leu Glu His Pro Leu
1 5

<210> 55

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<223> 19C11 HCDR1 (IMGT)

<400> 55

Gly Phe Ser Leu Ser Thr Leu Gly Met Gly
1 5 10

<210> 56

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> 19C11 HCDR2 (IMGT)

<400> 56

Ile Trp Trp Asp Asp Asp Lys
1 5

<210> 57

<211> 14

<212> PRT

<213> Artificial Sequence

<220>

<223> 19C11 HCDR3 (IMGT)

<400> 57

Ala Arg Ile Gly Thr Ala Gln Ala Thr Asp Ala Leu Asp Tyr
1 5 10

<210> 58

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> 19C11 LCDR1 (IMGT)

<400> 58

Lys Ser Leu Leu His Ser Asn Gly Asn Thr Tyr
1 5 10

<210> 59

<211> 3

<212> PRT

<213> Artificial Sequence

<220>

<223> 19C11 LCDR2 (IMGT)

<400> 59

Tyr Met Ser
1

Sequence_Listing_13542-016-228

<210> 60

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> 19C11 LCDR3 (IMGT)

<400> 60

Met Gln Gly Leu Glu His Pro Leu Thr

1

5

<210> 61

<211> 122

<212> PRT

<213> Artificial Sequence

<220>

<223> 16C5 VH

<400> 61

Gln Val Thr Leu Lys Glu Ser Gly Pro Gly Ile Leu Gln Pro Ser Gln

1

5

10

15

Thr Leu Ser Leu Thr Cys Ser Phe Ser Gly Phe Ser Leu Asn Thr Leu

20

25

30

Gly Met Gly Val Gly Trp Ile Arg Gln Pro Ser Gly Lys Gly Leu Glu

35

40

45

Trp Leu Ala His Ile Trp Trp Asp Asp Asp Lys Tyr Tyr Tyr Pro Ala

50

55

60

Leu Lys Ser Arg Leu Thr Ile Ser Arg Asp Thr Ser Lys Asn Gln Val

65

70

75

80

Phe Leu Lys Ile Ala Asn Val Asp Thr Ala Asp Thr Ala Thr Tyr Tyr

85

90

95

Cys Ala Arg Ile Gly Thr Ala Gln Ala Thr Asp Ala Leu Asp Tyr Trp

100

105

110

Gly Gln Gly Thr Ser Val Thr Val Ser Ser

115

120

<210> 62

<211> 109

<212> PRT

<213> Artificial Sequence

<220>

<223> 16C5 VL

Sequence_Listing_13542-016-228

<400> 62

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

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<210> 63

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> 16C5 HCDR1 (KABAT)

<400> 63

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Thr Leu Gly Met Gly Val Gly
 1           5

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<210> 64

<211> 16

<212> PRT

<213> Artificial Sequence

<220>

<223> 16C5 HCDR2 (KABAT)

<400> 64

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His Ile Trp Trp Asp Asp Asp Lys Tyr Tyr Tyr Pro Ala Leu Lys Ser
 1           5           10           15

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<210> 65

<211> 12

<212> PRT

<213> Artificial Sequence

Sequence_Listing_13542-016-228

<220>

<223> 16C5 HCDR3 (KABAT)

<400> 65

Ile Gly Thr Ala Gln Ala Thr Asp Ala Leu Asp Tyr
1 5 10

<210> 66

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> 16C5 LCDR1 (KABAT)

<400> 66

Leu Ala Ser Glu Asp Ile Tyr Ser Gly Ile Ser
1 5 10

<210> 67

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> 16C5 LCDR2 (KABAT)

<400> 67

Gly Ala Ser Asn Leu Glu Ser
1 5

<210> 68

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> 16C5 LCDR3 (KABAT)

<400> 68

Leu Gly Gly Tyr Ser Tyr Ser Ser Thr Leu Thr
1 5 10

Sequence_Listing_13542-016-228

<210> 69

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> 16C5 HCDR1 (CHOTHIA)

<400> 69

Gly Phe Ser Leu Asn Thr Leu Gly Met

1

5

<210> 70

<211> 3

<212> PRT

<213> Artificial Sequence

<220>

<223> 16C5 HCDR2 (CHOTHIA)

<400> 70

Trp Asp Asp

1

<210> 71

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<223> 16C5 HCDR3 (CHOTHIA)

<400> 71

Gly Thr Ala Gln Ala Thr Asp Ala Leu Asp

1

5

10

<210> 72

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> 16C5 LCDR1 (CHOTHIA)

<400> 72

Ser Glu Asp Ile Tyr Ser Gly
1 5

<210> 73
<211> 3
<212> PRT
<213> Artificial Sequence

<220>
<223> 16C5 LCDR2 (CH0THIA)

<400> 73
Gly Ala Ser
1

<210> 74
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> 16C5 LCDR3 (CH0THIA)

<400> 74
Gly Tyr Ser Tyr Ser Ser Thr Leu
1 5

<210> 75
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> 16C5 HCDR1 (IMGT)

<400> 75
Gly Phe Ser Leu Asn Thr Leu Gly Met Gly
1 5 10

<210> 76
<211> 7
<212> PRT
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Sequence_Listing_13542-016-228

<220>

<223> 16C5 HCDR2 (IMGT)

<400> 76

Ile Trp Trp Asp Asp Asp Lys

1

5

<210> 77

<211> 14

<212> PRT

<213> Artificial Sequence

<220>

<223> 16C5 HCDR3 (IMGT)

<400> 77

Ala Arg Ile Gly Thr Ala Gln Ala Thr Asp Ala Leu Asp Tyr

1

5

10

<210> 78

<211> 6

<212> PRT

<213> Artificial Sequence

<220>

<223> 16C5 LCDR1 (IMGT)

<400> 78

Glu Asp Ile Tyr Ser Gly

1

5

<210> 79

<211> 3

<212> PRT

<213> Artificial Sequence

<220>

<223> 16C5 LCDR2 (IMGT)

<400> 79

Gly Ala Ser

1

<210> 80

Sequence_Listing_13542-016-228

<211> 11
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> 16C5 LCDR3 (IMGT)

<400> 80
 Leu Gly Gly Tyr Ser Tyr Ser Ser Thr Leu Thr
 1 5 10

<210> 81
 <211> 123
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> 18C6 VH

<400> 81
 Gln Val Thr Leu Lys Glu Ser Gly Pro Gly Ile Leu Gln Pro Ser Gln
 1 5 10 15
 Thr Leu Ser Leu Thr Cys Ser Phe Ser Gly Phe Ser Leu Ser Thr Val
 20 25 30
 Gly Met Gly Val Gly Trp Ser Arg Gln Pro Ser Gly Lys Gly Leu Glu
 35 40 45
 Trp Leu Ala His Ile Trp Trp Asp Asp Glu Asp Lys Tyr Tyr Asn Pro
 50 55 60
 Ala Leu Lys Ser Arg Leu Thr Ile Ser Lys Asp Thr Ser Lys Asn Gln
 65 70 75 80
 Val Phe Leu Lys Ile Ala Asn Val Asp Thr Ala Asp Thr Ala Thr Tyr
 85 90 95
 Tyr Cys Thr Arg Ile Gly Thr Ala Gln Ala Thr Asp Ala Leu Asp Tyr
 100 105 110
 Trp Gly Gln Gly Thr Ser Val Thr Val Ser Ser
 115 120

<210> 82
 <211> 112
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> 18C6 VL

<400> 82

Sequence_Listing_13542-016-228

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

<210> 83

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> 18C6 HCDR1 (KABAT)

<400> 83

Thr Val Gly Met Gly Val Gly

1

5

<210> 84

<211> 17

<212> PRT

<213> Artificial Sequence

<220>

<223> 18C6 HCDR2 (KABAT)

<400> 84

His Ile Trp Trp Asp Asp Glu Asp Lys Tyr Tyr Asn Pro Ala Leu Lys

1

5

10

15

Ser

<210> 85

<211> 12

<212> PRT

<213> Artificial Sequence

Sequence_Listing_13542-016-228

<220>

<223> 18C6 HCDR3 (KABAT)

<400> 85

Ile Gly Thr Ala Gln Ala Thr Asp Ala Leu Asp Tyr
1 5 10

<210> 86

<211> 16

<212> PRT

<213> Artificial Sequence

<220>

<223> 18C6 LCDR1 (KABAT)

<400> 86

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

<210> 87

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> 18C6 LCDR2 (KABAT)

<400> 87

Tyr Met Ser Asn Leu Ala Ser
1 5

<210> 88

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> 18C6 LCDR3 (KABAT)

<400> 88

Met Gln Ser Leu Glu Tyr Pro Leu Thr
1 5

Sequence_Listing_13542-016-228

<210> 89

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> 18C6 HCDR1 (CHOTHIA)

<400> 89

Gly Phe Ser Leu Ser Thr Val Gly Met

1

5

<210> 90

<211> 4

<212> PRT

<213> Artificial Sequence

<220>

<223> 18C6 HCDR2 (CHOTHIA)

<400> 90

Trp Asp Asp Glu

1

<210> 91

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<223> 18C6 HCDR3 (CHOTHIA)

<400> 91

Gly Thr Ala Gln Ala Thr Asp Ala Leu Asp

1

5

10

<210> 92

<211> 12

<212> PRT

<213> Artificial Sequence

<220>

<223> 18C6 LCDR1 (CHOTHIA)

<400> 92

Sequence_Listing_13542-016-228

Ser Lys Ser Leu Leu His Ser Asn Gly Asn Thr Tyr
 1 5 10

<210> 93
 <211> 3
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> 18C6 LCDR2 (CHOTHIA)

<400> 93
 Tyr Met Ser
 1

<210> 94
 <211> 6
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> 18C6 LCDR3 (CHOTHIA)

<400> 94
 Ser Leu Glu Tyr Pro Leu
 1 5

<210> 95
 <211> 10
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> 18C6 HCDR1 (IMGT)

<400> 95
 Gly Phe Ser Leu Ser Thr Val Gly Met Gly
 1 5 10

<210> 96
 <211> 8
 <212> PRT
 <213> Artificial Sequence

Sequence_Listing_13542-016-228

<220>

<223> 18C6 HCDR2 (IMGT)

<400> 96

Ile Trp Trp Asp Asp Glu Asp Lys

1

5

<210> 97

<211> 14

<212> PRT

<213> Artificial Sequence

<220>

<223> 18C6 HCDR3 (IMGT)

<400> 97

Thr Arg Ile Gly Thr Ala Gln Ala Thr Asp Ala Leu Asp Tyr

1

5

10

<210> 98

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> 18C6 LCDR1 (IMGT)

<400> 98

Lys Ser Leu Leu His Ser Asn Gly Asn Thr Tyr

1

5

10

<210> 99

<211> 3

<212> PRT

<213> Artificial Sequence

<220>

<223> 18C6 LCDR2 (IMGT)

<400> 99

Tyr Met Ser

1

<210> 100

Sequence_Listing_13542-016-228

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> 18C6 LCDR3 (IMGT)

<400> 100

Met Gln Ser Leu Glu Tyr Pro Leu Thr
1 5

<210> 101

<211> 123

<212> PRT

<213> Artificial Sequence

<220>

<223> 10C6-18C6 VH consensus

<220>

<221> VARIANT

<222> 3

<223> Xaa = Thr or Asn

<220>

<221> VARIANT

<222> 11

<223> Xaa = Ile or Lys

<220>

<221> VARIANT

<222> 30

<223> Xaa = Asn or Ser

<220>

<221> VARIANT

<222> 32

<223> Xaa = Val or Leu

<220>

<221> VARIANT

<222> 39

<223> Xaa = Ser or Ile

<220>

<221> VARIANT

<222> 42

<223> Xaa = Pro or Ser

<220>

<221> VARIANT

<222> 58

<223> Xaa = Glu or absent

<220>

<221> VARIANT

<222> 63

<223> Xaa = Asn or Tyr

<220>

<221> VARIANT

<222> 74

<223> Xaa = Lys or Arg

<220>

<221> VARIANT

<222> 75

<223> Xaa = Ala or Asp

<220>

<221> VARIANT

<222> 76

<223> Xaa = Thr or Ser

<220>

<221> VARIANT

<222> 86

<223> Xaa = Val or Ala

<220>

<221> VARIANT

<222> 89

<223> Xaa = Gly or Asp

<220>

<221> VARIANT

<222> 93

<223> Xaa = Thr, Ile or Ser

<220>

<221> VARIANT

<222> 99

<223> Xaa = Thr, Ser or Ala

<400> 101

Sequence_Listing_13542-016-228

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

<210> 102

<211> 112

<212> PRT

<213> Artificial Sequence

<220>

<223> 7B12, 19C11, 18C6 VL consensus

<220>

<221> VARIANT

<222> 11

<223> Xaa = Ile or Val

<220>

<221> VARIANT

<222> 12

<223> Xaa = Pro or Ser

<220>

<221> VARIANT

<222> 30

<223> Xaa = Arg or Leu

<220>

<221> VARIANT

<222> 31

<223> Xaa = Lys or His

<220>

<221> VARIANT

Sequence_Listing_13542-016-228

<222> 79

<223> Xaa = Arg or Lys

<220>

<221> VARIANT

<222> 86

<223> Xaa = Glu or Gly

<220>

<221> VARIANT

<222> 96

<223> Xaa = Ser or Gly

<220>

<221> VARIANT

<222> 99

<223> Xaa = Tyr or His

<400> 102

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

<210> 103

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> HCDR1 KABAT CONSENSUS

<220>

<221> VARIANT

<222> 2

<223> Xaa = Lue or Val

Sequence_Listing_13542-016-228

<400> 103

Thr Xaa Gly Met Gly Val Gly
1 5

<210> 104

<211> 17

<212> PRT

<213> Artificial Sequence

<220>

<223> HCDR2 KABAT CONSENSUS

<220>

<221> VARIANT

<222> 7

<223> Xaa = Glu or Absent

<220>

<221> VARIANT

<222> 12

<223> Xaa = Tyr or Asn

<400> 104

His Ile Trp Trp Asp Asp Xaa Asp Lys Tyr Tyr Xaa Pro Ala Leu Lys
1 5 10 15
Ser

<210> 105

<211> 12

<212> PRT

<213> Artificial Sequence

<220>

<223> HCDR3 KABAT CONSENSUS

<400> 105

Ile Gly Thr Ala Gln Ala Thr Asp Ala Leu Asp Tyr
1 5 10

<210> 106

<211> 16

<212> PRT

<213> Artificial Sequence

Sequence_Listing_13542-016-228

<220>

<223> 7B12, 19C11, 18C6 LCDR2 KABAT CONSENSUS

<220>

<221> VARIANT

<222> 7

<223> Xaa = Arg or Leu

<220>

<221> VARIANT

<222> 8

<223> Xaa = Lys or His

<400> 106

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

<210> 107

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> 7B12, 19C11, 18C6 LCDR2 KABAT CONSENSUS

<400> 107

Tyr	Met	Ser	Asn	Leu	Ala	Ser
1				5		

<210> 108

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> 7B12, 19C11, 18C6 LCDR3 KABAT CONSENSUS

<220>

<221> VARIANT

<222> 3

<223> Xaa = Gly or Ser

<220>

<221> VARIANT

<222> 6

<223> Xaa = His or Tyr

Sequence_Listing_13542-016-228

<400> 108

Met Gln Xaa Leu Glu Xaa Pro Leu Thr

1

5

<210> 109

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> 10C6-18C6 HCDR1 CHOTHIA CONSENSUS

<220>

<221> VARIANT

<222> 5

<223> Xaa = Asn or Ser

<220>

<221> VARIANT

<222> 7

<223> Xaa = Leu or Val

<400> 109

Gly Phe Ser Leu Xaa Thr Xaa Gly Met

1

5

<210> 110

<211> 4

<212> PRT

<213> Artificial Sequence

<220>

<223> 10C6-18C6 HCDR2 CHOTHIA CONSENSUS

<220>

<221> VARIANT

<222> 4

<223> Xaa = Glu or Absent

<400> 110

Trp Asp Asp Xaa

1

<210> 111

Sequence_Listing_13542-016-228

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<223> 10C6-18C6 HCDR3 CHOTHIA CONSENSUS

<400> 111

Gly Thr Ala Gln Ala Thr Asp Ala Leu Asp
1 5 10

<210> 112

<211> 12

<212> PRT

<213> Artificial Sequence

<220>

<223> 7B12, 19C11, 18C6 LCDR1 CHOTHIA CONSENSUS

<220>

<221> VARIANT

<222> 5

<223> Xaa = Leu or Arg

<220>

<221> VARIANT

<222> 6

<223> Xaa = His or Lys

<400> 112

Ser Lys Ser Leu Xaa Xaa Ser Asn Gly Asn Thr Tyr
1 5 10

<210> 113

<211> 3

<212> PRT

<213> Artificial Sequence

<220>

<223> 7B12, 19C11, 18C6 LCDR2 CHOTHIA CONSENSUS

<400> 113

Tyr Met Ser
1

Sequence_Listing_13542-016-228

<210> 114

<211> 6

<212> PRT

<213> Artificial Sequence

<220>

<223> 7B12, 19C11, 18C6 LCDR3 CHOTHIA CONSENSUS

<220>

<221> VARIANT

<222> 1

<223> Xaa = Gly or Ser

<220>

<221> VARIANT

<222> 4

<223> Xaa = His or Tyr

<400> 114

Xaa	Leu	Glu	Xaa	Pro	Leu
1				5	

<210> 115

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<223> 10C6-18C6 HCDR1 IMGT CONSENSUS

<220>

<221> VARIANT

<222> 5

<223> Xaa = Asn or Ser

<220>

<221> VARIANT

<222> 7

<223> Xaa = Val or Leu

<400> 115

Gly	Phe	Ser	Leu	Xaa	Thr	Xaa	Gly	Met	Gly
1				5					10

<210> 116

<211> 8

Sequence_Listing_13542-016-228

<212> PRT

<213> Artificial Sequence

<220>

<223> 10C6-18C6 HCDR2 IMGT CONSENSUS

<220>

<221> VARIANT

<222> 6

<223> Xaa = Glu or Absent

<400> 116

Ile Trp Trp Asp Asp Xaa Asp Lys

1 5

<210> 117

<211> 14

<212> PRT

<213> Artificial Sequence

<220>

<223> 10C6-18C6 HCDR3 IMGT CONSENSUS

<220>

<221> VARIANT

<222> 1

<223> Xaa = Thr, Ala or Ser

<400> 117

Xaa Arg Ile Gly Thr Ala Gln Ala Thr Asp Ala Leu Asp Tyr

1 5 10

<210> 118

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> 7B12, 19C11, 18C6 LCDR1 IMGT CONSENSUS

<220>

<221> VARIANT

<222> 4

<223> Xaa = Val or Leu

<220>

Sequence_Listing_13542-016-228

<221> VARIANT

<222> 5

<223> Xaa = His or Lys

<400> 118

Lys Ser Leu Xaa Xaa Ser Asn Gly Asn Thr Tyr
1 5 10

<210> 119

<211> 3

<212> PRT

<213> Artificial Sequence

<220>

<223> 7B12, 19C11, 18C6 LCDR2 IMGT CONSENSUS

<400> 119

Tyr Met Ser
1

<210> 120

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> 7B12, 19C11, 18C6 LCDR3 IMGT CONSENSUS

<400> 120

Met Gln Ser Leu Glu Tyr Pro Leu Thr
1 5

<210> 121

<211> 42

<212> PRT

<213> Artificial Sequence

<220>

<223> MUC16c114 F primer

<400> 121

Cys Cys Ala Thr Gly Cys Gly Ala Thr Ala Thr Cys Gly Cys Cys Ala
1 5 10 15
Cys Cys Ala Thr Gly Gly Thr Gly Ala Ala Cys Thr Thr Cys Thr Cys
20 25 30

Sequence_Listing_13542-016-228

Gly Cys Cys Ala Cys Thr Gly Gly Cys Thr
35 40

<210> 122

<211> 34

<212> PRT

<213> Artificial Sequence

<220>

<223> MUC16c114 R primer

<400> 122

Thr Ala Cys Gly Gly Cys Gly Gly Cys Cys Gly Cys Thr Thr Gly Cys
1 5 10 15
Ala Gly Ala Thr Cys Cys Thr Cys Cys Ala Gly Gly Thr Cys Thr Ala
20 25 30
Gly Gly

<210> 123

<211> 45

<212> PRT

<213> Artificial Sequence

<220>

<223> MUC16c344 F primer

<400> 123

Cys Cys Ala Thr Gly Cys Gly Ala Thr Ala Thr Cys Gly Cys Cys Ala
1 5 10 15
Cys Cys Ala Thr Gly Gly Thr Gly Ala Cys Ala Gly Gly Cys Cys Cys
20 25 30
Thr Gly Gly Gly Cys Thr Gly Gly Ala Cys Ala Gly Ala
35 40 45

<210> 124

<211> 34

<212> PRT

<213> Artificial Sequence

<220>

<223> MUC16c344 R primer

<400> 124

Thr Ala Cys Gly Gly Cys Gly Gly Cys Cys Gly Cys Thr Thr Gly Cys

Sequence_Listing_13542-016-228

```

1           5           10           15
Ala Gly Ala Thr Cys Cys Thr Cys Cys Ala Gly Gly Thr Cys Thr Ala
      20           25           30
Gly Gly

```

<210> 125
 <211> 31
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> MUC16c57-114 F primer

```

<400> 125
Cys Cys Ala Thr Gly Cys Gly Ala Thr Ala Thr Cys Ala Ala Ala Cys
1           5           10           15
Thr Thr Cys Thr Cys Gly Cys Cys Ala Cys Thr Gly Gly Cys Thr
      20           25           30

```

<210> 126
 <211> 33
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> MUC16c57-114 R primer

```

<400> 126
Ala Gly Ala Thr Cys Thr Ala Ala Cys Cys Ala Thr Gly Gly Gly Ala
1           5           10           15
Ala Gly Gly Thr Cys Ala Gly Ala Ala Thr Thr Cys Cys Cys Ala Gly
      20           25           30
Thr

```

<210> 127
 <211> 31
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> 117-244LGALS3 F primer

<400> 127

Sequence_Listing_13542-016-228

Cys Cys Ala Thr Gly Cys Gly Ala Thr Ala Thr Cys Ala Cys Cys Thr
 1 5 10 15
 Thr Ala Thr Ala Ala Cys Cys Thr Gly Cys Cys Thr Thr Thr Gly
 20 25 30

<210> 128

<211> 30

<212> PRT

<213> Artificial Sequence

<220>

<223> 117-244LGALS3 R primer

<400> 128

Ala Gly Ala Thr Cys Thr Ala Ala Cys Cys Ala Thr Gly Gly Thr Ala
 1 5 10 15
 Thr Ala Thr Gly Ala Ala Gly Cys Ala Cys Thr Gly Gly Thr
 20 25 30

<210> 129

<211> 55

<212> PRT

<213> Artificial Sequence

<220>

<223> 55mer immunizing peptide

<400> 129

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

<210> 130

<211> 18

<212> PRT

<213> Artificial Sequence

<220>

<223> 18mer immunizing peptide

Sequence_Listing_13542-016-228

<400> 130

Cys Thr Arg Asn Gly Thr Gln Leu Gln Asn Phe Thr Leu Asp Arg Ser
 1 5 10 15
 Ser Val

<210> 131

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> 15mer immunizing peptide

<400> 131

Cys Gly Thr Gln Leu Gln Asn Phe Thr Leu Asp Arg Ser Ser Val
 1 5 10 15

<210> 132

<211> 344

<212> PRT

<213> Artificial Sequence

<220>

<223> MUC16c344

<400> 132

Trp Glu Leu Ser Gln Leu Thr His Gly Val Thr Gln Leu Gly Phe Tyr
 1 5 10 15
 Val Leu Asp Arg Asp Ser Leu Phe Ile Asn Gly Tyr Ala Pro Gln Asn
 20 25 30
 Leu Ser Ile Arg Gly Glu Tyr Gln Ile Asn Phe His Ile Val Asn Gln
 35 40 45
 Asn Leu Ser Asn Pro Asp Pro Thr Ser Ser Glu Tyr Ile Thr Leu Leu
 50 55 60
 Arg Asp Ile Gln Asp Lys Val Thr Thr Leu Tyr Lys Gly Ser Gln Leu
 65 70 75 80
 His Asp Thr Phe Arg Phe Cys Leu Val Thr Asn Leu Thr Met Asp Ser
 85 90 95
 Val Leu Val Thr Val Lys Ala Leu Phe Ser Ser Asn Leu Asp Pro Ser
 100 105 110
 Leu Val Glu Gln Val Phe Leu Asp Lys Thr Leu Asn Ala Ser Phe His
 115 120 125
 Gln Leu Gly Ser Thr Tyr Gln Leu Val Asp Ile His Val Thr Glu Met
 130 135 140
 Glu Ser Ser Val Tyr Gln Pro Thr Ser Ser Ser Ser Thr Gln His Phe

Sequence_Listing_13542-016-228

145					150					155					160
Tyr	Leu	Asn	Phe	Thr	Ile	Thr	Asn	Leu	Pro	Tyr	Ser	Gln	Asp	Lys	Ala
				165						170					175
Gln	Pro	Gly	Thr	Thr	Asn	Tyr	Gln	Arg	Asn	Lys	Arg	Asn	Ile	Glu	Asp
			180					185					190		
Ala	Leu	Asn	Gln	Leu	Phe	Arg	Asn	Ser	Ser	Ile	Lys	Ser	Tyr	Phe	Ser
		195					200					205			
Asp	Cys	Gln	Val	Ser	Thr	Phe	Arg	Ser	Val	Pro	Asn	Arg	His	His	Thr
	210					215					220				
Gly	Val	Asp	Ser	Leu	Cys	Asn	Phe	Ser	Pro	Leu	Ala	Arg	Arg	Val	Asp
225					230					235					240
Arg	Val	Ala	Ile	Tyr	Glu	Glu	Phe	Leu	Arg	Met	Thr	Arg	Asn	Gly	Thr
			245						250					255	
Gln	Leu	Gln	Asn	Phe	Thr	Leu	Asp	Arg	Ser	Ser	Val	Leu	Val	Asp	Gly
			260					265					270		
Tyr	Ser	Pro	Asn	Arg	Asn	Glu	Pro	Leu	Thr	Gly	Asn	Ser	Asp	Leu	Pro
		275					280					285			
Phe	Trp	Ala	Val	Ile	Leu	Ile	Gly	Leu	Ala	Gly	Leu	Leu	Gly	Leu	Ile
	290					295					300				
Thr	Cys	Leu	Ile	Cys	Gly	Val	Leu	Val	Thr	Thr	Arg	Arg	Arg	Lys	Lys
305					310					315					320
Glu	Gly	Glu	Tyr	Asn	Val	Gln	Gln	Gln	Cys	Pro	Gly	Tyr	Tyr	Gln	Ser
				325					330					335	
His	Leu	Asp	Leu	Glu	Asp	Leu	Gln								
			340												

<210> 133

<211> 114

<212> PRT

<213> Artificial Sequence

<220>

<223> MUC16c114

<400> 133

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

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Gln Gln Gln Cys Pro Gly Tyr Tyr Gln Ser His Leu Asp Leu Glu Asp
 100 105 110
 Leu Gln

<210> 134
 <211> 80
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> MUC16c86

<400> 134
 Asn Phe Ser Pro Leu Ala Arg Arg Val Asp Arg Val Ala Ile Tyr Glu
 1 5 10 15
 Glu Phe Leu Arg Met Asp Leu Pro Phe Trp Ala Val Ile Leu Ile Gly
 20 25 30
 Leu Ala Gly Leu Leu Gly Leu Ile Thr Cys Leu Ile Cys Gly Val Leu
 35 40 45
 Val Thr Thr Arg Arg Arg Lys Lys Glu Gly Glu Tyr Asn Val Gln Gln
 50 55 60
 Gln Cys Pro Gly Tyr Tyr Gln Ser His Leu Asp Leu Glu Asp Leu Gln
 65 70 75 80

<210> 135
 <211> 86
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> MUC16c80

<400> 135
 Asn Phe Ser Pro Leu Ala Arg Arg Val Asp Arg Val Ala Ile Tyr Glu
 1 5 10 15
 Glu Phe Leu Arg Met Thr Arg Asn Gly Thr Gln Leu Gln Asn Phe Thr
 20 25 30
 Leu Asp Arg Ser Ser Val Leu Val Asp Gly Tyr Ser Pro Asn Arg Asn
 35 40 45
 Glu Pro Leu Thr Gly Asn Ser Asp Leu Pro Phe Trp Ala Val Ile Leu
 50 55 60
 Ile Gly Leu Ala Gly Leu Leu Gly Leu Ile Thr Cys Leu Ile Cys Gly
 65 70 75 80
 Asp Leu Glu Asp Leu Gln
 85

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<210> 136
 <211> 14507
 <212> PRT
 <213> Homo sapiens

<220>
 <223> Immature Human MUC16 amino acid sequence (NP_078966.2)

<400> 136

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Met Leu Lys Pro Ser Gly Leu Pro Gly Ser Ser Ser Pro Thr Arg Ser
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Leu Met Thr Gly Ser Arg Ser Thr Lys Ala Thr Pro Glu Met Asp Ser
      20      25      30
Gly Leu Thr Gly Ala Thr Leu Ser Pro Lys Thr Ser Thr Gly Ala Ile
      35      40      45
Val Val Thr Glu His Thr Leu Pro Phe Thr Ser Pro Asp Lys Thr Leu
      50      55      60
Ala Ser Pro Thr Ser Ser Val Val Gly Arg Thr Thr Gln Ser Leu Gly
65      70      75      80
Val Met Ser Ser Ala Leu Pro Glu Ser Thr Ser Arg Gly Met Thr His
      85      90      95
Ser Glu Gln Arg Thr Ser Pro Ser Leu Ser Pro Gln Val Asn Gly Thr
      100     105     110
Pro Ser Arg Asn Tyr Pro Ala Thr Ser Met Val Ser Gly Leu Ser Ser
      115     120     125
Pro Arg Thr Arg Thr Ser Ser Thr Glu Gly Asn Phe Thr Lys Glu Ala
      130     135     140
Ser Thr Tyr Thr Leu Thr Val Glu Thr Thr Ser Gly Pro Val Thr Glu
145      150      155      160
Lys Tyr Thr Val Pro Thr Glu Thr Ser Thr Thr Glu Gly Asp Ser Thr
      165      170      175
Glu Thr Pro Trp Asp Thr Arg Tyr Ile Pro Val Lys Ile Thr Ser Pro
      180      185      190
Met Lys Thr Phe Ala Asp Ser Thr Ala Ser Lys Glu Asn Ala Pro Val
      195     200     205
Ser Met Thr Pro Ala Glu Thr Thr Val Thr Asp Ser His Thr Pro Gly
      210     215     220
Arg Thr Asn Pro Ser Phe Gly Thr Leu Tyr Ser Ser Phe Leu Asp Leu
225      230      235      240
Ser Pro Lys Gly Thr Pro Asn Ser Arg Gly Glu Thr Ser Leu Glu Leu
      245     250     255
Ile Leu Ser Thr Thr Gly Tyr Pro Phe Ser Ser Pro Glu Pro Gly Ser
      260     265     270
Ala Gly His Ser Arg Ile Ser Thr Ser Ala Pro Leu Ser Ser Ser Ala
      275     280     285
    
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Ser	Val	Leu	Asp	Asn	Lys	Ile	Ser	Glu	Thr	Ser	Ile	Phe	Ser	Gly	Gln
290						295					300				
Ser	Leu	Thr	Ser	Pro	Leu	Ser	Pro	Gly	Val	Pro	Glu	Ala	Arg	Ala	Ser
305					310					315					320
Thr	Met	Pro	Asn	Ser	Ala	Ile	Pro	Phe	Ser	Met	Thr	Leu	Ser	Asn	Ala
				325					330					335	
Glu	Thr	Ser	Ala	Glu	Arg	Val	Arg	Ser	Thr	Ile	Ser	Ser	Leu	Gly	Thr
			340					345					350		
Pro	Ser	Ile	Ser	Thr	Lys	Gln	Thr	Ala	Glu	Thr	Ile	Leu	Thr	Phe	His
		355					360					365			
Ala	Phe	Ala	Glu	Thr	Met	Asp	Ile	Pro	Ser	Thr	His	Ile	Ala	Lys	Thr
		370				375					380				
Leu	Ala	Ser	Glu	Trp	Leu	Gly	Ser	Pro	Gly	Thr	Leu	Gly	Gly	Thr	Ser
385					390					395					400
Thr	Ser	Ala	Leu	Thr	Thr	Thr	Ser	Pro	Ser	Thr	Thr	Leu	Val	Ser	Glu
				405					410					415	
Glu	Thr	Asn	Thr	His	His	Ser	Thr	Ser	Gly	Lys	Glu	Thr	Glu	Gly	Thr
			420					425					430		
Leu	Asn	Thr	Ser	Met	Thr	Pro	Leu	Glu	Thr	Ser	Ala	Pro	Gly	Glu	Glu
		435					440					445			
Ser	Glu	Met	Thr	Ala	Thr	Leu	Val	Pro	Thr	Leu	Gly	Phe	Thr	Thr	Leu
	450					455					460				
Asp	Ser	Lys	Ile	Arg	Ser	Pro	Ser	Gln	Val	Ser	Ser	Ser	His	Pro	Thr
465					470					475					480
Arg	Glu	Leu	Arg	Thr	Thr	Gly	Ser	Thr	Ser	Gly	Arg	Gln	Ser	Ser	Ser
				485					490					495	
Thr	Ala	Ala	His	Gly	Ser	Ser	Asp	Ile	Leu	Arg	Ala	Thr	Thr	Ser	Ser
			500					505					510		
Thr	Ser	Lys	Ala	Ser	Ser	Trp	Thr	Ser	Glu	Ser	Thr	Ala	Gln	Gln	Phe
		515					520					525			
Ser	Glu	Pro	Gln	His	Thr	Gln	Trp	Val	Glu	Thr	Ser	Pro	Ser	Met	Lys
		530				535					540				
Thr	Glu	Arg	Pro	Pro	Ala	Ser	Thr	Ser	Val	Ala	Ala	Pro	Ile	Thr	Thr
545					550					555					560
Ser	Val	Pro	Ser	Val	Val	Ser	Gly	Phe	Thr	Thr	Leu	Lys	Thr	Ser	Ser
				565					570					575	
Thr	Lys	Gly	Ile	Trp	Leu	Glu	Glu	Thr	Ser	Ala	Asp	Thr	Leu	Ile	Gly
			580					585					590		
Glu	Ser	Thr	Ala	Gly	Pro	Thr	Thr	His	Gln	Phe	Ala	Val	Pro	Thr	Gly
		595					600					605			
Ile	Ser	Met	Thr	Gly	Gly	Ser	Ser	Thr	Arg	Gly	Ser	Gln	Gly	Thr	Thr
		610				615					620				
His	Leu	Leu	Thr	Arg	Ala	Thr	Ala	Ser	Ser	Glu	Thr	Ser	Ala	Asp	Leu
625					630					635					640
Thr	Leu	Ala	Thr	Asn	Gly	Val	Pro	Val	Ser	Val	Ser	Pro	Ala	Val	Ser
				645					650					655	
Lys	Thr	Ala	Ala	Gly	Ser	Ser	Pro	Pro	Gly	Gly	Thr	Lys	Pro	Ser	Tyr
			660					665					670		

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Thr	Met	Val	Ser	Ser	Val	Ile	Pro	Glu	Thr	Ser	Ser	Leu	Gln	Ser	Ser	675	680	685
Ala	Phe	Arg	Glu	Gly	Thr	Ser	Leu	Gly	Leu	Thr	Pro	Leu	Asn	Thr	Arg	690	695	700
His	Pro	Phe	Ser	Ser	Pro	Glu	Pro	Asp	Ser	Ala	Gly	His	Thr	Lys	Ile	705	710	715
Ser	Thr	Ser	Ile	Pro	Leu	Leu	Ser	Ser	Ala	Ser	Val	Leu	Glu	Asp	Lys	725	730	735
Val	Ser	Ala	Thr	Ser	Thr	Phe	Ser	His	His	Lys	Ala	Thr	Ser	Ser	Ile	740	745	750
Thr	Thr	Gly	Thr	Pro	Glu	Ile	Ser	Thr	Lys	Thr	Lys	Pro	Ser	Ser	Ala	755	760	765
Val	Leu	Ser	Ser	Met	Thr	Leu	Ser	Asn	Ala	Ala	Thr	Ser	Pro	Glu	Arg	770	775	780
Val	Arg	Asn	Ala	Thr	Ser	Pro	Leu	Thr	His	Pro	Ser	Pro	Ser	Gly	Glu	785	790	795
Glu	Thr	Ala	Gly	Ser	Val	Leu	Thr	Leu	Ser	Thr	Ser	Ala	Glu	Thr	Thr	805	810	815
Asp	Ser	Pro	Asn	Ile	His	Pro	Thr	Gly	Thr	Leu	Thr	Ser	Glu	Ser	Ser	820	825	830
Glu	Ser	Pro	Ser	Thr	Leu	Ser	Leu	Pro	Ser	Val	Ser	Gly	Val	Lys	Thr	835	840	845
Thr	Phe	Ser	Ser	Ser	Thr	Pro	Ser	Thr	His	Leu	Phe	Thr	Ser	Gly	Glu	850	855	860
Glu	Thr	Glu	Glu	Thr	Ser	Asn	Pro	Ser	Val	Ser	Gln	Pro	Glu	Thr	Ser	865	870	875
Val	Ser	Arg	Val	Arg	Thr	Thr	Leu	Ala	Ser	Thr	Ser	Val	Pro	Thr	Pro	885	890	895
Val	Phe	Pro	Thr	Met	Asp	Thr	Trp	Pro	Thr	Arg	Ser	Ala	Gln	Phe	Ser	900	905	910
Ser	Ser	His	Leu	Val	Ser	Glu	Leu	Arg	Ala	Thr	Ser	Ser	Thr	Ser	Val	915	920	925
Thr	Asn	Ser	Thr	Gly	Ser	Ala	Leu	Pro	Lys	Ile	Ser	His	Leu	Thr	Gly	930	935	940
Thr	Ala	Thr	Met	Ser	Gln	Thr	Asn	Arg	Asp	Thr	Phe	Asn	Asp	Ser	Ala	945	950	955
Ala	Pro	Gln	Ser	Thr	Thr	Trp	Pro	Glu	Thr	Ser	Pro	Arg	Phe	Lys	Thr	965	970	975
Gly	Leu	Pro	Ser	Ala	Thr	Thr	Thr	Val	Ser	Thr	Ser	Ala	Thr	Ser	Leu	980	985	990
Ser	Ala	Thr	Val	Met	Val	Ser	Lys	Phe	Thr	Ser	Pro	Ala	Thr	Ser	Ser	995	1000	1005
Met	Glu	Ala	Thr	Ser	Ile	Arg	Glu	Pro	Ser	Thr	Thr	Ile	Leu	Thr		1010	1015	1020
Thr	Glu	Thr	Thr	Asn	Gly	Pro	Gly	Ser	Met	Ala	Val	Ala	Ser	Thr		1025	1030	1035
Asn	Ile	Pro	Ile	Gly	Lys	Gly	Tyr	Ile	Thr	Glu	Gly	Arg	Leu	Asp		1040	1045	1050

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Thr	Ser	His	Leu	Pro	Ile	Gly	Thr	Thr	Ala	Ser	Ser	Glu	Thr	Ser
1055						1060					1065			
Met	Asp	Phe	Thr	Met	Ala	Lys	Glu	Ser	Val	Ser	Met	Ser	Val	Ser
1070						1075					1080			
Pro	Ser	Gln	Ser	Met	Asp	Ala	Ala	Gly	Ser	Ser	Thr	Pro	Gly	Arg
1085						1090					1095			
Thr	Ser	Gln	Phe	Val	Asp	Thr	Phe	Ser	Asp	Asp	Val	Tyr	His	Leu
1100						1105					1110			
Thr	Ser	Arg	Glu	Ile	Thr	Ile	Pro	Arg	Asp	Gly	Thr	Ser	Ser	Ala
1115						1120					1125			
Leu	Thr	Pro	Gln	Met	Thr	Ala	Thr	His	Pro	Pro	Ser	Pro	Asp	Pro
1130						1135					1140			
Gly	Ser	Ala	Arg	Ser	Thr	Trp	Leu	Gly	Ile	Leu	Ser	Ser	Ser	Pro
1145						1150					1155			
Ser	Ser	Pro	Thr	Pro	Lys	Val	Thr	Met	Ser	Ser	Thr	Phe	Ser	Thr
1160						1165					1170			
Gln	Arg	Val	Thr	Thr	Ser	Met	Ile	Met	Asp	Thr	Val	Glu	Thr	Ser
1175						1180					1185			
Arg	Trp	Asn	Met	Pro	Asn	Leu	Pro	Ser	Thr	Thr	Ser	Leu	Thr	Pro
1190						1195					1200			
Ser	Asn	Ile	Pro	Thr	Ser	Gly	Ala	Ile	Gly	Lys	Ser	Thr	Leu	Val
1205						1210					1215			
Pro	Leu	Asp	Thr	Pro	Ser	Pro	Ala	Thr	Ser	Leu	Glu	Ala	Ser	Glu
1220						1225					1230			
Gly	Gly	Leu	Pro	Thr	Leu	Ser	Thr	Tyr	Pro	Glu	Ser	Thr	Asn	Thr
1235						1240					1245			
Pro	Ser	Ile	His	Leu	Gly	Ala	His	Ala	Ser	Ser	Glu	Ser	Pro	Ser
1250						1255					1260			
Thr	Ile	Lys	Leu	Thr	Met	Ala	Ser	Val	Val	Lys	Pro	Gly	Ser	Tyr
1265						1270					1275			
Thr	Pro	Leu	Thr	Phe	Pro	Ser	Ile	Glu	Thr	His	Ile	His	Val	Ser
1280						1285					1290			
Thr	Ala	Arg	Met	Ala	Tyr	Ser	Ser	Gly	Ser	Ser	Pro	Glu	Met	Thr
1295						1300					1305			
Ala	Pro	Gly	Glu	Thr	Asn	Thr	Gly	Ser	Thr	Trp	Asp	Pro	Thr	Thr
1310						1315					1320			
Tyr	Ile	Thr	Thr	Thr	Asp	Pro	Lys	Asp	Thr	Ser	Ser	Ala	Gln	Val
1325						1330					1335			
Ser	Thr	Pro	His	Ser	Val	Arg	Thr	Leu	Arg	Thr	Thr	Glu	Asn	His
1340						1345					1350			
Pro	Lys	Thr	Glu	Ser	Ala	Thr	Pro	Ala	Ala	Tyr	Ser	Gly	Ser	Pro
1355						1360					1365			
Lys	Ile	Ser	Ser	Ser	Pro	Asn	Leu	Thr	Ser	Pro	Ala	Thr	Lys	Ala
1370						1375					1380			
Trp	Thr	Ile	Thr	Asp	Thr	Thr	Glu	His	Ser	Thr	Gln	Leu	His	Tyr
1385						1390					1395			
Thr	Lys	Leu	Ala	Glu	Lys	Ser	Ser	Gly	Phe	Glu	Thr	Gln	Ser	Ala
1400						1405					1410			

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Pro Gly	Pro Val	Ser Val	Val	Ile	Pro Thr	Ser Pro	Thr Ile	Gly	
1415			1420			1425			
Ser Ser	Thr Leu	Glu Leu	Thr	Ser Asp	Val Pro	Gly	Glu Pro	Leu	
1430			1435			1440			
Val Leu	Ala Pro	Ser Glu	Gln	Thr Thr	Ile Thr	Leu	Pro Met	Ala	
1445			1450			1455			
Thr Trp	Leu Ser	Thr Ser	Leu	Thr Glu	Glu Met	Ala	Ser Thr	Asp	
1460			1465			1470			
Leu Asp	Ile Ser	Ser Pro	Ser	Ser Pro	Met Ser	Thr	Phe Ala	Ile	
1475			1480			1485			
Phe Pro	Pro Met	Ser Thr	Pro	Ser His	Glu Leu	Ser	Lys Ser	Glu	
1490			1495			1500			
Ala Asp	Thr Ser	Ala Ile	Arg	Asn Thr	Asp Ser	Thr	Thr Leu	Asp	
1505			1510			1515			
Gln His	Leu Gly	Ile Arg	Ser	Leu Gly	Arg Thr	Gly	Asp Leu	Thr	
1520			1525			1530			
Thr Val	Pro Ile	Thr Pro	Leu	Thr Thr	Thr Trp	Thr	Ser Val	Ile	
1535			1540			1545			
Glu His	Ser Thr	Gln Ala	Gln	Asp Thr	Leu Ser	Ala	Thr Met	Ser	
1550			1555			1560			
Pro Thr	His Val	Thr Gln	Ser	Leu Lys	Asp Gln	Thr	Ser Ile	Pro	
1565			1570			1575			
Ala Ser	Ala Ser	Pro Ser	His	Leu Thr	Glu Val	Tyr	Pro Glu	Leu	
1580			1585			1590			
Gly Thr	Gln Gly	Arg Ser	Ser	Ser Glu	Ala Thr	Thr	Phe Trp	Lys	
1595			1600			1605			
Pro Ser	Thr Asp	Thr Leu	Ser	Arg Glu	Ile Glu	Thr	Gly Pro	Thr	
1610			1615			1620			
Asn Ile	Gln Ser	Thr Pro	Pro	Met Asp	Asn Thr	Thr	Thr Gly	Ser	
1625			1630			1635			
Ser Ser	Ser Gly	Val Thr	Leu	Gly Ile	Ala His	Leu	Pro Ile	Gly	
1640			1645			1650			
Thr Ser	Ser Pro	Ala Glu	Thr	Ser Thr	Asn Met	Ala	Leu Glu	Arg	
1655			1660			1665			
Arg Ser	Ser Thr	Ala Thr	Val	Ser Met	Ala Gly	Thr	Met Gly	Leu	
1670			1675			1680			
Leu Val	Thr Ser	Ala Pro	Gly	Arg Ser	Ile Ser	Gln	Ser Leu	Gly	
1685			1690			1695			
Arg Val	Ser Ser	Val Leu	Ser	Glu Ser	Thr Thr	Glu	Gly Val	Thr	
1700			1705			1710			
Asp Ser	Ser Lys	Gly Ser	Ser	Pro Arg	Leu Asn	Thr	Gln Gly	Asn	
1715			1720			1725			
Thr Ala	Leu Ser	Ser Ser	Leu	Glu Pro	Ser Tyr	Ala	Glu Gly	Ser	
1730			1735			1740			
Gln Met	Ser Thr	Ser Ile	Pro	Leu Thr	Ser Ser	Pro	Thr Thr	Pro	
1745			1750			1755			
Asp Val	Glu Phe	Ile Gly	Gly	Ser Thr	Phe Trp	Thr	Lys Glu	Val	
1760			1765			1770			

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Thr	Thr	Val	Met	Thr	Ser	Asp	Ile	Ser	Lys	Ser	Ser	Ala	Arg	Thr
1775						1780					1785			
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1790						1795					1800			
Glu	Asn	Thr	Gly	Lys	Glu	Lys	Leu	Arg	Thr	Ala	Ser	Met	Asp	Leu
1805						1810					1815			
Pro	Ser	Pro	Thr	Pro	Ser	Met	Glu	Val	Thr	Pro	Trp	Ile	Ser	Leu
1820						1825					1830			
Thr	Leu	Ser	Asn	Ala	Pro	Asn	Thr	Thr	Asp	Ser	Leu	Asp	Leu	Ser
1835						1840					1845			
His	Gly	Val	His	Thr	Ser	Ser	Ala	Gly	Thr	Leu	Ala	Thr	Asp	Arg
1850						1855					1860			
Ser	Leu	Asn	Thr	Gly	Val	Thr	Arg	Ala	Ser	Arg	Leu	Glu	Asn	Gly
1865						1870					1875			
Ser	Asp	Thr	Ser	Ser	Lys	Ser	Leu	Ser	Met	Gly	Asn	Ser	Thr	His
1880						1885					1890			
Thr	Ser	Met	Thr	Tyr	Thr	Glu	Lys	Ser	Glu	Val	Ser	Ser	Ser	Ile
1895						1900					1905			
His	Pro	Arg	Pro	Glu	Thr	Ser	Ala	Pro	Gly	Ala	Glu	Thr	Thr	Leu
1910						1915					1920			
Thr	Ser	Thr	Pro	Gly	Asn	Arg	Ala	Ile	Ser	Leu	Thr	Leu	Pro	Phe
1925						1930					1935			
Ser	Ser	Ile	Pro	Val	Glu	Glu	Val	Ile	Ser	Thr	Gly	Ile	Thr	Ser
1940						1945					1950			
Gly	Pro	Asp	Ile	Asn	Ser	Ala	Pro	Met	Thr	His	Ser	Pro	Ile	Thr
1955						1960					1965			
Pro	Pro	Thr	Ile	Val	Trp	Thr	Ser	Thr	Gly	Thr	Ile	Glu	Gln	Ser
1970						1975					1980			
Thr	Gln	Pro	Leu	His	Ala	Val	Ser	Ser	Glu	Lys	Val	Ser	Val	Gln
1985						1990					1995			
Thr	Gln	Ser	Thr	Pro	Tyr	Val	Asn	Ser	Val	Ala	Val	Ser	Ala	Ser
2000						2005					2010			
Pro	Thr	His	Glu	Asn	Ser	Val	Ser	Ser	Gly	Ser	Ser	Thr	Ser	Ser
2015						2020					2025			
Pro	Tyr	Ser	Ser	Ala	Ser	Leu	Glu	Ser	Leu	Asp	Ser	Thr	Ile	Ser
2030						2035					2040			
Arg	Arg	Asn	Ala	Ile	Thr	Ser	Trp	Leu	Trp	Asp	Leu	Thr	Thr	Ser
2045						2050					2055			
Leu	Pro	Thr	Thr	Thr	Trp	Pro	Ser	Thr	Ser	Leu	Ser	Glu	Ala	Leu
2060						2065					2070			
Ser	Ser	Gly	His	Ser	Gly	Val	Ser	Asn	Pro	Ser	Ser	Thr	Thr	Thr
2075						2080					2085			
Glu	Phe	Pro	Leu	Phe	Ser	Ala	Ala	Ser	Thr	Ser	Ala	Ala	Lys	Gln
2090						2095					2100			
Arg	Asn	Pro	Glu	Thr	Glu	Thr	His	Gly	Pro	Gln	Asn	Thr	Ala	Ala
2105						2110					2115			
Ser	Thr	Leu	Asn	Thr	Asp	Ala	Ser	Ser	Val	Thr	Gly	Leu	Ser	Glu
2120						2125					2130			

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Thr	Pro	Val	Gly	Ala	Ser	Ile	Ser	Ser	Glu	Val	Pro	Leu	Pro	Met
2135						2140					2145			
Ala	Ile	Thr	Ser	Arg	Ser	Asp	Val	Ser	Gly	Leu	Thr	Ser	Glu	Ser
2150						2155					2160			
Thr	Ala	Asn	Pro	Ser	Leu	Gly	Thr	Ala	Ser	Ser	Ala	Gly	Thr	Lys
2165						2170					2175			
Leu	Thr	Arg	Thr	Ile	Ser	Leu	Pro	Thr	Ser	Glu	Ser	Leu	Val	Ser
2180						2185					2190			
Phe	Arg	Met	Asn	Lys	Asp	Pro	Trp	Thr	Val	Ser	Ile	Pro	Leu	Gly
2195						2200					2205			
Ser	His	Pro	Thr	Thr	Asn	Thr	Glu	Thr	Ser	Ile	Pro	Val	Asn	Ser
2210						2215					2220			
Ala	Gly	Pro	Pro	Gly	Leu	Ser	Thr	Val	Ala	Ser	Asp	Val	Ile	Asp
2225						2230					2235			
Thr	Pro	Ser	Asp	Gly	Ala	Glu	Ser	Ile	Pro	Thr	Val	Ser	Phe	Ser
2240						2245					2250			
Pro	Ser	Pro	Asp	Thr	Glu	Val	Thr	Thr	Ile	Ser	His	Phe	Pro	Glu
2255						2260					2265			
Lys	Thr	Thr	His	Ser	Phe	Arg	Thr	Ile	Ser	Ser	Leu	Thr	His	Glu
2270						2275					2280			
Leu	Thr	Ser	Arg	Val	Thr	Pro	Ile	Pro	Gly	Asp	Trp	Met	Ser	Ser
2285						2290					2295			
Ala	Met	Ser	Thr	Lys	Pro	Thr	Gly	Ala	Ser	Pro	Ser	Ile	Thr	Leu
2300						2305					2310			
Gly	Glu	Arg	Arg	Thr	Ile	Thr	Ser	Ala	Ala	Pro	Thr	Thr	Ser	Pro
2315						2320					2325			
Ile	Val	Leu	Thr	Ala	Ser	Phe	Thr	Glu	Thr	Ser	Thr	Val	Ser	Leu
2330						2335					2340			
Asp	Asn	Glu	Thr	Thr	Val	Lys	Thr	Ser	Asp	Ile	Leu	Asp	Ala	Arg
2345						2350					2355			
Lys	Thr	Asn	Glu	Leu	Pro	Ser	Asp	Ser	Ser	Ser	Ser	Ser	Asp	Leu
2360						2365					2370			
Ile	Asn	Thr	Ser	Ile	Ala	Ser	Ser	Thr	Met	Asp	Val	Thr	Lys	Thr
2375						2380					2385			
Ala	Ser	Ile	Ser	Pro	Thr	Ser	Ile	Ser	Gly	Met	Thr	Ala	Ser	Ser
2390						2395					2400			
Ser	Pro	Ser	Leu	Phe	Ser	Ser	Asp	Arg	Pro	Gln	Val	Pro	Thr	Ser
2405						2410					2415			
Thr	Thr	Glu	Thr	Asn	Thr	Ala	Thr	Ser	Pro	Ser	Val	Ser	Ser	Asn
2420						2425					2430			
Thr	Tyr	Ser	Leu	Asp	Gly	Gly	Ser	Asn	Val	Gly	Gly	Thr	Pro	Ser
2435						2440					2445			
Thr	Leu	Pro	Pro	Phe	Thr	Ile	Thr	His	Pro	Val	Glu	Thr	Ser	Ser
2450						2455					2460			
Ala	Leu	Leu	Ala	Trp	Ser	Arg	Pro	Val	Arg	Thr	Phe	Ser	Thr	Met
2465						2470					2475			
Val	Ser	Thr	Asp	Thr	Ala	Ser	Gly	Glu	Asn	Pro	Thr	Ser	Ser	Asn
2480						2485					2490			

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Ser	Val	Val	Thr	Ser	Val	Pro	Ala	Pro	Gly	Thr	Trp	Thr	Ser	Val
2495						2500					2505			
Gly	Ser	Thr	Thr	Asp	Leu	Pro	Ala	Met	Gly	Phe	Leu	Lys	Thr	Ser
2510						2515					2520			
Pro	Ala	Gly	Glu	Ala	His	Ser	Leu	Leu	Ala	Ser	Thr	Ile	Glu	Pro
2525						2530					2535			
Ala	Thr	Ala	Phe	Thr	Pro	His	Leu	Ser	Ala	Ala	Val	Val	Thr	Gly
2540						2545					2550			
Ser	Ser	Ala	Thr	Ser	Glu	Ala	Ser	Leu	Leu	Thr	Thr	Ser	Glu	Ser
2555						2560					2565			
Lys	Ala	Ile	His	Ser	Ser	Pro	Gln	Thr	Pro	Thr	Thr	Pro	Thr	Ser
2570						2575					2580			
Gly	Ala	Asn	Trp	Glu	Thr	Ser	Ala	Thr	Pro	Glu	Ser	Leu	Leu	Val
2585						2590					2595			
Val	Thr	Glu	Thr	Ser	Asp	Thr	Thr	Leu	Thr	Ser	Lys	Ile	Leu	Val
2600						2605					2610			
Thr	Asp	Thr	Ile	Leu	Phe	Ser	Thr	Val	Ser	Thr	Pro	Pro	Ser	Lys
2615						2620					2625			
Phe	Pro	Ser	Thr	Gly	Thr	Leu	Ser	Gly	Ala	Ser	Phe	Pro	Thr	Leu
2630						2635					2640			
Leu	Pro	Asp	Thr	Pro	Ala	Ile	Pro	Leu	Thr	Ala	Thr	Glu	Pro	Thr
2645						2650					2655			
Ser	Ser	Leu	Ala	Thr	Ser	Phe	Asp	Ser	Thr	Pro	Leu	Val	Thr	Ile
2660						2665					2670			
Ala	Ser	Asp	Ser	Leu	Gly	Thr	Val	Pro	Glu	Thr	Thr	Leu	Thr	Met
2675						2680					2685			
Ser	Glu	Thr	Ser	Asn	Gly	Asp	Ala	Leu	Val	Leu	Lys	Thr	Val	Ser
2690						2695					2700			
Asn	Pro	Asp	Arg	Ser	Ile	Pro	Gly	Ile	Thr	Ile	Gln	Gly	Val	Thr
2705						2710					2715			
Glu	Ser	Pro	Leu	His	Pro	Ser	Ser	Thr	Ser	Pro	Ser	Lys	Ile	Val
2720						2725					2730			
Ala	Pro	Arg	Asn	Thr	Thr	Tyr	Glu	Gly	Ser	Ile	Thr	Val	Ala	Leu
2735						2740					2745			
Ser	Thr	Leu	Pro	Ala	Gly	Thr	Thr	Gly	Ser	Leu	Val	Phe	Ser	Gln
2750						2755					2760			
Ser	Ser	Glu	Asn	Ser	Glu	Thr	Thr	Ala	Leu	Val	Asp	Ser	Ser	Ala
2765						2770					2775			
Gly	Leu	Glu	Arg	Ala	Ser	Val	Met	Pro	Leu	Thr	Thr	Gly	Ser	Gln
2780						2785					2790			
Gly	Met	Ala	Ser	Ser	Gly	Gly	Ile	Arg	Ser	Gly	Ser	Thr	His	Ser
2795						2800					2805			
Thr	Gly	Thr	Lys	Thr	Phe	Ser	Ser	Leu	Pro	Leu	Thr	Met	Asn	Pro
2810						2815					2820			
Gly	Glu	Val	Thr	Ala	Met	Ser	Glu	Ile	Thr	Thr	Asn	Arg	Leu	Thr
2825						2830					2835			
Ala	Thr	Gln	Ser	Thr	Ala	Pro	Lys	Gly	Ile	Pro	Val	Lys	Pro	Thr
2840						2845					2850			

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Ser	Ala	Glu	Ser	Gly	Leu	Leu	Thr	Pro	Val	Ser	Ala	Ser	Ser	Ser
2855						2860					2865			
Pro	Ser	Lys	Ala	Phe	Ala	Ser	Leu	Thr	Thr	Ala	Pro	Pro	Thr	Trp
2870						2875					2880			
Gly	Ile	Pro	Gln	Ser	Thr	Leu	Thr	Phe	Glu	Phe	Ser	Glu	Val	Pro
2885						2890					2895			
Ser	Leu	Asp	Thr	Lys	Ser	Ala	Ser	Leu	Pro	Thr	Pro	Gly	Gln	Ser
2900						2905					2910			
Leu	Asn	Thr	Ile	Pro	Asp	Ser	Asp	Ala	Ser	Thr	Ala	Ser	Ser	Ser
2915						2920					2925			
Leu	Ser	Lys	Ser	Pro	Glu	Lys	Asn	Pro	Arg	Ala	Arg	Met	Met	Thr
2930						2935					2940			
Ser	Thr	Lys	Ala	Ile	Ser	Ala	Ser	Ser	Phe	Gln	Ser	Thr	Gly	Phe
2945						2950					2955			
Thr	Glu	Thr	Pro	Glu	Gly	Ser	Ala	Ser	Pro	Ser	Met	Ala	Gly	His
2960						2965					2970			
Glu	Pro	Arg	Val	Pro	Thr	Ser	Gly	Thr	Gly	Asp	Pro	Arg	Tyr	Ala
2975						2980					2985			
Ser	Glu	Ser	Met	Ser	Tyr	Pro	Asp	Pro	Ser	Lys	Ala	Ser	Ser	Ala
2990						2995					3000			
Met	Thr	Ser	Thr	Ser	Leu	Ala	Ser	Lys	Leu	Thr	Thr	Leu	Phe	Ser
3005						3010					3015			
Thr	Gly	Gln	Ala	Ala	Arg	Ser	Gly	Ser	Ser	Ser	Ser	Pro	Ile	Ser
3020						3025					3030			
Leu	Ser	Thr	Glu	Lys	Glu	Thr	Ser	Phe	Leu	Ser	Pro	Thr	Ala	Ser
3035						3040					3045			
Thr	Ser	Arg	Lys	Thr	Ser	Leu	Phe	Leu	Gly	Pro	Ser	Met	Ala	Arg
3050						3055					3060			
Gln	Pro	Asn	Ile	Leu	Val	His	Leu	Gln	Thr	Ser	Ala	Leu	Thr	Leu
3065						3070					3075			
Ser	Pro	Thr	Ser	Thr	Leu	Asn	Met	Ser	Gln	Glu	Glu	Pro	Pro	Glu
3080						3085					3090			
Leu	Thr	Ser	Ser	Gln	Thr	Ile	Ala	Glu	Glu	Glu	Gly	Thr	Thr	Ala
3095						3100					3105			
Glu	Thr	Gln	Thr	Leu	Thr	Phe	Thr	Pro	Ser	Glu	Thr	Pro	Thr	Ser
3110						3115					3120			
Leu	Leu	Pro	Val	Ser	Ser	Pro	Thr	Glu	Pro	Thr	Ala	Arg	Arg	Lys
3125						3130					3135			
Ser	Ser	Pro	Glu	Thr	Trp	Ala	Ser	Ser	Ile	Ser	Val	Pro	Ala	Lys
3140						3145					3150			
Thr	Ser	Leu	Val	Glu	Thr	Thr	Asp	Gly	Thr	Leu	Val	Thr	Thr	Ile
3155						3160					3165			
Lys	Met	Ser	Ser	Gln	Ala	Ala	Gln	Gly	Asn	Ser	Thr	Trp	Pro	Ala
3170						3175					3180			
Pro	Ala	Glu	Glu	Thr	Gly	Ser	Ser	Pro	Ala	Gly	Thr	Ser	Pro	Gly
3185						3190					3195			
Ser	Pro	Glu	Met	Ser	Thr	Thr	Leu	Lys	Ile	Met	Ser	Ser	Lys	Glu
3200						3205					3210			

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Pro	Ser	Ile	Ser	Pro	Glu	Ile	Arg	Ser	Thr	Val	Arg	Asn	Ser	Pro
3215						3220					3225			
Trp	Lys	Thr	Pro	Glu	Thr	Thr	Val	Pro	Met	Glu	Thr	Thr	Val	Glu
3230						3235					3240			
Pro	Val	Thr	Leu	Gln	Ser	Thr	Ala	Leu	Gly	Ser	Gly	Ser	Thr	Ser
3245						3250					3255			
Ile	Ser	His	Leu	Pro	Thr	Gly	Thr	Thr	Ser	Pro	Thr	Lys	Ser	Pro
3260						3265					3270			
Thr	Glu	Asn	Met	Leu	Ala	Thr	Glu	Arg	Val	Ser	Leu	Ser	Pro	Ser
3275						3280					3285			
Pro	Pro	Glu	Ala	Trp	Thr	Asn	Leu	Tyr	Ser	Gly	Thr	Pro	Gly	Gly
3290						3295					3300			
Thr	Arg	Gln	Ser	Leu	Ala	Thr	Met	Ser	Ser	Val	Ser	Leu	Glu	Ser
3305						3310					3315			
Pro	Thr	Ala	Arg	Ser	Ile	Thr	Gly	Thr	Gly	Gln	Gln	Ser	Ser	Pro
3320						3325					3330			
Glu	Leu	Val	Ser	Lys	Thr	Thr	Gly	Met	Glu	Phe	Ser	Met	Trp	His
3335						3340					3345			
Gly	Ser	Thr	Gly	Gly	Thr	Thr	Gly	Asp	Thr	His	Val	Ser	Leu	Ser
3350						3355					3360			
Thr	Ser	Ser	Asn	Ile	Leu	Glu	Asp	Pro	Val	Thr	Ser	Pro	Asn	Ser
3365						3370					3375			
Val	Ser	Ser	Leu	Thr	Asp	Lys	Ser	Lys	His	Lys	Thr	Glu	Thr	Trp
3380						3385					3390			
Val	Ser	Thr	Thr	Ala	Ile	Pro	Ser	Thr	Val	Leu	Asn	Asn	Lys	Ile
3395						3400					3405			
Met	Ala	Ala	Glu	Gln	Gln	Thr	Ser	Arg	Ser	Val	Asp	Glu	Ala	Tyr
3410						3415					3420			
Ser	Ser	Thr	Ser	Ser	Trp	Ser	Asp	Gln	Thr	Ser	Gly	Ser	Asp	Ile
3425						3430					3435			
Thr	Leu	Gly	Ala	Ser	Pro	Asp	Val	Thr	Asn	Thr	Leu	Tyr	Ile	Thr
3440						3445					3450			
Ser	Thr	Ala	Gln	Thr	Thr	Ser	Leu	Val	Ser	Leu	Pro	Ser	Gly	Asp
3455						3460					3465			
Gln	Gly	Ile	Thr	Ser	Leu	Thr	Asn	Pro	Ser	Gly	Gly	Lys	Thr	Ser
3470						3475					3480			
Ser	Ala	Ser	Ser	Val	Thr	Ser	Pro	Ser	Ile	Gly	Leu	Glu	Thr	Leu
3485						3490					3495			
Arg	Ala	Asn	Val	Ser	Ala	Val	Lys	Ser	Asp	Ile	Ala	Pro	Thr	Ala
3500						3505					3510			
Gly	His	Leu	Ser	Gln	Thr	Ser	Ser	Pro	Ala	Glu	Val	Ser	Ile	Leu
3515						3520					3525			
Asp	Val	Thr	Thr	Ala	Pro	Thr	Pro	Gly	Ile	Ser	Thr	Thr	Ile	Thr
3530						3535					3540			
Thr	Met	Gly	Thr	Asn	Ser	Ile	Ser	Thr	Thr	Thr	Pro	Asn	Pro	Glu
3545						3550					3555			
Val	Gly	Met	Ser	Thr	Met	Asp	Ser	Thr	Pro	Ala	Thr	Glu	Arg	Arg
3560						3565					3570			

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Thr Thr Ser Thr Glu His	Pro Ser Thr Trp Ser Ser	Thr Ala Ala
3575	3580	3585
Ser Asp Ser Trp Thr Val	Thr Asp Met Thr Ser Asn	Leu Lys Val
3590	3595	3600
Ala Arg Ser Pro Gly Thr	Ile Ser Thr Met His Thr	Thr Ser Phe
3605	3610	3615
Leu Ala Ser Ser Thr Glu	Leu Asp Ser Met Ser Thr	Pro His Gly
3620	3625	3630
Arg Ile Thr Val Ile Gly	Thr Ser Leu Val Thr Pro	Ser Ser Asp
3635	3640	3645
Ala Ser Ala Val Lys Thr	Glu Thr Ser Thr Ser Glu	Arg Thr Leu
3650	3655	3660
Ser Pro Ser Asp Thr Thr	Ala Ser Thr Pro Ile Ser	Thr Phe Ser
3665	3670	3675
Arg Val Gln Arg Met Ser	Ile Ser Val Pro Asp Ile	Leu Ser Thr
3680	3685	3690
Ser Trp Thr Pro Ser Ser	Thr Glu Ala Glu Asp Val	Pro Val Ser
3695	3700	3705
Met Val Ser Thr Asp His	Ala Ser Thr Lys Thr Asp	Pro Asn Thr
3710	3715	3720
Pro Leu Ser Thr Phe Leu	Phe Asp Ser Leu Ser Thr	Leu Asp Trp
3725	3730	3735
Asp Thr Gly Arg Ser Leu	Ser Ser Ala Thr Ala Thr	Thr Ser Ala
3740	3745	3750
Pro Gln Gly Ala Thr Thr	Pro Gln Glu Leu Thr Leu	Glu Thr Met
3755	3760	3765
Ile Ser Pro Ala Thr Ser	Gln Leu Pro Phe Ser Ile	Gly His Ile
3770	3775	3780
Thr Ser Ala Val Thr Pro	Ala Ala Met Ala Arg Ser	Ser Ser Gly Val
3785	3790	3795
Thr Phe Ser Arg Pro Asp	Pro Thr Ser Lys Lys Ala	Glu Gln Thr
3800	3805	3810
Ser Thr Gln Leu Pro Thr	Thr Thr Ser Ala His Pro	Gly Gln Val
3815	3820	3825
Pro Arg Ser Ala Ala Thr	Thr Leu Asp Val Ile Pro	His Thr Ala
3830	3835	3840
Lys Thr Pro Asp Ala Thr	Phe Gln Arg Gln Gly Gln	Thr Ala Leu
3845	3850	3855
Thr Thr Glu Ala Arg Ala	Thr Ser Asp Ser Trp Asn	Glu Lys Glu
3860	3865	3870
Lys Ser Thr Pro Ser Ala	Pro Trp Ile Thr Glu Met	Met Asn Ser
3875	3880	3885
Val Ser Glu Asp Thr Ile	Lys Glu Val Thr Ser Ser	Ser Ser Val
3890	3895	3900
Leu Arg Thr Leu Asn Thr	Leu Asp Ile Asn Leu Glu	Ser Gly Thr
3905	3910	3915
Thr Ser Ser Pro Ser Trp	Lys Ser Ser Pro Tyr Glu	Arg Ile Ala
3920	3925	3930

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Pro	Ser	Glu	Ser	Thr	Thr	Asp	Lys	Glu	Ala	Ile	His	Pro	Ser	Thr
3935						3940					3945			
Asn	Thr	Val	Glu	Thr	Thr	Gly	Trp	Val	Thr	Ser	Ser	Glu	His	Ala
3950						3955					3960			
Ser	His	Ser	Thr	Ile	Pro	Ala	His	Ser	Ala	Ser	Ser	Lys	Leu	Thr
3965						3970					3975			
Ser	Pro	Val	Val	Thr	Thr	Ser	Thr	Arg	Glu	Gln	Ala	Ile	Val	Ser
3980						3985					3990			
Met	Ser	Thr	Thr	Thr	Trp	Pro	Glu	Ser	Thr	Arg	Ala	Arg	Thr	Glu
3995						4000					4005			
Pro	Asn	Ser	Phe	Leu	Thr	Ile	Glu	Leu	Arg	Asp	Val	Ser	Pro	Tyr
4010						4015					4020			
Met	Asp	Thr	Ser	Ser	Thr	Thr	Gln	Thr	Ser	Ile	Ile	Ser	Ser	Pro
4025						4030					4035			
Gly	Ser	Thr	Ala	Ile	Thr	Lys	Gly	Pro	Arg	Thr	Glu	Ile	Thr	Ser
4040						4045					4050			
Ser	Lys	Arg	Ile	Ser	Ser	Ser	Phe	Leu	Ala	Gln	Ser	Met	Arg	Ser
4055						4060					4065			
Ser	Asp	Ser	Pro	Ser	Glu	Ala	Ile	Thr	Arg	Leu	Ser	Asn	Phe	Pro
4070						4075					4080			
Ala	Met	Thr	Glu	Ser	Gly	Gly	Met	Ile	Leu	Ala	Met	Gln	Thr	Ser
4085						4090					4095			
Pro	Pro	Gly	Ala	Thr	Ser	Leu	Ser	Ala	Pro	Thr	Leu	Asp	Thr	Ser
4100						4105					4110			
Ala	Thr	Ala	Ser	Trp	Thr	Gly	Thr	Pro	Leu	Ala	Thr	Thr	Gln	Arg
4115						4120					4125			
Phe	Thr	Tyr	Ser	Glu	Lys	Thr	Thr	Leu	Phe	Ser	Lys	Gly	Pro	Glu
4130						4135					4140			
Asp	Thr	Ser	Gln	Pro	Ser	Pro	Pro	Ser	Val	Glu	Glu	Thr	Ser	Ser
4145						4150					4155			
Ser	Ser	Ser	Leu	Val	Pro	Ile	His	Ala	Thr	Thr	Ser	Pro	Ser	Asn
4160						4165					4170			
Ile	Leu	Leu	Thr	Ser	Gln	Gly	His	Ser	Pro	Ser	Ser	Thr	Pro	Pro
4175						4180					4185			
Val	Thr	Ser	Val	Phe	Leu	Ser	Glu	Thr	Ser	Gly	Leu	Gly	Lys	Thr
4190						4195					4200			
Thr	Asp	Met	Ser	Arg	Ile	Ser	Leu	Glu	Pro	Gly	Thr	Ser	Leu	Pro
4205						4210					4215			
Pro	Asn	Leu	Ser	Ser	Thr	Ala	Gly	Glu	Ala	Leu	Ser	Thr	Tyr	Glu
4220						4225					4230			
Ala	Ser	Arg	Asp	Thr	Lys	Ala	Ile	His	His	Ser	Ala	Asp	Thr	Ala
4235						4240					4245			
Val	Thr	Asn	Met	Glu	Ala	Thr	Ser	Ser	Glu	Tyr	Ser	Pro	Ile	Pro
4250						4255					4260			
Gly	His	Thr	Lys	Pro	Ser	Lys	Ala	Thr	Ser	Pro	Leu	Val	Thr	Ser
4265						4270					4275			
His	Ile	Met	Gly	Asp	Ile	Thr	Ser	Ser	Thr	Ser	Val	Phe	Gly	Ser
4280						4285					4290			

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Ser	Glu	Thr	Thr	Glu	Ile	Glu	Thr	Val	Ser	Ser	Val	Asn	Gln	Gly
4295						4300					4305			
Leu	Gln	Glu	Arg	Ser	Thr	Ser	Gln	Val	Ala	Ser	Ser	Ala	Thr	Glu
4310						4315					4320			
Thr	Ser	Thr	Val	Ile	Thr	His	Val	Ser	Ser	Gly	Asp	Ala	Thr	Thr
4325						4330					4335			
His	Val	Thr	Lys	Thr	Gln	Ala	Thr	Phe	Ser	Ser	Gly	Thr	Ser	Ile
4340						4345					4350			
Ser	Ser	Pro	His	Gln	Phe	Ile	Thr	Ser	Thr	Asn	Thr	Phe	Thr	Asp
4355						4360					4365			
Val	Ser	Thr	Asn	Pro	Ser	Thr	Ser	Leu	Ile	Met	Thr	Glu	Ser	Ser
4370						4375					4380			
Gly	Val	Thr	Ile	Thr	Thr	Gln	Thr	Gly	Pro	Thr	Gly	Ala	Ala	Thr
4385						4390					4395			
Gln	Gly	Pro	Tyr	Leu	Leu	Asp	Thr	Ser	Thr	Met	Pro	Tyr	Leu	Thr
4400						4405					4410			
Glu	Thr	Pro	Leu	Ala	Val	Thr	Pro	Asp	Phe	Met	Gln	Ser	Glu	Lys
4415						4420					4425			
Thr	Thr	Leu	Ile	Ser	Lys	Gly	Pro	Lys	Asp	Val	Ser	Trp	Thr	Ser
4430						4435					4440			
Pro	Pro	Ser	Val	Ala	Glu	Thr	Ser	Tyr	Pro	Ser	Ser	Leu	Thr	Pro
4445						4450					4455			
Phe	Leu	Val	Thr	Thr	Ile	Pro	Pro	Ala	Thr	Ser	Thr	Leu	Gln	Gly
4460						4465					4470			
Gln	His	Thr	Ser	Ser	Pro	Val	Ser	Ala	Thr	Ser	Val	Leu	Thr	Ser
4475						4480					4485			
Gly	Leu	Val	Lys	Thr	Thr	Asp	Met	Leu	Asn	Thr	Ser	Met	Glu	Pro
4490						4495					4500			
Val	Thr	Asn	Ser	Pro	Gln	Asn	Leu	Asn	Asn	Pro	Ser	Asn	Glu	Ile
4505						4510					4515			
Leu	Ala	Thr	Leu	Ala	Ala	Thr	Thr	Asp	Ile	Glu	Thr	Ile	His	Pro
4520						4525					4530			
Ser	Ile	Asn	Lys	Ala	Val	Thr	Asn	Met	Gly	Thr	Ala	Ser	Ser	Ala
4535						4540					4545			
His	Val	Leu	His	Ser	Thr	Leu	Pro	Val	Ser	Ser	Glu	Pro	Ser	Thr
4550						4555					4560			
Ala	Thr	Ser	Pro	Met	Val	Pro	Ala	Ser	Ser	Met	Gly	Asp	Ala	Leu
4565						4570					4575			
Ala	Ser	Ile	Ser	Ile	Pro	Gly	Ser	Glu	Thr	Thr	Asp	Ile	Glu	Gly
4580						4585					4590			
Glu	Pro	Thr	Ser	Ser	Leu	Thr	Ala	Gly	Arg	Lys	Glu	Asn	Ser	Thr
4595						4600					4605			
Leu	Gln	Glu	Met	Asn	Ser	Thr	Thr	Glu	Ser	Asn	Ile	Ile	Leu	Ser
4610						4615					4620			
Asn	Val	Ser	Val	Gly	Ala	Ile	Thr	Glu	Ala	Thr	Lys	Met	Glu	Val
4625						4630					4635			
Pro	Ser	Phe	Asp	Ala	Thr	Phe	Ile	Pro	Thr	Pro	Ala	Gln	Ser	Thr
4640						4645					4650			

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Lys	Phe	Pro	Asp	Ile	Phe	Ser	Val	Ala	Ser	Ser	Arg	Leu	Ser	Asn
4655						4660					4665			
Ser	Pro	Pro	Met	Thr	Ile	Ser	Thr	His	Met	Thr	Thr	Thr	Gln	Thr
4670						4675					4680			
Gly	Ser	Ser	Gly	Ala	Thr	Ser	Lys	Ile	Pro	Leu	Ala	Leu	Asp	Thr
4685						4690					4695			
Ser	Thr	Leu	Glu	Thr	Ser	Ala	Gly	Thr	Pro	Ser	Val	Val	Thr	Glu
4700						4705					4710			
Gly	Phe	Ala	His	Ser	Lys	Ile	Thr	Thr	Ala	Met	Asn	Asn	Asp	Val
4715						4720					4725			
Lys	Asp	Val	Ser	Gln	Thr	Asn	Pro	Pro	Phe	Gln	Asp	Glu	Ala	Ser
4730						4735					4740			
Ser	Pro	Ser	Ser	Gln	Ala	Pro	Val	Leu	Val	Thr	Thr	Leu	Pro	Ser
4745						4750					4755			
Ser	Val	Ala	Phe	Thr	Pro	Gln	Trp	His	Ser	Thr	Ser	Ser	Pro	Val
4760						4765					4770			
Ser	Met	Ser	Ser	Val	Leu	Thr	Ser	Ser	Leu	Val	Lys	Thr	Ala	Gly
4775						4780					4785			
Lys	Val	Asp	Thr	Ser	Leu	Glu	Thr	Val	Thr	Ser	Ser	Pro	Gln	Ser
4790						4795					4800			
Met	Ser	Asn	Thr	Leu	Asp	Asp	Ile	Ser	Val	Thr	Ser	Ala	Ala	Thr
4805						4810					4815			
Thr	Asp	Ile	Glu	Thr	Thr	His	Pro	Ser	Ile	Asn	Thr	Val	Val	Thr
4820						4825					4830			
Asn	Val	Gly	Thr	Thr	Gly	Ser	Ala	Phe	Glu	Ser	His	Ser	Thr	Val
4835						4840					4845			
Ser	Ala	Tyr	Pro	Glu	Pro	Ser	Lys	Val	Thr	Ser	Pro	Asn	Val	Thr
4850						4855					4860			
Thr	Ser	Thr	Met	Glu	Asp	Thr	Thr	Ile	Ser	Arg	Ser	Ile	Pro	Lys
4865						4870					4875			
Ser	Ser	Lys	Thr	Thr	Arg	Thr	Glu	Thr	Glu	Thr	Thr	Ser	Ser	Leu
4880						4885					4890			
Thr	Pro	Lys	Leu	Arg	Glu	Thr	Ser	Ile	Ser	Gln	Glu	Ile	Thr	Ser
4895						4900					4905			
Ser	Thr	Glu	Thr	Ser	Thr	Val	Pro	Tyr	Lys	Glu	Leu	Thr	Gly	Ala
4910						4915					4920			
Thr	Thr	Glu	Val	Ser	Arg	Thr	Asp	Val	Thr	Ser	Ser	Ser	Ser	Thr
4925						4930					4935			
Ser	Phe	Pro	Gly	Pro	Asp	Gln	Ser	Thr	Val	Ser	Leu	Asp	Ile	Ser
4940						4945					4950			
Thr	Glu	Thr	Asn	Thr	Arg	Leu	Ser	Thr	Ser	Pro	Ile	Met	Thr	Glu
4955						4960					4965			
Ser	Ala	Glu	Ile	Thr	Ile	Thr	Thr	Gln	Thr	Gly	Pro	His	Gly	Ala
4970						4975					4980			
Thr	Ser	Gln	Asp	Thr	Phe	Thr	Met	Asp	Pro	Ser	Asn	Thr	Thr	Pro
4985						4990					4995			
Gln	Ala	Gly	Ile	His	Ser	Ala	Met	Thr	His	Gly	Phe	Ser	Gln	Leu
5000						5005					5010			

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Asp	Val	Thr	Thr	Leu	Met	Ser	Arg	Ile	Pro	Gln	Asp	Val	Ser	Trp
5015						5020					5025			
Thr	Ser	Pro	Pro	Ser	Val	Asp	Lys	Thr	Ser	Ser	Pro	Ser	Ser	Phe
5030						5035					5040			
Leu	Ser	Ser	Pro	Ala	Met	Thr	Thr	Pro	Ser	Leu	Ile	Ser	Ser	Thr
5045						5050					5055			
Leu	Pro	Glu	Asp	Lys	Leu	Ser	Ser	Pro	Met	Thr	Ser	Leu	Leu	Thr
5060						5065					5070			
Ser	Gly	Leu	Val	Lys	Ile	Thr	Asp	Ile	Leu	Arg	Thr	Arg	Leu	Glu
5075						5080					5085			
Pro	Val	Thr	Ser	Ser	Leu	Pro	Asn	Phe	Ser	Ser	Thr	Ser	Asp	Lys
5090						5095					5100			
Ile	Leu	Ala	Thr	Ser	Lys	Asp	Ser	Lys	Asp	Thr	Lys	Glu	Ile	Phe
5105						5110					5115			
Pro	Ser	Ile	Asn	Thr	Glu	Glu	Thr	Asn	Val	Lys	Ala	Asn	Asn	Ser
5120						5125					5130			
Gly	His	Glu	Ser	His	Ser	Pro	Ala	Leu	Ala	Asp	Ser	Glu	Thr	Pro
5135						5140					5145			
Lys	Ala	Thr	Thr	Gln	Met	Val	Ile	Thr	Thr	Thr	Val	Gly	Asp	Pro
5150						5155					5160			
Ala	Pro	Ser	Thr	Ser	Met	Pro	Val	His	Gly	Ser	Ser	Glu	Thr	Thr
5165						5170					5175			
Asn	Ile	Lys	Arg	Glu	Pro	Thr	Tyr	Phe	Leu	Thr	Pro	Arg	Leu	Arg
5180						5185					5190			
Glu	Thr	Ser	Thr	Ser	Gln	Glu	Ser	Ser	Phe	Pro	Thr	Asp	Thr	Ser
5195						5200					5205			
Phe	Leu	Leu	Ser	Lys	Val	Pro	Thr	Gly	Thr	Ile	Thr	Glu	Val	Ser
5210						5215					5220			
Ser	Thr	Gly	Val	Asn	Ser	Ser	Ser	Lys	Ile	Ser	Thr	Pro	Asp	His
5225						5230					5235			
Asp	Lys	Ser	Thr	Val	Pro	Pro	Asp	Thr	Phe	Thr	Gly	Glu	Ile	Pro
5240						5245					5250			
Arg	Val	Phe	Thr	Ser	Ser	Ile	Lys	Thr	Lys	Ser	Ala	Glu	Met	Thr
5255						5260					5265			
Ile	Thr	Thr	Gln	Ala	Ser	Pro	Pro	Glu	Ser	Ala	Ser	His	Ser	Thr
5270						5275					5280			
Leu	Pro	Leu	Asp	Thr	Ser	Thr	Thr	Leu	Ser	Gln	Gly	Gly	Thr	His
5285						5290					5295			
Ser	Thr	Val	Thr	Gln	Gly	Phe	Pro	Tyr	Ser	Glu	Val	Thr	Thr	Leu
5300						5305					5310			
Met	Gly	Met	Gly	Pro	Gly	Asn	Val	Ser	Trp	Met	Thr	Thr	Pro	Pro
5315						5320					5325			
Val	Glu	Glu	Thr	Ser	Ser	Val	Ser	Ser	Leu	Met	Ser	Ser	Pro	Ala
5330						5335					5340			
Met	Thr	Ser	Pro	Ser	Pro	Val	Ser	Ser	Thr	Ser	Pro	Gln	Ser	Ile
5345						5350					5355			
Pro	Ser	Ser	Pro	Leu	Pro	Val	Thr	Ala	Leu	Pro	Thr	Ser	Val	Leu
5360						5365					5370			

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Val	Thr	Thr	Thr	Asp	Val	Leu	Gly	Thr	Thr	Ser	Pro	Glu	Ser	Val
5375						5380					5385			
Thr	Ser	Ser	Pro	Pro	Asn	Leu	Ser	Ser	Ile	Thr	His	Glu	Arg	Pro
5390						5395					5400			
Ala	Thr	Tyr	Lys	Asp	Thr	Ala	His	Thr	Glu	Ala	Ala	Met	His	His
5405						5410					5415			
Ser	Thr	Asn	Thr	Ala	Val	Thr	Asn	Val	Gly	Thr	Ser	Gly	Ser	Gly
5420						5425					5430			
His	Lys	Ser	Gln	Ser	Ser	Val	Leu	Ala	Asp	Ser	Glu	Thr	Ser	Lys
5435						5440					5445			
Ala	Thr	Pro	Leu	Met	Ser	Thr	Thr	Ser	Thr	Leu	Gly	Asp	Thr	Ser
5450						5455					5460			
Val	Ser	Thr	Ser	Thr	Pro	Asn	Ile	Ser	Gln	Thr	Asn	Gln	Ile	Gln
5465						5470					5475			
Thr	Glu	Pro	Thr	Ala	Ser	Leu	Ser	Pro	Arg	Leu	Arg	Glu	Ser	Ser
5480						5485					5490			
Thr	Ser	Glu	Lys	Thr	Ser	Ser	Thr	Thr	Glu	Thr	Asn	Thr	Ala	Phe
5495						5500					5505			
Ser	Tyr	Val	Pro	Thr	Gly	Ala	Ile	Thr	Gln	Ala	Ser	Arg	Thr	Glu
5510						5515					5520			
Ile	Ser	Ser	Ser	Arg	Thr	Ser	Ile	Ser	Asp	Leu	Asp	Arg	Pro	Thr
5525						5530					5535			
Ile	Ala	Pro	Asp	Ile	Ser	Thr	Gly	Met	Ile	Thr	Arg	Leu	Phe	Thr
5540						5545					5550			
Ser	Pro	Ile	Met	Thr	Lys	Ser	Ala	Glu	Met	Thr	Val	Thr	Thr	Gln
5555						5560					5565			
Thr	Thr	Thr	Pro	Gly	Ala	Thr	Ser	Gln	Gly	Ile	Leu	Pro	Trp	Asp
5570						5575					5580			
Thr	Ser	Thr	Thr	Leu	Phe	Gln	Gly	Gly	Thr	His	Ser	Thr	Val	Ser
5585						5590					5595			
Gln	Gly	Phe	Pro	His	Ser	Glu	Ile	Thr	Thr	Leu	Arg	Ser	Arg	Thr
5600						5605					5610			
Pro	Gly	Asp	Val	Ser	Trp	Met	Thr	Thr	Pro	Pro	Val	Glu	Glu	Thr
5615						5620					5625			
Ser	Ser	Gly	Phe	Ser	Leu	Met	Ser	Pro	Ser	Met	Thr	Ser	Pro	Ser
5630						5635					5640			
Pro	Val	Ser	Ser	Thr	Ser	Pro	Glu	Ser	Ile	Pro	Ser	Ser	Pro	Leu
5645						5650					5655			
Pro	Val	Thr	Ala	Leu	Leu	Thr	Ser	Val	Leu	Val	Thr	Thr	Thr	Asn
5660						5665					5670			
Val	Leu	Gly	Thr	Thr	Ser	Pro	Glu	Pro	Val	Thr	Ser	Ser	Pro	Pro
5675						5680					5685			
Asn	Leu	Ser	Ser	Pro	Thr	Gln	Glu	Arg	Leu	Thr	Thr	Tyr	Lys	Asp
5690						5695					5700			
Thr	Ala	His	Thr	Glu	Ala	Met	His	Ala	Ser	Met	His	Thr	Asn	Thr
5705						5710					5715			
Ala	Val	Ala	Asn	Val	Gly	Thr	Ser	Ile	Ser	Gly	His	Glu	Ser	Gln
5720						5725					5730			

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Ser	Ser	Val	Pro	Ala	Asp	Ser	His	Thr	Ser	Lys	Ala	Thr	Ser	Pro
5735						5740					5745			
Met	Gly	Ile	Thr	Phe	Ala	Met	Gly	Asp	Thr	Ser	Val	Ser	Thr	Ser
5750						5755					5760			
Thr	Pro	Ala	Phe	Phe	Glu	Thr	Arg	Ile	Gln	Thr	Glu	Ser	Thr	Ser
5765						5770					5775			
Ser	Leu	Ile	Pro	Gly	Leu	Arg	Asp	Thr	Arg	Thr	Ser	Glu	Glu	Ile
5780						5785					5790			
Asn	Thr	Val	Thr	Glu	Thr	Ser	Thr	Val	Leu	Ser	Glu	Val	Pro	Thr
5795						5800					5805			
Thr	Thr	Thr	Thr	Glu	Val	Ser	Arg	Thr	Glu	Val	Ile	Thr	Ser	Ser
5810						5815					5820			
Arg	Thr	Thr	Ile	Ser	Gly	Pro	Asp	His	Ser	Lys	Met	Ser	Pro	Tyr
5825						5830					5835			
Ile	Ser	Thr	Glu	Thr	Ile	Thr	Arg	Leu	Ser	Thr	Phe	Pro	Phe	Val
5840						5845					5850			
Thr	Gly	Ser	Thr	Glu	Met	Ala	Ile	Thr	Asn	Gln	Thr	Gly	Pro	Ile
5855						5860					5865			
Gly	Thr	Ile	Ser	Gln	Ala	Thr	Leu	Thr	Leu	Asp	Thr	Ser	Ser	Thr
5870						5875					5880			
Ala	Ser	Trp	Glu	Gly	Thr	His	Ser	Pro	Val	Thr	Gln	Arg	Phe	Pro
5885						5890					5895			
His	Ser	Glu	Glu	Thr	Thr	Thr	Met	Ser	Arg	Ser	Thr	Lys	Gly	Val
5900						5905					5910			
Ser	Trp	Gln	Ser	Pro	Pro	Ser	Val	Glu	Glu	Thr	Ser	Ser	Pro	Ser
5915						5920					5925			
Ser	Pro	Val	Pro	Leu	Pro	Ala	Ile	Thr	Ser	His	Ser	Ser	Leu	Tyr
5930						5935					5940			
Ser	Ala	Val	Ser	Gly	Ser	Ser	Pro	Thr	Ser	Ala	Leu	Pro	Val	Thr
5945						5950					5955			
Ser	Leu	Leu	Thr	Ser	Gly	Arg	Arg	Lys	Thr	Ile	Asp	Met	Leu	Asp
5960						5965					5970			
Thr	His	Ser	Glu	Leu	Val	Thr	Ser	Ser	Leu	Pro	Ser	Ala	Ser	Ser
5975						5980					5985			
Phe	Ser	Gly	Glu	Ile	Leu	Thr	Ser	Glu	Ala	Ser	Thr	Asn	Thr	Glu
5990						5995					6000			
Thr	Ile	His	Phe	Ser	Glu	Asn	Thr	Ala	Glu	Thr	Asn	Met	Gly	Thr
6005						6010					6015			
Thr	Asn	Ser	Met	His	Lys	Leu	His	Ser	Ser	Val	Ser	Ile	His	Ser
6020						6025					6030			
Gln	Pro	Ser	Gly	His	Thr	Pro	Pro	Lys	Val	Thr	Gly	Ser	Met	Met
6035						6040					6045			
Glu	Asp	Ala	Ile	Val	Ser	Thr	Ser	Thr	Pro	Gly	Ser	Pro	Glu	Thr
6050						6055					6060			
Lys	Asn	Val	Asp	Arg	Asp	Ser	Thr	Ser	Pro	Leu	Thr	Pro	Glu	Leu
6065						6070					6075			
Lys	Glu	Asp	Ser	Thr	Ala	Leu	Val	Met	Asn	Ser	Thr	Thr	Glu	Ser
6080						6085					6090			

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Asn Thr Val Phe Ser Ser	Val Ser Leu Asp Ala Ala	Thr Glu Val
6095	6100	6105
Ser Arg Ala Glu Val Thr	Tyr Tyr Asp Pro Thr	Phe Met Pro Ala
6110	6115	6120
Ser Ala Gln Ser Thr Lys	Ser Pro Asp Ile Ser	Pro Glu Ala Ser
6125	6130	6135
Ser Ser His Ser Asn Ser	Pro Pro Leu Thr Ile	Ser Thr His Lys
6140	6145	6150
Thr Ile Ala Thr Gln Thr	Gly Pro Ser Gly Val	Thr Ser Leu Gly
6155	6160	6165
Gln Leu Thr Leu Asp Thr	Ser Thr Ile Ala Thr	Ser Ala Gly Thr
6170	6175	6180
Pro Ser Ala Arg Thr Gln	Asp Phe Val Asp Ser	Glu Thr Thr Ser
6185	6190	6195
Val Met Asn Asn Asp Leu	Asn Asp Val Leu Lys	Thr Ser Pro Phe
6200	6205	6210
Ser Ala Glu Glu Ala Asn	Ser Leu Ser Ser Gln	Ala Pro Leu Leu
6215	6220	6225
Val Thr Thr Ser Pro Ser	Pro Val Thr Ser Thr	Leu Gln Glu His
6230	6235	6240
Ser Thr Ser Ser Leu Val	Ser Val Thr Ser Val	Pro Thr Pro Thr
6245	6250	6255
Leu Ala Lys Ile Thr Asp	Met Asp Thr Asn Leu	Glu Pro Val Thr
6260	6265	6270
Arg Ser Pro Gln Asn Leu	Arg Asn Thr Leu Ala	Thr Ser Glu Ala
6275	6280	6285
Thr Thr Asp Thr His Thr	Met His Pro Ser Ile	Asn Thr Ala Val
6290	6295	6300
Ala Asn Val Gly Thr Thr	Ser Ser Pro Asn Glu	Phe Tyr Phe Thr
6305	6310	6315
Val Ser Pro Asp Ser Asp	Pro Tyr Lys Ala Thr	Ser Ala Val Val
6320	6325	6330
Ile Thr Ser Thr Ser Gly	Asp Ser Ile Val Ser	Thr Ser Met Pro
6335	6340	6345
Arg Ser Ser Ala Met Lys	Lys Ile Glu Ser Glu	Thr Thr Phe Ser
6350	6355	6360
Leu Ile Phe Arg Leu Arg	Glu Thr Ser Thr Ser	Gln Lys Ile Gly
6365	6370	6375
Ser Ser Ser Asp Thr Ser	Thr Val Phe Asp Lys	Ala Phe Thr Ala
6380	6385	6390
Ala Thr Thr Glu Val Ser	Arg Thr Glu Leu Thr	Ser Ser Ser Arg
6395	6400	6405
Thr Ser Ile Gln Gly Thr	Glu Lys Pro Thr Met	Ser Pro Asp Thr
6410	6415	6420
Ser Thr Arg Ser Val Thr	Met Leu Ser Thr Phe	Ala Gly Leu Thr
6425	6430	6435
Lys Ser Glu Glu Arg Thr	Ile Ala Thr Gln Thr	Gly Pro His Arg
6440	6445	6450

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Ala Thr Ser Gln Gly Thr	Leu Thr Trp Asp Thr Ser	Ile Thr Thr
6455	6460	6465
Ser Gln Ala Gly Thr His	Ser Ala Met Thr His	Gly Phe Ser Gln
6470	6475	6480
Leu Asp Leu Ser Thr Leu	Thr Ser Arg Val Pro	Glu Tyr Ile Ser
6485	6490	6495
Gly Thr Ser Pro Pro Ser	Val Glu Lys Thr Ser	Ser Ser Ser
6500	6505	6510
Leu Leu Ser Leu Pro Ala	Ile Thr Ser Pro Ser	Pro Val Pro Thr
6515	6520	6525
Thr Leu Pro Glu Ser Arg	Pro Ser Ser Pro Val	His Leu Thr Ser
6530	6535	6540
Leu Pro Thr Ser Gly Leu	Val Lys Thr Thr Asp	Met Leu Ala Ser
6545	6550	6555
Val Ala Ser Leu Pro Pro	Asn Leu Gly Ser Thr	Ser His Lys Ile
6560	6565	6570
Pro Thr Thr Ser Glu Asp	Ile Lys Asp Thr Glu	Lys Met Tyr Pro
6575	6580	6585
Ser Thr Asn Ile Ala Val	Thr Asn Val Gly Thr	Thr Thr Ser Glu
6590	6595	6600
Lys Glu Ser Tyr Ser Ser	Val Pro Ala Tyr Ser	Glu Pro Pro Lys
6605	6610	6615
Val Thr Ser Pro Met Val	Thr Ser Phe Asn Ile	Arg Asp Thr Ile
6620	6625	6630
Val Ser Thr Ser Met Pro	Gly Ser Ser Glu Ile	Thr Arg Ile Glu
6635	6640	6645
Met Glu Ser Thr Phe Ser	Leu Ala His Gly Leu	Lys Gly Thr Ser
6650	6655	6660
Thr Ser Gln Asp Pro Ile	Val Ser Thr Glu Lys	Ser Ala Val Leu
6665	6670	6675
His Lys Leu Thr Thr Gly	Ala Thr Glu Thr Ser	Arg Thr Glu Val
6680	6685	6690
Ala Ser Ser Arg Arg Thr	Ser Ile Pro Gly Pro	Asp His Ser Thr
6695	6700	6705
Glu Ser Pro Asp Ile Ser	Thr Glu Val Ile Pro	Ser Leu Pro Ile
6710	6715	6720
Ser Leu Gly Ile Thr Glu	Ser Ser Asn Met Thr	Ile Ile Thr Arg
6725	6730	6735
Thr Gly Pro Pro Leu Gly	Ser Thr Ser Gln Gly	Thr Phe Thr Leu
6740	6745	6750
Asp Thr Pro Thr Thr Ser	Ser Arg Ala Gly Thr	His Ser Met Ala
6755	6760	6765
Thr Gln Glu Phe Pro His	Ser Glu Met Thr Thr	Val Met Asn Lys
6770	6775	6780
Asp Pro Glu Ile Leu Ser	Trp Thr Ile Pro Pro	Ser Ile Glu Lys
6785	6790	6795
Thr Ser Phe Ser Ser Ser	Leu Met Pro Ser Pro	Ala Met Thr Ser
6800	6805	6810

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Pro	Pro	Val	Ser	Ser	Thr	Leu	Pro	Lys	Thr	Ile	His	Thr	Thr	Pro
6815						6820					6825			
Ser	Pro	Met	Thr	Ser	Leu	Leu	Thr	Pro	Ser	Leu	Val	Met	Thr	Thr
6830						6835					6840			
Asp	Thr	Leu	Gly	Thr	Ser	Pro	Glu	Pro	Thr	Thr	Ser	Ser	Pro	Pro
6845						6850					6855			
Asn	Leu	Ser	Ser	Thr	Ser	His	Glu	Ile	Leu	Thr	Thr	Asp	Glu	Asp
6860						6865					6870			
Thr	Thr	Ala	Ile	Glu	Ala	Met	His	Pro	Ser	Thr	Ser	Thr	Ala	Ala
6875						6880					6885			
Thr	Asn	Val	Glu	Thr	Thr	Ser	Ser	Gly	His	Gly	Ser	Gln	Ser	Ser
6890						6895					6900			
Val	Leu	Ala	Asp	Ser	Glu	Lys	Thr	Lys	Ala	Thr	Ala	Pro	Met	Asp
6905						6910					6915			
Thr	Thr	Ser	Thr	Met	Gly	His	Thr	Thr	Val	Ser	Thr	Ser	Met	Ser
6920						6925					6930			
Val	Ser	Ser	Glu	Thr	Thr	Lys	Ile	Lys	Arg	Glu	Ser	Thr	Tyr	Ser
6935						6940					6945			
Leu	Thr	Pro	Gly	Leu	Arg	Glu	Thr	Ser	Ile	Ser	Gln	Asn	Ala	Ser
6950						6955					6960			
Phe	Ser	Thr	Asp	Thr	Ser	Ile	Val	Leu	Ser	Glu	Val	Pro	Thr	Gly
6965						6970					6975			
Thr	Thr	Ala	Glu	Val	Ser	Arg	Thr	Glu	Val	Thr	Ser	Ser	Gly	Arg
6980						6985					6990			
Thr	Ser	Ile	Pro	Gly	Pro	Ser	Gln	Ser	Thr	Val	Leu	Pro	Glu	Ile
6995						7000					7005			
Ser	Thr	Arg	Thr	Met	Thr	Arg	Leu	Phe	Ala	Ser	Pro	Thr	Met	Thr
7010						7015					7020			
Glu	Ser	Ala	Glu	Met	Thr	Ile	Pro	Thr	Gln	Thr	Gly	Pro	Ser	Gly
7025						7030					7035			
Ser	Thr	Ser	Gln	Asp	Thr	Leu	Thr	Leu	Asp	Thr	Ser	Thr	Thr	Lys
7040						7045					7050			
Ser	Gln	Ala	Lys	Thr	His	Ser	Thr	Leu	Thr	Gln	Arg	Phe	Pro	His
7055						7060					7065			
Ser	Glu	Met	Thr	Thr	Leu	Met	Ser	Arg	Gly	Pro	Gly	Asp	Met	Ser
7070						7075					7080			
Trp	Gln	Ser	Ser	Pro	Ser	Leu	Glu	Asn	Pro	Ser	Ser	Leu	Pro	Ser
7085						7090					7095			
Leu	Leu	Ser	Leu	Pro	Ala	Thr	Thr	Ser	Pro	Pro	Pro	Ile	Ser	Ser
7100						7105					7110			
Thr	Leu	Pro	Val	Thr	Ile	Ser	Ser	Ser	Pro	Leu	Pro	Val	Thr	Ser
7115						7120					7125			
Leu	Leu	Thr	Ser	Ser	Pro	Val	Thr	Thr	Thr	Asp	Met	Leu	His	Thr
7130						7135					7140			
Ser	Pro	Glu	Leu	Val	Thr	Ser	Ser	Pro	Pro	Lys	Leu	Ser	His	Thr
7145						7150					7155			
Ser	Asp	Glu	Arg	Leu	Thr	Thr	Gly	Lys	Asp	Thr	Thr	Asn	Thr	Glu
7160						7165					7170			

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Ala Val His Pro Ser Thr	Asn Thr Ala Ala Ser Asn	Val Glu Ile
7175	7180	7185
Pro Ser Ser Gly His Glu	Ser Pro Ser Ser Ala Leu	Ala Asp Ser
7190	7195	7200
Glu Thr Ser Lys Ala Thr	Ser Pro Met Phe Ile Thr	Ser Thr Gln
7205	7210	7215
Glu Asp Thr Thr Val Ala	Ile Ser Thr Pro His Phe	Leu Glu Thr
7220	7225	7230
Ser Arg Ile Gln Lys Glu	Ser Ile Ser Ser Leu Ser	Pro Lys Leu
7235	7240	7245
Arg Glu Thr Gly Ser Ser	Val Glu Thr Ser Ser Ala	Ile Glu Thr
7250	7255	7260
Ser Ala Val Leu Ser Glu	Val Ser Ile Gly Ala Thr	Thr Glu Ile
7265	7270	7275
Ser Arg Thr Glu Val Thr	Ser Ser Ser Arg Thr Ser	Ile Ser Gly
7280	7285	7290
Ser Ala Glu Ser Thr Met	Leu Pro Glu Ile Ser Thr	Thr Arg Lys
7295	7300	7305
Ile Ile Lys Phe Pro Thr	Ser Pro Ile Leu Ala Glu	Ser Ser Glu
7310	7315	7320
Met Thr Ile Lys Thr Gln	Thr Ser Pro Pro Gly Ser	Thr Ser Glu
7325	7330	7335
Ser Thr Phe Thr Leu Asp	Thr Ser Thr Thr Pro Ser	Leu Val Ile
7340	7345	7350
Thr His Ser Thr Met Thr	Gln Arg Leu Pro His Ser	Glu Ile Thr
7355	7360	7365
Thr Leu Val Ser Arg Gly	Ala Gly Asp Val Pro Arg	Pro Ser Ser
7370	7375	7380
Leu Pro Val Glu Glu Thr	Ser Pro Pro Ser Ser Gln	Leu Ser Leu
7385	7390	7395
Ser Ala Met Ile Ser Pro	Ser Pro Val Ser Ser Thr	Leu Pro Ala
7400	7405	7410
Ser Ser His Ser Ser Ser	Ala Ser Val Thr Ser Leu	Leu Thr Pro
7415	7420	7425
Gly Gln Val Lys Thr Thr	Glu Val Leu Asp Ala Ser	Ala Glu Pro
7430	7435	7440
Glu Thr Ser Ser Pro Pro	Ser Leu Ser Ser Thr Ser	Val Glu Ile
7445	7450	7455
Leu Ala Thr Ser Glu Val	Thr Thr Asp Thr Glu Lys	Ile His Pro
7460	7465	7470
Phe Ser Asn Thr Ala Val	Thr Lys Val Gly Thr Ser	Ser Ser Gly
7475	7480	7485
His Glu Ser Pro Ser Ser	Val Leu Pro Asp Ser Glu	Thr Thr Lys
7490	7495	7500
Ala Thr Ser Ala Met Gly	Thr Ile Ser Ile Met Gly	Asp Thr Ser
7505	7510	7515
Val Ser Thr Leu Thr Pro	Ala Leu Ser Asn Thr Arg	Lys Ile Gln
7520	7525	7530

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Ser	Glu	Pro	Ala	Ser	Ser	Leu	Thr	Thr	Arg	Leu	Arg	Glu	Thr	Ser
7535						7540					7545			
Thr	Ser	Glu	Glu	Thr	Ser	Leu	Ala	Thr	Glu	Ala	Asn	Thr	Val	Leu
7550						7555					7560			
Ser	Lys	Val	Ser	Thr	Gly	Ala	Thr	Thr	Glu	Val	Ser	Arg	Thr	Glu
7565						7570					7575			
Ala	Ile	Ser	Phe	Ser	Arg	Thr	Ser	Met	Ser	Gly	Pro	Glu	Gln	Ser
7580						7585					7590			
Thr	Met	Ser	Gln	Asp	Ile	Ser	Ile	Gly	Thr	Ile	Pro	Arg	Ile	Ser
7595						7600					7605			
Ala	Ser	Ser	Val	Leu	Thr	Glu	Ser	Ala	Lys	Met	Thr	Ile	Thr	Thr
7610						7615					7620			
Gln	Thr	Gly	Pro	Ser	Glu	Ser	Thr	Leu	Glu	Ser	Thr	Leu	Asn	Leu
7625						7630					7635			
Asn	Thr	Ala	Thr	Thr	Pro	Ser	Trp	Val	Glu	Thr	His	Ser	Ile	Val
7640						7645					7650			
Ile	Gln	Gly	Phe	Pro	His	Pro	Glu	Met	Thr	Thr	Ser	Met	Gly	Arg
7655						7660					7665			
Gly	Pro	Gly	Gly	Val	Ser	Trp	Pro	Ser	Pro	Pro	Phe	Val	Lys	Glu
7670						7675					7680			
Thr	Ser	Pro	Pro	Ser	Ser	Pro	Leu	Ser	Leu	Pro	Ala	Val	Thr	Ser
7685						7690					7695			
Pro	His	Pro	Val	Ser	Thr	Thr	Phe	Leu	Ala	His	Ile	Pro	Pro	Ser
7700						7705					7710			
Pro	Leu	Pro	Val	Thr	Ser	Leu	Leu	Thr	Ser	Gly	Pro	Ala	Thr	Thr
7715						7720					7725			
Thr	Asp	Ile	Leu	Gly	Thr	Ser	Thr	Glu	Pro	Gly	Thr	Ser	Ser	Ser
7730						7735					7740			
Ser	Ser	Leu	Ser	Thr	Thr	Ser	His	Glu	Arg	Leu	Thr	Thr	Tyr	Lys
7745						7750					7755			
Asp	Thr	Ala	His	Thr	Glu	Ala	Val	His	Pro	Ser	Thr	Asn	Thr	Gly
7760						7765					7770			
Gly	Thr	Asn	Val	Ala	Thr	Thr	Ser	Ser	Gly	Tyr	Lys	Ser	Gln	Ser
7775						7780					7785			
Ser	Val	Leu	Ala	Asp	Ser	Ser	Pro	Met	Cys	Thr	Thr	Ser	Thr	Met
7790						7795					7800			
Gly	Asp	Thr	Ser	Val	Leu	Thr	Ser	Thr	Pro	Ala	Phe	Leu	Glu	Thr
7805						7810					7815			
Arg	Arg	Ile	Gln	Thr	Glu	Leu	Ala	Ser	Ser	Leu	Thr	Pro	Gly	Leu
7820						7825					7830			
Arg	Glu	Ser	Ser	Gly	Ser	Glu	Gly	Thr	Ser	Ser	Gly	Thr	Lys	Met
7835						7840					7845			
Ser	Thr	Val	Leu	Ser	Lys	Val	Pro	Thr	Gly	Ala	Thr	Thr	Glu	Ile
7850						7855					7860			
Ser	Lys	Glu	Asp	Val	Thr	Ser	Ile	Pro	Gly	Pro	Ala	Gln	Ser	Thr
7865						7870					7875			
Ile	Ser	Pro	Asp	Ile	Ser	Thr	Arg	Thr	Val	Ser	Trp	Phe	Ser	Thr
7880						7885					7890			

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Ser	Pro	Val	Met	Thr	Glu	Ser	Ala	Glu	Ile	Thr	Met	Asn	Thr	His
7895						7900					7905			
Thr	Ser	Pro	Leu	Gly	Ala	Thr	Thr	Gln	Gly	Thr	Ser	Thr	Leu	Asp
7910						7915					7920			
Thr	Ser	Ser	Thr	Thr	Ser	Leu	Thr	Met	Thr	His	Ser	Thr	Ile	Ser
7925						7930					7935			
Gln	Gly	Phe	Ser	His	Ser	Gln	Met	Ser	Thr	Leu	Met	Arg	Arg	Gly
7940						7945					7950			
Pro	Glu	Asp	Val	Ser	Trp	Met	Ser	Pro	Pro	Leu	Leu	Glu	Lys	Thr
7955						7960					7965			
Arg	Pro	Ser	Phe	Ser	Leu	Met	Ser	Ser	Pro	Ala	Thr	Thr	Ser	Pro
7970						7975					7980			
Ser	Pro	Val	Ser	Ser	Thr	Leu	Pro	Glu	Ser	Ile	Ser	Ser	Ser	Pro
7985						7990					7995			
Leu	Pro	Val	Thr	Ser	Leu	Leu	Thr	Ser	Gly	Leu	Ala	Lys	Thr	Thr
8000						8005					8010			
Asp	Met	Leu	His	Lys	Ser	Ser	Glu	Pro	Val	Thr	Asn	Ser	Pro	Ala
8015						8020					8025			
Asn	Leu	Ser	Ser	Thr	Ser	Val	Glu	Ile	Leu	Ala	Thr	Ser	Glu	Val
8030						8035					8040			
Thr	Thr	Asp	Thr	Glu	Lys	Thr	His	Pro	Ser	Ser	Asn	Arg	Thr	Val
8045						8050					8055			
Thr	Asp	Val	Gly	Thr	Ser	Ser	Ser	Gly	His	Glu	Ser	Thr	Ser	Phe
8060						8065					8070			
Val	Leu	Ala	Asp	Ser	Gln	Thr	Ser	Lys	Val	Thr	Ser	Pro	Met	Val
8075						8080					8085			
Ile	Thr	Ser	Thr	Met	Glu	Asp	Thr	Ser	Val	Ser	Thr	Ser	Thr	Pro
8090						8095					8100			
Gly	Phe	Phe	Glu	Thr	Ser	Arg	Ile	Gln	Thr	Glu	Pro	Thr	Ser	Ser
8105						8110					8115			
Leu	Thr	Leu	Gly	Leu	Arg	Lys	Thr	Ser	Ser	Ser	Glu	Gly	Thr	Ser
8120						8125					8130			
Leu	Ala	Thr	Glu	Met	Ser	Thr	Val	Leu	Ser	Gly	Val	Pro	Thr	Gly
8135						8140					8145			
Ala	Thr	Ala	Glu	Val	Ser	Arg	Thr	Glu	Val	Thr	Ser	Ser	Ser	Arg
8150						8155					8160			
Thr	Ser	Ile	Ser	Gly	Phe	Ala	Gln	Leu	Thr	Val	Ser	Pro	Glu	Thr
8165						8170					8175			
Ser	Thr	Glu	Thr	Ile	Thr	Arg	Leu	Pro	Thr	Ser	Ser	Ile	Met	Thr
8180						8185					8190			
Glu	Ser	Ala	Glu	Met	Met	Ile	Lys	Thr	Gln	Thr	Asp	Pro	Pro	Gly
8195						8200					8205			
Ser	Thr	Pro	Glu	Ser	Thr	His	Thr	Val	Asp	Ile	Ser	Thr	Thr	Pro
8210						8215					8220			
Asn	Trp	Val	Glu	Thr	His	Ser	Thr	Val	Thr	Gln	Arg	Phe	Ser	His
8225						8230					8235			
Ser	Glu	Met	Thr	Thr	Leu	Val	Ser	Arg	Ser	Pro	Gly	Asp	Met	Leu
8240						8245					8250			

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Trp	Pro	Ser	Gln	Ser	Ser	Val	Glu	Glu	Thr	Ser	Ser	Ala	Ser	Ser
8255						8260						8265		
Leu	Leu	Ser	Leu	Pro	Ala	Thr	Thr	Ser	Pro	Ser	Pro	Val	Ser	Ser
8270						8275						8280		
Thr	Leu	Val	Glu	Asp	Phe	Pro	Ser	Ala	Ser	Leu	Pro	Val	Thr	Ser
8285						8290						8295		
Leu	Leu	Asn	Pro	Gly	Leu	Val	Ile	Thr	Thr	Asp	Arg	Met	Gly	Ile
8300						8305						8310		
Ser	Arg	Glu	Pro	Gly	Thr	Ser	Ser	Thr	Ser	Asn	Leu	Ser	Ser	Thr
8315						8320						8325		
Ser	His	Glu	Arg	Leu	Thr	Thr	Leu	Glu	Asp	Thr	Val	Asp	Thr	Glu
8330						8335						8340		
Asp	Met	Gln	Pro	Ser	Thr	His	Thr	Ala	Val	Thr	Asn	Val	Arg	Thr
8345						8350						8355		
Ser	Ile	Ser	Gly	His	Glu	Ser	Gln	Ser	Ser	Val	Leu	Ser	Asp	Ser
8360						8365						8370		
Glu	Thr	Pro	Lys	Ala	Thr	Ser	Pro	Met	Gly	Thr	Thr	Tyr	Thr	Met
8375						8380						8385		
Gly	Glu	Thr	Ser	Val	Ser	Ile	Ser	Thr	Ser	Asp	Phe	Phe	Glu	Thr
8390						8395						8400		
Ser	Arg	Ile	Gln	Ile	Glu	Pro	Thr	Ser	Ser	Leu	Thr	Ser	Gly	Leu
8405						8410						8415		
Arg	Glu	Thr	Ser	Ser	Ser	Glu	Arg	Ile	Ser	Ser	Ala	Thr	Glu	Gly
8420						8425						8430		
Ser	Thr	Val	Leu	Ser	Glu	Val	Pro	Ser	Gly	Ala	Thr	Thr	Glu	Val
8435						8440						8445		
Ser	Arg	Thr	Glu	Val	Ile	Ser	Ser	Arg	Gly	Thr	Ser	Met	Ser	Gly
8450						8455						8460		
Pro	Asp	Gln	Phe	Thr	Ile	Ser	Pro	Asp	Ile	Ser	Thr	Glu	Ala	Ile
8465						8470						8475		
Thr	Arg	Leu	Ser	Thr	Ser	Pro	Ile	Met	Thr	Glu	Ser	Ala	Glu	Ser
8480						8485						8490		
Ala	Ile	Thr	Ile	Glu	Thr	Gly	Ser	Pro	Gly	Ala	Thr	Ser	Glu	Gly
8495						8500						8505		
Thr	Leu	Thr	Leu	Asp	Thr	Ser	Thr	Thr	Thr	Phe	Trp	Ser	Gly	Thr
8510						8515						8520		
His	Ser	Thr	Ala	Ser	Pro	Gly	Phe	Ser	His	Ser	Glu	Met	Thr	Thr
8525						8530						8535		
Leu	Met	Ser	Arg	Thr	Pro	Gly	Asp	Val	Pro	Trp	Pro	Ser	Leu	Pro
8540						8545						8550		
Ser	Val	Glu	Glu	Ala	Ser	Ser	Val	Ser	Ser	Ser	Leu	Ser	Ser	Pro
8555						8560						8565		
Ala	Met	Thr	Ser	Thr	Ser	Phe	Phe	Ser	Thr	Leu	Pro	Glu	Ser	Ile
8570						8575						8580		
Ser	Ser	Ser	Pro	His	Pro	Val	Thr	Ala	Leu	Leu	Thr	Leu	Gly	Pro
8585						8590						8595		
Val	Lys	Thr	Thr	Asp	Met	Leu	Arg	Thr	Ser	Ser	Glu	Pro	Glu	Thr
8600						8605						8610		

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Ser	Ser	Pro	Pro	Asn	Leu	Ser	Ser	Thr	Ser	Ala	Glu	Ile	Leu	Ala
8615						8620					8625			
Thr	Ser	Glu	Val	Thr	Lys	Asp	Arg	Glu	Lys	Ile	His	Pro	Ser	Ser
8630						8635					8640			
Asn	Thr	Pro	Val	Val	Asn	Val	Gly	Thr	Val	Ile	Tyr	Lys	His	Leu
8645						8650					8655			
Ser	Pro	Ser	Ser	Val	Leu	Ala	Asp	Leu	Val	Thr	Thr	Lys	Pro	Thr
8660						8665					8670			
Ser	Pro	Met	Ala	Thr	Thr	Ser	Thr	Leu	Gly	Asn	Thr	Ser	Val	Ser
8675						8680					8685			
Thr	Ser	Thr	Pro	Ala	Phe	Pro	Glu	Thr	Met	Met	Thr	Gln	Pro	Thr
8690						8695					8700			
Ser	Ser	Leu	Thr	Ser	Gly	Leu	Arg	Glu	Ile	Ser	Thr	Ser	Gln	Glu
8705						8710					8715			
Thr	Ser	Ser	Ala	Thr	Glu	Arg	Ser	Ala	Ser	Leu	Ser	Gly	Met	Pro
8720						8725					8730			
Thr	Gly	Ala	Thr	Thr	Lys	Val	Ser	Arg	Thr	Glu	Ala	Leu	Ser	Leu
8735						8740					8745			
Gly	Arg	Thr	Ser	Thr	Pro	Gly	Pro	Ala	Gln	Ser	Thr	Ile	Ser	Pro
8750						8755					8760			
Glu	Ile	Ser	Thr	Glu	Thr	Ile	Thr	Arg	Ile	Ser	Thr	Pro	Leu	Thr
8765						8770					8775			
Thr	Thr	Gly	Ser	Ala	Glu	Met	Thr	Ile	Thr	Pro	Lys	Thr	Gly	His
8780						8785					8790			
Ser	Gly	Ala	Ser	Ser	Gln	Gly	Thr	Phe	Thr	Leu	Asp	Thr	Ser	Ser
8795						8800					8805			
Arg	Ala	Ser	Trp	Pro	Gly	Thr	His	Ser	Ala	Ala	Thr	His	Arg	Ser
8810						8815					8820			
Pro	His	Ser	Gly	Met	Thr	Thr	Pro	Met	Ser	Arg	Gly	Pro	Glu	Asp
8825						8830					8835			
Val	Ser	Trp	Pro	Ser	Arg	Pro	Ser	Val	Glu	Lys	Thr	Ser	Pro	Pro
8840						8845					8850			
Ser	Ser	Leu	Val	Ser	Leu	Ser	Ala	Val	Thr	Ser	Pro	Ser	Pro	Leu
8855						8860					8865			
Tyr	Ser	Thr	Pro	Ser	Glu	Ser	Ser	His	Ser	Ser	Pro	Leu	Arg	Val
8870						8875					8880			
Thr	Ser	Leu	Phe	Thr	Pro	Val	Met	Met	Lys	Thr	Thr	Asp	Met	Leu
8885						8890					8895			
Asp	Thr	Ser	Leu	Glu	Pro	Val	Thr	Thr	Ser	Pro	Pro	Ser	Met	Asn
8900						8905					8910			
Ile	Thr	Ser	Asp	Glu	Ser	Leu	Ala	Thr	Ser	Lys	Ala	Thr	Met	Glu
8915						8920					8925			
Thr	Glu	Ala	Ile	Gln	Leu	Ser	Glu	Asn	Thr	Ala	Val	Thr	Gln	Met
8930						8935					8940			
Gly	Thr	Ile	Ser	Ala	Arg	Gln	Glu	Phe	Tyr	Ser	Ser	Tyr	Pro	Gly
8945						8950					8955			
Leu	Pro	Glu	Pro	Ser	Lys	Val	Thr	Ser	Pro	Val	Val	Thr	Ser	Ser
8960						8965					8970			

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Thr Ile Lys Asp Ile Val Ser	Thr Thr Ile Pro Ala Ser Ser Glu
8975	8980 8985
Ile Thr Arg Ile Glu Met Glu	Ser Thr Ser Thr Leu Thr Pro Thr
8990	8995 9000
Pro Arg Glu Thr Ser Thr Ser	Gln Glu Ile His Ser Ala Thr Lys
9005	9010 9015
Pro Ser Thr Val Pro Tyr Lys	Ala Leu Thr Ser Ala Thr Ile Glu
9020	9025 9030
Asp Ser Met Thr Gln Val Met	Ser Ser Ser Arg Gly Pro Ser Pro
9035	9040 9045
Asp Gln Ser Thr Met Ser Gln	Asp Ile Ser Thr Glu Val Ile Thr
9050	9055 9060
Arg Leu Ser Thr Ser Pro Ile	Lys Thr Glu Ser Thr Glu Met Thr
9065	9070 9075
Ile Thr Thr Gln Thr Gly Ser	Pro Gly Ala Thr Ser Arg Gly Thr
9080	9085 9090
Leu Thr Leu Asp Thr Ser Thr	Thr Phe Met Ser Gly Thr His Ser
9095	9100 9105
Thr Ala Ser Gln Gly Phe Ser	His Ser Gln Met Thr Ala Leu Met
9110	9115 9120
Ser Arg Thr Pro Gly Asp Val	Pro Trp Leu Ser His Pro Ser Val
9125	9130 9135
Glu Glu Ala Ser Ser Ala Ser	Phe Ser Leu Ser Ser Pro Val Met
9140	9145 9150
Thr Ser Ser Ser Pro Val Ser	Ser Thr Leu Pro Asp Ser Ile His
9155	9160 9165
Ser Ser Ser Leu Pro Val Thr	Ser Leu Leu Thr Ser Gly Leu Val
9170	9175 9180
Lys Thr Thr Glu Leu Leu Gly	Thr Ser Ser Glu Pro Glu Thr Ser
9185	9190 9195
Ser Pro Pro Asn Leu Ser Ser	Thr Ser Ala Glu Ile Leu Ala Ile
9200	9205 9210
Thr Glu Val Thr Thr Asp Thr	Glu Lys Leu Glu Met Thr Asn Val
9215	9220 9225
Val Thr Ser Gly Tyr Thr His	Glu Ser Pro Ser Ser Val Leu Ala
9230	9235 9240
Asp Ser Val Thr Thr Lys Ala	Thr Ser Ser Met Gly Ile Thr Tyr
9245	9250 9255
Pro Thr Gly Asp Thr Asn Val	Leu Thr Ser Thr Pro Ala Phe Ser
9260	9265 9270
Asp Thr Ser Arg Ile Gln Thr	Lys Ser Lys Leu Ser Leu Thr Pro
9275	9280 9285
Gly Leu Met Glu Thr Ser Ile	Ser Glu Glu Thr Ser Ser Ala Thr
9290	9295 9300
Glu Lys Ser Thr Val Leu Ser	Ser Val Pro Thr Gly Ala Thr Thr
9305	9310 9315
Glu Val Ser Arg Thr Glu Ala	Ile Ser Ser Ser Arg Thr Ser Ile
9320	9325 9330

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Pro Gly	Pro Ala Gln Ser	Thr Met Ser Ser Asp Thr	Ser Met Glu
9335		9340	9345
Thr Ile	Thr Arg Ile Ser	Thr Pro Leu Thr Arg Lys	Glu Ser Thr
9350		9355	9360
Asp Met	Ala Ile Thr Pro	Lys Thr Gly Pro Ser Gly	Ala Thr Ser
9365		9370	9375
Gln Gly	Thr Phe Thr Leu	Asp Ser Ser Ser Thr Ala	Ser Trp Pro
9380		9385	9390
Gly Thr	His Ser Ala Thr	Thr Gln Arg Phe Pro Gln	Ser Val Val
9395		9400	9405
Thr Thr	Pro Met Ser Arg	Gly Pro Glu Asp Val Ser	Trp Pro Ser
9410		9415	9420
Pro Leu	Ser Val Glu Lys	Asn Ser Pro Pro Ser Ser	Leu Val Ser
9425		9430	9435
Ser Ser	Ser Val Thr Ser	Pro Ser Pro Leu Tyr Ser	Thr Pro Ser
9440		9445	9450
Gly Ser	Ser His Ser Ser	Pro Val Pro Val Thr Ser	Leu Phe Thr
9455		9460	9465
Ser Ile	Met Met Lys Ala	Thr Asp Met Leu Asp Ala	Ser Leu Glu
9470		9475	9480
Pro Glu	Thr Thr Ser Ala	Pro Asn Met Asn Ile Thr	Ser Asp Glu
9485		9490	9495
Ser Leu	Ala Ala Ser Lys	Ala Thr Thr Glu Thr Glu	Ala Ile His
9500		9505	9510
Val Phe	Glu Asn Thr Ala	Ala Ser His Val Glu Thr	Thr Ser Ala
9515		9520	9525
Thr Glu	Glu Leu Tyr Ser	Ser Ser Pro Gly Phe Ser	Glu Pro Thr
9530		9535	9540
Lys Val	Ile Ser Pro Val	Val Thr Ser Ser Ser Ile	Arg Asp Asn
9545		9550	9555
Met Val	Ser Thr Thr Met	Pro Gly Ser Ser Gly Ile	Thr Arg Ile
9560		9565	9570
Glu Ile	Glu Ser Met Ser	Ser Leu Thr Pro Gly Leu	Arg Glu Thr
9575		9580	9585
Arg Thr	Ser Gln Asp Ile	Thr Ser Ser Thr Glu Thr	Ser Thr Val
9590		9595	9600
Leu Tyr	Lys Met Pro Ser	Gly Ala Thr Pro Glu Val	Ser Arg Thr
9605		9610	9615
Glu Val	Met Pro Ser Ser	Arg Thr Ser Ile Pro Gly	Pro Ala Gln
9620		9625	9630
Ser Thr	Met Ser Leu Asp	Ile Ser Asp Glu Val Val	Thr Arg Leu
9635		9640	9645
Ser Thr	Ser Pro Ile Met	Thr Glu Ser Ala Glu Ile	Thr Ile Thr
9650		9655	9660
Thr Gln	Thr Gly Tyr Ser	Leu Ala Thr Ser Gln Val	Thr Leu Pro
9665		9670	9675
Leu Gly	Thr Ser Met Thr	Phe Leu Ser Gly Thr His	Ser Thr Met
9680		9685	9690

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Ser	Gln	Gly	Leu	Ser	His	Ser	Glu	Met	Thr	Asn	Leu	Met	Ser	Arg
9695						9700					9705			
Gly	Pro	Glu	Ser	Leu	Ser	Trp	Thr	Ser	Pro	Arg	Phe	Val	Glu	Thr
9710						9715					9720			
Thr	Arg	Ser	Ser	Ser	Ser	Leu	Thr	Ser	Leu	Pro	Leu	Thr	Thr	Ser
9725						9730					9735			
Leu	Ser	Pro	Val	Ser	Ser	Thr	Leu	Leu	Asp	Ser	Ser	Pro	Ser	Ser
9740						9745					9750			
Pro	Leu	Pro	Val	Thr	Ser	Leu	Ile	Leu	Pro	Gly	Leu	Val	Lys	Thr
9755						9760					9765			
Thr	Glu	Val	Leu	Asp	Thr	Ser	Ser	Glu	Pro	Lys	Thr	Ser	Ser	Ser
9770						9775					9780			
Pro	Asn	Leu	Ser	Ser	Thr	Ser	Val	Glu	Ile	Pro	Ala	Thr	Ser	Glu
9785						9790					9795			
Ile	Met	Thr	Asp	Thr	Glu	Lys	Ile	His	Pro	Ser	Ser	Asn	Thr	Ala
9800						9805					9810			
Val	Ala	Lys	Val	Arg	Thr	Ser	Ser	Ser	Val	His	Glu	Ser	His	Ser
9815						9820					9825			
Ser	Val	Leu	Ala	Asp	Ser	Glu	Thr	Thr	Ile	Thr	Ile	Pro	Ser	Met
9830						9835					9840			
Gly	Ile	Thr	Ser	Ala	Val	Asp	Asp	Thr	Thr	Val	Phe	Thr	Ser	Asn
9845						9850					9855			
Pro	Ala	Phe	Ser	Glu	Thr	Arg	Arg	Ile	Pro	Thr	Glu	Pro	Thr	Phe
9860						9865					9870			
Ser	Leu	Thr	Pro	Gly	Phe	Arg	Glu	Thr	Ser	Thr	Ser	Glu	Glu	Thr
9875						9880					9885			
Thr	Ser	Ile	Thr	Glu	Thr	Ser	Ala	Val	Leu	Tyr	Gly	Val	Pro	Thr
9890						9895					9900			
Ser	Ala	Thr	Thr	Glu	Val	Ser	Met	Thr	Glu	Ile	Met	Ser	Ser	Asn
9905						9910					9915			
Arg	Ile	His	Ile	Pro	Asp	Ser	Asp	Gln	Ser	Thr	Met	Ser	Pro	Asp
9920						9925					9930			
Ile	Ile	Thr	Glu	Val	Ile	Thr	Arg	Leu	Ser	Ser	Ser	Ser	Met	Met
9935						9940					9945			
Ser	Glu	Ser	Thr	Gln	Met	Thr	Ile	Thr	Thr	Gln	Lys	Ser	Ser	Pro
9950						9955					9960			
Gly	Ala	Thr	Ala	Gln	Ser	Thr	Leu	Thr	Leu	Ala	Thr	Thr	Thr	Ala
9965						9970					9975			
Pro	Leu	Ala	Arg	Thr	His	Ser	Thr	Val	Pro	Pro	Arg	Phe	Leu	His
9980						9985					9990			
Ser	Glu	Met	Thr	Thr	Leu	Met	Ser	Arg	Ser	Pro	Glu	Asn	Pro	Ser
9995						10000					10005			
Trp	Lys	Ser	Ser	Leu	Phe	Val	Glu	Lys	Thr	Ser	Ser	Ser	Ser	Ser
10010						10015					10020			
Leu	Leu	Ser	Leu	Pro	Val	Thr	Thr	Ser	Pro	Ser	Val	Ser	Ser	Thr
10025						10030					10035			
Leu	Pro	Gln	Ser	Ile	Pro	Ser	Ser	Ser	Phe	Ser	Val	Thr	Ser	Leu
10040						10045					10050			

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Leu Thr	Pro Gly Met Val	Lys Thr Thr Asp Thr	Ser Thr Glu Pro
10055		10060	10065
Gly Thr	Ser Leu Ser Pro	Asn Leu Ser Gly Thr	Ser Val Glu Ile
10070		10075	10080
Leu Ala	Ala Ser Glu Val	Thr Thr Asp Thr Glu	Lys Ile His Pro
10085		10090	10095
Ser Ser	Ser Met Ala Val	Thr Asn Val Gly Thr	Thr Ser Ser Gly
10100		10105	10110
His Glu	Leu Tyr Ser Ser	Val Ser Ile His Ser	Glu Pro Ser Lys
10115		10120	10125
Ala Thr	Tyr Pro Val Gly	Thr Pro Ser Ser Met	Ala Glu Thr Ser
10130		10135	10140
Ile Ser	Thr Ser Met Pro	Ala Asn Phe Glu Thr	Thr Gly Phe Glu
10145		10150	10155
Ala Glu	Pro Phe Ser His	Leu Thr Ser Gly Phe	Arg Lys Thr Asn
10160		10165	10170
Met Ser	Leu Asp Thr Ser	Ser Val Thr Pro Thr	Asn Thr Pro Ser
10175		10180	10185
Ser Pro	Gly Ser Thr His	Leu Leu Gln Ser Ser	Lys Thr Asp Phe
10190		10195	10200
Thr Ser	Ser Ala Lys Thr	Ser Ser Pro Asp Trp	Pro Pro Ala Ser
10205		10210	10215
Gln Tyr	Thr Glu Ile Pro	Val Asp Ile Ile Thr	Pro Phe Asn Ala
10220		10225	10230
Ser Pro	Ser Ile Thr Glu	Ser Thr Gly Ile Thr	Ser Phe Pro Glu
10235		10240	10245
Ser Arg	Phe Thr Met Ser	Val Thr Glu Ser Thr	His His Leu Ser
10250		10255	10260
Thr Asp	Leu Leu Pro Ser	Ala Glu Thr Ile Ser	Thr Gly Thr Val
10265		10270	10275
Met Pro	Ser Leu Ser Glu	Ala Met Thr Ser Phe	Ala Thr Thr Gly
10280		10285	10290
Val Pro	Arg Ala Ile Ser	Gly Ser Gly Ser Pro	Phe Ser Arg Thr
10295		10300	10305
Glu Ser	Gly Pro Gly Asp	Ala Thr Leu Ser Thr	Ile Ala Glu Ser
10310		10315	10320
Leu Pro	Ser Ser Thr Pro	Val Pro Phe Ser Ser	Ser Thr Phe Thr
10325		10330	10335
Thr Thr	Asp Ser Ser Thr	Ile Pro Ala Leu His	Glu Ile Thr Ser
10340		10345	10350
Ser Ser	Ala Thr Pro Tyr	Arg Val Asp Thr Ser	Leu Gly Thr Glu
10355		10360	10365
Ser Ser	Thr Thr Glu Gly	Arg Leu Val Met Val	Ser Thr Leu Asp
10370		10375	10380
Thr Ser	Ser Gln Pro Gly	Arg Thr Ser Ser Ser	Pro Ile Leu Asp
10385		10390	10395
Thr Arg	Met Thr Glu Ser	Val Glu Leu Gly Thr	Val Thr Ser Ala
10400		10405	10410

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Tyr	Gln	Val	Pro	Ser	Leu	Ser	Thr	Arg	Leu	Thr	Arg	Thr	Asp	Gly
10415						10420					10425			
Ile	Met	Glu	His	Ile	Thr	Lys	Ile	Pro	Asn	Glu	Ala	Ala	His	Arg
10430						10435					10440			
Gly	Thr	Ile	Arg	Pro	Val	Lys	Gly	Pro	Gln	Thr	Ser	Thr	Ser	Pro
10445						10450					10455			
Ala	Ser	Pro	Lys	Gly	Leu	His	Thr	Gly	Gly	Thr	Lys	Arg	Met	Glu
10460						10465					10470			
Thr	Thr	Thr	Thr	Ala	Leu	Lys	Thr	Thr	Thr	Thr	Ala	Leu	Lys	Thr
10475						10480					10485			
Thr	Ser	Arg	Ala	Thr	Leu	Thr	Thr	Ser	Val	Tyr	Thr	Pro	Thr	Leu
10490						10495					10500			
Gly	Thr	Leu	Thr	Pro	Leu	Asn	Ala	Ser	Met	Gln	Met	Ala	Ser	Thr
10505						10510					10515			
Ile	Pro	Thr	Glu	Met	Met	Ile	Thr	Thr	Pro	Tyr	Val	Phe	Pro	Asp
10520						10525					10530			
Val	Pro	Glu	Thr	Thr	Ser	Ser	Leu	Ala	Thr	Ser	Leu	Gly	Ala	Glu
10535						10540					10545			
Thr	Ser	Thr	Ala	Leu	Pro	Arg	Thr	Thr	Pro	Ser	Val	Phe	Asn	Arg
10550						10555					10560			
Glu	Ser	Glu	Thr	Thr	Ala	Ser	Leu	Val	Ser	Arg	Ser	Gly	Ala	Glu
10565						10570					10575			
Arg	Ser	Pro	Val	Ile	Gln	Thr	Leu	Asp	Val	Ser	Ser	Ser	Glu	Pro
10580						10585					10590			
Asp	Thr	Thr	Ala	Ser	Trp	Val	Ile	His	Pro	Ala	Glu	Thr	Ile	Pro
10595						10600					10605			
Thr	Val	Ser	Lys	Thr	Thr	Pro	Asn	Phe	Phe	His	Ser	Glu	Leu	Asp
10610						10615					10620			
Thr	Val	Ser	Ser	Thr	Ala	Thr	Ser	His	Gly	Ala	Asp	Val	Ser	Ser
10625						10630					10635			
Ala	Ile	Pro	Thr	Asn	Ile	Ser	Pro	Ser	Glu	Leu	Asp	Ala	Leu	Thr
10640						10645					10650			
Pro	Leu	Val	Thr	Ile	Ser	Gly	Thr	Asp	Thr	Ser	Thr	Thr	Phe	Pro
10655						10660					10665			
Thr	Leu	Thr	Lys	Ser	Pro	His	Glu	Thr	Glu	Thr	Arg	Thr	Thr	Trp
10670						10675					10680			
Leu	Thr	His	Pro	Ala	Glu	Thr	Ser	Ser	Thr	Ile	Pro	Arg	Thr	Ile
10685						10690					10695			
Pro	Asn	Phe	Ser	His	His	Glu	Ser	Asp	Ala	Thr	Pro	Ser	Ile	Ala
10700						10705					10710			
Thr	Ser	Pro	Gly	Ala	Glu	Thr	Ser	Ser	Ala	Ile	Pro	Ile	Met	Thr
10715						10720					10725			
Val	Ser	Pro	Gly	Ala	Glu	Asp	Leu	Val	Thr	Ser	Gln	Val	Thr	Ser
10730						10735					10740			
Ser	Gly	Thr	Asp	Arg	Asn	Met	Thr	Ile	Pro	Thr	Leu	Thr	Leu	Ser
10745						10750					10755			
Pro	Gly	Glu	Pro	Lys	Thr	Ile	Ala	Ser	Leu	Val	Thr	His	Pro	Glu
10760						10765					10770			

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Ala	Gln	Thr	Ser	Ser	Ala	Ile	Pro	Thr	Ser	Thr	Ile	Ser	Pro	Ala
10775						10780					10785			
Val	Ser	Arg	Leu	Val	Thr	Ser	Met	Val	Thr	Ser	Leu	Ala	Ala	Lys
10790						10795					10800			
Thr	Ser	Thr	Thr	Asn	Arg	Ala	Leu	Thr	Asn	Ser	Pro	Gly	Glu	Pro
10805						10810					10815			
Ala	Thr	Thr	Val	Ser	Leu	Val	Thr	His	Pro	Ala	Gln	Thr	Ser	Pro
10820						10825					10830			
Thr	Val	Pro	Trp	Thr	Thr	Ser	Ile	Phe	Phe	His	Ser	Lys	Ser	Asp
10835						10840					10845			
Thr	Thr	Pro	Ser	Met	Thr	Thr	Ser	His	Gly	Ala	Glu	Ser	Ser	Ser
10850						10855					10860			
Ala	Val	Pro	Thr	Pro	Thr	Val	Ser	Thr	Glu	Val	Pro	Gly	Val	Val
10865						10870					10875			
Thr	Pro	Leu	Val	Thr	Ser	Ser	Arg	Ala	Val	Ile	Ser	Thr	Thr	Ile
10880						10885					10890			
Pro	Ile	Leu	Thr	Leu	Ser	Pro	Gly	Glu	Pro	Glu	Thr	Thr	Pro	Ser
10895						10900					10905			
Met	Ala	Thr	Ser	His	Gly	Glu	Glu	Ala	Ser	Ser	Ala	Ile	Pro	Thr
10910						10915					10920			
Pro	Thr	Val	Ser	Pro	Gly	Val	Pro	Gly	Val	Val	Thr	Ser	Leu	Val
10925						10930					10935			
Thr	Ser	Ser	Arg	Ala	Val	Thr	Ser	Thr	Thr	Ile	Pro	Ile	Leu	Thr
10940						10945					10950			
Phe	Ser	Leu	Gly	Glu	Pro	Glu	Thr	Thr	Pro	Ser	Met	Ala	Thr	Ser
10955						10960					10965			
His	Gly	Thr	Glu	Ala	Gly	Ser	Ala	Val	Pro	Thr	Val	Leu	Pro	Glu
10970						10975					10980			
Val	Pro	Gly	Met	Val	Thr	Ser	Leu	Val	Ala	Ser	Ser	Arg	Ala	Val
10985						10990					10995			
Thr	Ser	Thr	Thr	Leu	Pro	Thr	Leu	Thr	Leu	Ser	Pro	Gly	Glu	Pro
11000						11005					11010			
Glu	Thr	Thr	Pro	Ser	Met	Ala	Thr	Ser	His	Gly	Ala	Glu	Ala	Ser
11015						11020					11025			
Ser	Thr	Val	Pro	Thr	Val	Ser	Pro	Glu	Val	Pro	Gly	Val	Val	Thr
11030						11035					11040			
Ser	Leu	Val	Thr	Ser	Ser	Ser	Gly	Val	Asn	Ser	Thr	Ser	Ile	Pro
11045						11050					11055			
Thr	Leu	Ile	Leu	Ser	Pro	Gly	Glu	Leu	Glu	Thr	Thr	Pro	Ser	Met
11060						11065					11070			
Ala	Thr	Ser	His	Gly	Ala	Glu	Ala	Ser	Ser	Ala	Val	Pro	Thr	Pro
11075						11080					11085			
Thr	Val	Ser	Pro	Gly	Val	Ser	Gly	Val	Val	Thr	Pro	Leu	Val	Thr
11090						11095					11100			
Ser	Ser	Arg	Ala	Val	Thr	Ser	Thr	Thr	Ile	Pro	Ile	Leu	Thr	Leu
11105						11110					11115			
Ser	Ser	Ser	Glu	Pro	Glu	Thr	Thr	Pro	Ser	Met	Ala	Thr	Ser	His
11120						11125					11130			

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Gly Val	Glu Ala Ser Ser	Ala Val Leu Thr Val Ser	Pro Glu Val
11135		11140	11145
Pro Gly	Met Val Thr Ser	Leu Val Thr Ser Ser Arg	Ala Val Thr
11150		11155	11160
Ser Thr	Thr Ile Pro Thr	Leu Thr Ile Ser Ser Asp	Glu Pro Glu
11165		11170	11175
Thr Thr	Thr Ser Leu Val Thr	His Ser Glu Ala Lys	Met Ile Ser
11180		11185	11190
Ala Ile	Pro Thr Leu Ala Val	Ser Pro Thr Val Gln	Gly Leu Val
11195		11200	11205
Thr Ser	Leu Val Thr Ser	Ser Gly Ser Glu Thr Ser	Ala Phe Ser
11210		11215	11220
Asn Leu	Thr Val Ala Ser	Ser Gln Pro Glu Thr Ile	Asp Ser Trp
11225		11230	11235
Val Ala	His Pro Gly Thr	Glu Ala Ser Ser Val Val	Pro Thr Leu
11240		11245	11250
Thr Val	Ser Thr Gly Glu Pro	Phe Thr Asn Ile Ser	Leu Val Thr
11255		11260	11265
His Pro	Ala Glu Ser Ser	Ser Thr Leu Pro Arg Thr	Thr Ser Arg
11270		11275	11280
Phe Ser	His Ser Glu Leu Asp	Thr Met Pro Ser Thr	Val Thr Ser
11285		11290	11295
Pro Glu	Ala Glu Ser Ser	Ser Ala Ile Ser Thr Thr	Ile Ser Pro
11300		11305	11310
Gly Ile	Pro Gly Val Leu Thr	Ser Leu Val Thr Ser	Ser Gly Arg
11315		11320	11325
Asp Ile	Ser Ala Thr Phe Pro	Thr Val Pro Glu Ser	Pro His Glu
11330		11335	11340
Ser Glu	Ala Thr Ala Ser Trp	Val Thr His Pro Ala	Val Thr Ser
11345		11350	11355
Thr Thr	Val Pro Arg Thr Thr	Pro Asn Tyr Ser His	Ser Glu Pro
11360		11365	11370
Asp Thr	Thr Pro Ser Ile Ala	Thr Ser Pro Gly Ala	Glu Ala Thr
11375		11380	11385
Ser Asp	Phe Pro Thr Ile Thr	Val Ser Pro Asp Val	Pro Asp Met
11390		11395	11400
Val Thr	Ser Gln Val Thr Ser	Ser Gly Thr Asp Thr	Ser Ile Thr
11405		11410	11415
Ile Pro	Thr Leu Thr Leu Ser	Ser Gly Glu Pro Glu	Thr Thr Thr
11420		11425	11430
Ser Phe	Ile Thr Tyr Ser Glu	Thr His Thr Ser Ser	Ala Ile Pro
11435		11440	11445
Thr Leu	Pro Val Ser Pro Gly	Ala Ser Lys Met Leu	Thr Ser Leu
11450		11455	11460
Val Ile	Ser Ser Gly Thr Asp	Ser Thr Thr Thr Phe	Pro Thr Leu
11465		11470	11475
Thr Glu	Thr Pro Tyr Glu Pro	Glu Thr Thr Ala Ile	Gln Leu Ile
11480		11485	11490

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His	Pro	Ala	Glu	Thr	Asn	Thr	Met	Val	Pro	Arg	Thr	Thr	Pro	Lys
11495						11500					11505			
Phe	Ser	His	Ser	Lys	Ser	Asp	Thr	Thr	Leu	Pro	Val	Ala	Ile	Thr
11510						11515					11520			
Ser	Pro	Gly	Pro	Glu	Ala	Ser	Ser	Ala	Val	Ser	Thr	Thr	Thr	Ile
11525						11530					11535			
Ser	Pro	Asp	Met	Ser	Asp	Leu	Val	Thr	Ser	Leu	Val	Pro	Ser	Ser
11540						11545					11550			
Gly	Thr	Asp	Thr	Ser	Thr	Thr	Phe	Pro	Thr	Leu	Ser	Glu	Thr	Pro
11555						11560					11565			
Tyr	Glu	Pro	Glu	Thr	Thr	Ala	Thr	Trp	Leu	Thr	His	Pro	Ala	Glu
11570						11575					11580			
Thr	Ser	Thr	Thr	Val	Ser	Gly	Thr	Ile	Pro	Asn	Phe	Ser	His	Arg
11585						11590					11595			
Gly	Ser	Asp	Thr	Ala	Pro	Ser	Met	Val	Thr	Ser	Pro	Gly	Val	Asp
11600						11605					11610			
Thr	Arg	Ser	Gly	Val	Pro	Thr	Thr	Thr	Ile	Pro	Pro	Ser	Ile	Pro
11615						11620					11625			
Gly	Val	Val	Thr	Ser	Gln	Val	Thr	Ser	Ser	Ala	Thr	Asp	Thr	Ser
11630						11635					11640			
Thr	Ala	Ile	Pro	Thr	Leu	Thr	Pro	Ser	Pro	Gly	Glu	Pro	Glu	Thr
11645						11650					11655			
Thr	Ala	Ser	Ser	Ala	Thr	His	Pro	Gly	Thr	Gln	Thr	Gly	Phe	Thr
11660						11665					11670			
Val	Pro	Ile	Arg	Thr	Val	Pro	Ser	Ser	Glu	Pro	Asp	Thr	Met	Ala
11675						11680					11685			
Ser	Trp	Val	Thr	His	Pro	Pro	Gln	Thr	Ser	Thr	Pro	Val	Ser	Arg
11690						11695					11700			
Thr	Thr	Ser	Ser	Phe	Ser	His	Ser	Ser	Pro	Asp	Ala	Thr	Pro	Val
11705						11710					11715			
Met	Ala	Thr	Ser	Pro	Arg	Thr	Glu	Ala	Ser	Ser	Ala	Val	Leu	Thr
11720						11725					11730			
Thr	Ile	Ser	Pro	Gly	Ala	Pro	Glu	Met	Val	Thr	Ser	Gln	Ile	Thr
11735						11740					11745			
Ser	Ser	Gly	Ala	Ala	Thr	Ser	Thr	Thr	Val	Pro	Thr	Leu	Thr	His
11750						11755					11760			
Ser	Pro	Gly	Met	Pro	Glu	Thr	Thr	Ala	Leu	Leu	Ser	Thr	His	Pro
11765						11770					11775			
Arg	Thr	Glu	Thr	Ser	Lys	Thr	Phe	Pro	Ala	Ser	Thr	Val	Phe	Pro
11780						11785					11790			
Gln	Val	Ser	Glu	Thr	Thr	Ala	Ser	Leu	Thr	Ile	Arg	Pro	Gly	Ala
11795						11800					11805			
Glu	Thr	Ser	Thr	Ala	Leu	Pro	Thr	Gln	Thr	Thr	Ser	Ser	Leu	Phe
11810						11815					11820			
Thr	Leu	Leu	Val	Thr	Gly	Thr	Ser	Arg	Val	Asp	Leu	Ser	Pro	Thr
11825						11830					11835			
Ala	Ser	Pro	Gly	Val	Ser	Ala	Lys	Thr	Ala	Pro	Leu	Ser	Thr	His
11840						11845					11850			

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Pro	Gly	Thr	Glu	Thr	Ser	Thr	Met	Ile	Pro	Thr	Ser	Thr	Leu	Ser
	11855					11860					11865			
Leu	Gly	Leu	Leu	Glu	Thr	Thr	Gly	Leu	Leu	Ala	Thr	Ser	Ser	Ser
	11870					11875					11880			
Ala	Glu	Thr	Ser	Thr	Ser	Thr	Leu	Thr	Leu	Thr	Val	Ser	Pro	Ala
	11885					11890					11895			
Val	Ser	Gly	Leu	Ser	Ser	Ala	Ser	Ile	Thr	Thr	Asp	Lys	Pro	Gln
	11900					11905					11910			
Thr	Val	Thr	Ser	Trp	Asn	Thr	Glu	Thr	Ser	Pro	Ser	Val	Thr	Ser
	11915					11920					11925			
Val	Gly	Pro	Pro	Glu	Phe	Ser	Arg	Thr	Val	Thr	Gly	Thr	Thr	Met
	11930					11935					11940			
Thr	Leu	Ile	Pro	Ser	Glu	Met	Pro	Thr	Pro	Pro	Lys	Thr	Ser	His
	11945					11950					11955			
Gly	Glu	Gly	Val	Ser	Pro	Thr	Thr	Ile	Leu	Arg	Thr	Thr	Met	Val
	11960					11965					11970			
Glu	Ala	Thr	Asn	Leu	Ala	Thr	Thr	Gly	Ser	Ser	Pro	Thr	Val	Ala
	11975					11980					11985			
Lys	Thr	Thr	Thr	Thr	Phe	Asn	Thr	Leu	Ala	Gly	Ser	Leu	Phe	Thr
	11990					11995					12000			
Pro	Leu	Thr	Thr	Pro	Gly	Met	Ser	Thr	Leu	Ala	Ser	Glu	Ser	Val
	12005					12010					12015			
Thr	Ser	Arg	Thr	Ser	Tyr	Asn	His	Arg	Ser	Trp	Ile	Ser	Thr	Thr
	12020					12025					12030			
Ser	Ser	Tyr	Asn	Arg	Arg	Tyr	Trp	Thr	Pro	Ala	Thr	Ser	Thr	Pro
	12035					12040					12045			
Val	Thr	Ser	Thr	Phe	Ser	Pro	Gly	Ile	Ser	Thr	Ser	Ser	Ile	Pro
	12050					12055					12060			
Ser	Ser	Thr	Ala	Ala	Thr	Val	Pro	Phe	Met	Val	Pro	Phe	Thr	Leu
	12065					12070					12075			
Asn	Phe	Thr	Ile	Thr	Asn	Leu	Gln	Tyr	Glu	Glu	Asp	Met	Arg	His
	12080					12085					12090			
Pro	Gly	Ser	Arg	Lys	Phe	Asn	Ala	Thr	Glu	Arg	Glu	Leu	Gln	Gly
	12095					12100					12105			
Leu	Leu	Lys	Pro	Leu	Phe	Arg	Asn	Ser	Ser	Leu	Glu	Tyr	Leu	Tyr
	12110					12115					12120			
Ser	Gly	Cys	Arg	Leu	Ala	Ser	Leu	Arg	Pro	Glu	Lys	Asp	Ser	Ser
	12125					12130					12135			
Ala	Thr	Ala	Val	Asp	Ala	Ile	Cys	Thr	His	Arg	Pro	Asp	Pro	Glu
	12140					12145					12150			
Asp	Leu	Gly	Leu	Asp	Arg	Glu	Arg	Leu	Tyr	Trp	Glu	Leu	Ser	Asn
	12155					12160					12165			
Leu	Thr	Asn	Gly	Ile	Gln	Glu	Leu	Gly	Pro	Tyr	Thr	Leu	Asp	Arg
	12170					12175					12180			
Asn	Ser	Leu	Tyr	Val	Asn	Gly	Phe	Thr	His	Arg	Ser	Ser	Met	Pro
	12185					12190			</					

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Gly Thr	Pro Ser Ser Ser	Pro Ser Pro Thr Thr	Ala Gly Pro Leu
12215		12220	12225
Leu Met	Pro Phe Thr Leu	Asn Phe Thr Ile Thr	Asn Leu Gln Tyr
12230		12235	12240
Glu Glu	Asp Met Arg Arg	Thr Gly Ser Arg Lys	Phe Asn Thr Met
12245		12250	12255
Glu Ser	Val Leu Gln Gly	Leu Leu Lys Pro Leu	Phe Lys Asn Thr
12260		12265	12270
Ser Val	Gly Pro Leu Tyr	Ser Gly Cys Arg Leu	Thr Leu Leu Arg
12275		12280	12285
Pro Glu	Lys Asp Gly Ala	Ala Thr Gly Val Asp	Ala Ile Cys Thr
12290		12295	12300
His Arg	Leu Asp Pro Lys	Ser Pro Gly Leu Asn	Arg Glu Gln Leu
12305		12310	12315
Tyr Trp	Glu Leu Ser Lys	Leu Thr Asn Asp Ile	Glu Glu Leu Gly
12320		12325	12330
Pro Tyr	Thr Leu Asp Arg	Asn Ser Leu Tyr Val	Asn Gly Phe Thr
12335		12340	12345
His Gln	Ser Ser Val Ser	Thr Thr Ser Thr Pro	Gly Thr Ser Thr
12350		12355	12360
Val Asp	Leu Arg Thr Ser	Gly Thr Pro Ser Ser	Leu Ser Ser Pro
12365		12370	12375
Thr Ile	Met Ala Ala Gly	Pro Leu Leu Val Pro	Phe Thr Leu Asn
12380		12385	12390
Phe Thr	Ile Thr Asn Leu	Gln Tyr Gly Glu Asp	Met Gly His Pro
12395		12400	12405
Gly Ser	Arg Lys Phe Asn	Thr Thr Glu Arg Val	Leu Gln Gly Leu
12410		12415	12420
Leu Gly	Pro Ile Phe Lys	Asn Thr Ser Val Gly	Pro Leu Tyr Ser
12425		12430	12435
Gly Cys	Arg Leu Thr Ser	Leu Arg Ser Glu Lys	Asp Gly Ala Ala
12440		12445	12450
Thr Gly	Val Asp Ala Ile	Cys Ile His His Leu	Asp Pro Lys Ser
12455		12460	12465
Pro Gly	Leu Asn Arg Glu	Arg Leu Tyr Trp Glu	Leu Ser Gln Leu
12470		12475	12480
Thr Asn	Gly Ile Lys Glu	Leu Gly Pro Tyr Thr	Leu Asp Arg Asn
12485		12490	12495
Ser Leu	Tyr Val Asn Gly	Phe Thr His Arg Thr	Ser Val Pro Thr
12500		12505	12510
Ser Ser	Thr Pro Gly Thr	Ser Thr Val Asp Leu	Gly Thr Ser Gly
12515		12520	12525
Thr Pro	Phe Ser Leu Pro	Ser Pro Ala Thr Ala	Gly Pro Leu Leu
12530		12535	12540
Val Leu	Phe Thr Leu Asn	Phe Thr Ile Thr Asn	Leu Lys Tyr Glu
12545		12550	12555
Glu Asp	Met His Arg Pro	Gly Ser Arg Lys Phe	Asn Thr Thr Glu
12560		12565	12570

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Arg Val	Leu Gln Thr Leu	Leu Gly Pro Met Phe Lys	Asn Thr Ser
12575		12580	12585
Val Gly	Leu Leu Tyr Ser	Gly Cys Arg Leu Thr	Leu Leu Arg Ser
12590		12595	12600
Glu Lys	Asp Gly Ala Ala	Thr Gly Val Asp Ala	Ile Cys Thr His
12605		12610	12615
Arg Leu	Asp Pro Lys Ser	Pro Gly Val Asp Arg	Glu Gln Leu Tyr
12620		12625	12630
Trp Glu	Leu Ser Gln Leu	Thr Asn Gly Ile Lys	Glu Leu Gly Pro
12635		12640	12645
Tyr Thr	Leu Asp Arg Asn	Ser Leu Tyr Val Asn	Gly Phe Thr His
12650		12655	12660
Trp Ile	Pro Val Pro Thr	Ser Ser Thr Pro Gly	Thr Ser Thr Val
12665		12670	12675
Asp Leu	Gly Ser Gly Thr	Pro Ser Ser Leu Pro	Ser Pro Thr Thr
12680		12685	12690
Ala Gly	Pro Leu Leu Val	Pro Phe Thr Leu Asn	Phe Thr Ile Thr
12695		12700	12705
Asn Leu	Lys Tyr Glu Glu	Asp Met His Cys Pro	Gly Ser Arg Lys
12710		12715	12720
Phe Asn	Thr Thr Glu Arg	Val Leu Gln Ser Leu	Leu Gly Pro Met
12725		12730	12735
Phe Lys	Asn Thr Ser Val	Gly Pro Leu Tyr Ser	Gly Cys Arg Leu
12740		12745	12750
Thr Leu	Leu Arg Ser Glu	Lys Asp Gly Ala Ala	Thr Gly Val Asp
12755		12760	12765
Ala Ile	Cys Thr His Arg	Leu Asp Pro Lys Ser	Pro Gly Val Asp
12770		12775	12780
Arg Glu	Gln Leu Tyr Trp	Glu Leu Ser Gln Leu	Thr Asn Gly Ile
12785		12790	12795
Lys Glu	Leu Gly Pro Tyr	Thr Leu Asp Arg Asn	Ser Leu Tyr Val
12800		12805	12810
Asn Gly	Phe Thr His Gln	Thr Ser Ala Pro Asn	Thr Ser Thr Pro
12815		12820	12825
Gly Thr	Ser Thr Val Asp	Leu Gly Thr Ser Gly	Thr Pro Ser Ser
12830		12835	12840
Leu Pro	Ser Pro Thr Ser	Ala Gly Pro Leu Leu	Val Pro Phe Thr
12845		12850	12855
Leu Asn	Phe Thr Ile Thr	Asn Leu Gln Tyr Glu	Glu Asp Met His
12860		12865	12870
His Pro	Gly Ser Arg Lys	Phe Asn Thr Thr Glu	Arg Val Leu Gln
12875		12880	12885
Gly Leu	Leu Gly Pro Met	Phe Lys Asn Thr Ser	Val Gly Leu Leu
12890		12895	12900
Tyr Ser	Gly Cys Arg Leu	Thr Leu Leu Arg Pro	Glu Lys Asn Gly
12905		12910	12915
Ala Ala	Thr Gly Met Asp	Ala Ile Cys Ser His	Arg Leu Asp Pro
12920		12925	12930

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Lys	Ser	Pro	Gly	Leu	Asn	Arg	Glu	Gln	Leu	Tyr	Trp	Glu	Leu	Ser
12935						12940					12945			
Gln	Leu	Thr	His	Gly	Ile	Lys	Glu	Leu	Gly	Pro	Tyr	Thr	Leu	Asp
12950						12955					12960			
Arg	Asn	Ser	Leu	Tyr	Val	Asn	Gly	Phe	Thr	His	Arg	Ser	Ser	Val
12965						12970					12975			
Ala	Pro	Thr	Ser	Thr	Pro	Gly	Thr	Ser	Thr	Val	Asp	Leu	Gly	Thr
12980						12985					12990			
Ser	Gly	Thr	Pro	Ser	Ser	Leu	Pro	Ser	Pro	Thr	Thr	Ala	Val	Pro
12995						13000					13005			
Leu	Leu	Val	Pro	Phe	Thr	Leu	Asn	Phe	Thr	Ile	Thr	Asn	Leu	Gln
13010						13015					13020			
Tyr	Gly	Glu	Asp	Met	Arg	His	Pro	Gly	Ser	Arg	Lys	Phe	Asn	Thr
13025						13030					13035			
Thr	Glu	Arg	Val	Leu	Gln	Gly	Leu	Leu	Gly	Pro	Leu	Phe	Lys	Asn
13040						13045					13050			
Ser	Ser	Val	Gly	Pro	Leu	Tyr	Ser	Gly	Cys	Arg	Leu	Ile	Ser	Leu
13055						13060					13065			
Arg	Ser	Glu	Lys	Asp	Gly	Ala	Ala	Thr	Gly	Val	Asp	Ala	Ile	Cys
13070						13075					13080			
Thr	His	His	Leu	Asn	Pro	Gln	Ser	Pro	Gly	Leu	Asp	Arg	Glu	Gln
13085						13090					13095			
Leu	Tyr	Trp	Gln	Leu	Ser	Gln	Met	Thr	Asn	Gly	Ile	Lys	Glu	Leu
13100						13105					13110			
Gly	Pro	Tyr	Thr	Leu	Asp	Arg	Asn	Ser	Leu	Tyr	Val	Asn	Gly	Phe
13115						13120					13125			
Thr	His	Arg	Ser	Ser	Gly	Leu	Thr	Thr	Ser	Thr	Pro	Trp	Thr	Ser
13130						13135					13140			
Thr	Val	Asp	Leu	Gly	Thr	Ser	Gly	Thr	Pro	Ser	Pro	Val	Pro	Ser
13145						13150					13155			
Pro	Thr	Thr	Thr	Gly	Pro	Leu	Leu	Val	Pro	Phe	Thr	Leu	Asn	Phe
13160						13165					13170			
Thr	Ile	Thr	Asn	Leu	Gln	Tyr	Glu	Glu	Asn	Met	Gly	His	Pro	Gly
13175						13180					13185			
Ser	Arg	Lys	Phe	Asn	Ile	Thr	Glu	Ser	Val	Leu	Gln	Gly	Leu	Leu
13190						13195					13200			
Lys	Pro	Leu	Phe	Lys	Ser	Thr	Ser	Val	Gly	Pro	Leu	Tyr	Ser	Gly
13205						13210					13215			
Cys	Arg	Leu	Thr	Leu	Leu	Arg	Pro	Glu	Lys	Asp	Gly	Val	Ala	Thr
13220						13225					13230			
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Pro Ser	Ser Leu Pro Gly	Pro Thr Ala Thr Gly	Pro Val Leu Leu
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Pro Phe	Thr Leu Asn Phe	Thr Ile Thr Asn Leu Gln	Tyr Glu Glu
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Asp Met	Arg Arg Pro Gly	Ser Arg Lys Phe Asn Thr	Thr Glu Arg
13340		13345	13350
Val Leu	Gln Gly Leu Leu	Met Pro Leu Phe Lys Asn	Thr Ser Val
13355		13360	13365
Ser Ser	Leu Tyr Ser Gly	Cys Arg Leu Thr Leu Leu	Arg Pro Glu
13370		13375	13380
Lys Asp	Gly Ala Ala Thr	Arg Val Asp Ala Val Cys	Thr His Arg
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Pro Asp	Pro Lys Ser Pro	Gly Leu Asp Arg Glu Arg	Leu Tyr Trp
13400		13405	13410
Lys Leu	Ser Gln Leu Thr	His Gly Ile Thr Glu Leu	Gly Pro Tyr
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Thr Leu	Asp Arg His Ser	Leu Tyr Val Asn Gly Phe	Thr His Gln
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Ser Ser	Met Thr Thr Thr	Arg Thr Pro Asp Thr Ser	Thr Met His
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Leu Ala	Thr Ser Arg Thr	Pro Ala Ser Leu Ser Gly	Pro Met Thr
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Ala Ser	Pro Leu Leu Val	Leu Phe Thr Ile Asn Phe	Thr Ile Thr
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Asn Leu	Arg Tyr Glu Glu	Asn Met His His Pro Gly	Ser Arg Lys
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Phe Asn	Thr Thr Glu Arg	Val Leu Gln Gly Leu Leu	Arg Pro Val
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Phe Lys	Asn Thr Ser Val	Gly Pro Leu Tyr Ser Gly	Cys Arg Leu
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Thr Leu	Leu Arg Pro Lys	Lys Asp Gly Ala Ala Thr	Lys Val Asp
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Ala Ile	Cys Thr Tyr Arg	Pro Asp Pro Lys Ser Pro	Gly Leu Asp
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Arg Glu	Gln Leu Tyr Trp	Glu Leu Ser Gln Leu Thr	His Ser Ile
13565		13570	13575
Thr Glu	Leu Gly Pro Tyr	Thr Leu Asp Arg Asp Ser	Leu Tyr Val
13580		13585	13590
Asn Gly	Phe Thr Gln Arg	Ser Ser Val Pro Thr Thr	Ser Ile Pro
13595		13600	13605
Gly Thr	Pro Thr Val Asp	Leu Gly Thr Ser Gly Thr	Pro Val Ser
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Lys Pro	Gly Pro Ser Ala	Ala Ser Pro Leu Leu Val	Leu Phe Thr
13625		13630	13635
Leu Asn	Phe Thr Ile Thr	Asn Leu Arg Tyr Glu Glu	Asn Met Gln
13640		13645	13650

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His Pro	Asp Pro Val Gly Pro	Gly Leu Asp Ile Gln	Gln Leu Tyr
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Ile Thr	Leu Leu Arg Asp Ile	Gln Asp Lys Val Thr	Thr Leu Tyr
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Ile Thr	Asn Leu Pro Tyr Ser	Gln Asp Lys Ala Gln	Pro Gly Thr
14330	14335	14340	
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Asp Gly	Tyr Ser Pro Asn Arg	Asn Glu Pro Leu Thr	Gly Asn Ser
14435		14440	14445
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14450		14455	14460
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14465		14470	14475
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catattccca ggacaaagcc cagccaggca ccaccaatta ccagaggaaac aaaaggaata 43260
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gcccaggcta ctaccagtca cacctagacc tggaggatct gcaatgactg gaacttgccg 43740
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<210> 138

<211> 518

<212> PRT

<213> Artificial Sequence

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<220>

<223> Bispecific

<400> 138

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

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```

Lys Asn Thr Ala Phe Leu Gln Met Asp Ser Leu Arg Pro Glu Asp Thr
    355                      360                      365
Gly Val Tyr Phe Cys Ala Arg Tyr Tyr Asp Asp His Tyr Cys Leu Asp
    370                      375                      380
Tyr Trp Gly Gln Gly Thr Pro Val Thr Val Ser Ser Gly Gly Gly Gly
385                      390                      395                      400
Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Gln Met Thr
    405                      410                      415
Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly Asp Arg Val Thr Ile
    420                      425                      430
Thr Cys Ser Ala Ser Ser Ser Val Ser Tyr Met Asn Trp Tyr Gln Gln
    435                      440                      445
Thr Pro Gly Lys Ala Pro Lys Arg Trp Ile Tyr Asp Thr Ser Lys Leu
    450                      455                      460
Ala Ser Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp
465                      470                      475                      480
Tyr Thr Phe Thr Ile Ser Ser Leu Gln Pro Glu Asp Ile Ala Thr Tyr
    485                      490                      495
Tyr Cys Gln Gln Trp Ser Ser Asn Pro Phe Thr Phe Gly Cys Gly Thr
    500                      505                      510
Lys Leu Gln Ile Thr Arg
    515

```

<210> 139

<211> 114

<212> PRT

<213> Artificial Sequence

<220>

<223> MUC16c114-N3

<400> 139

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

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Sequence_Listing_13542-016-228

<210> 140
<211> 366
<212> DNA
<213> Artificial Sequence

<220>
<223> 10C6 VH NUCLEIC ACID

<400> 140
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acttgttctt tctctgggtt ttcactgaac actcttggta tgggtgtagg ctggattcgg 120
cagccttcag ggaagggtct ggagtggctg gcacacattt ggtgggatga tgataagtac 180
tataaccag ccctgaagag tcggctcaca atctccaagg attcctccaa aaaccagggt 240
ttcctcaaga tcgccaatgt ggacactgca gatattgcca catactactg ttctcgaatc 300
gggacagctc aggctacgga tgctctggac tactgggggc aaggaacctc agtcaccgtc 360
tcctca 366

<210> 141
<211> 330
<212> DNA
<213> Artificial Sequence

<220>
<223> 10C6 VL NUCLEIC ACID

<400> 141
gacattgtgc tgacacagtc tcctgcttcc ttagctgtat ctctggggca gagggccacc 60
atctcataca gggccagcaa aagtgtcagt acatctggct atagttatat gcactggaac 120
caacagaaac caggacagcc acccagactc ctcatctatc ttgtatccaa cctagaatct 180
gggggtccctg ccaggttcag tggcagtggg tctgggacag acttcaccct caacatccat 240
cctgtggagg aggaggatgc tgcaacctat tactgtcagc acattaggga gcttacacgt 300
tcggaggggg gaccaagctg gaaataaaac 330

<210> 142
<211> 369
<212> DNA
<213> Artificial Sequence

<220>
<223> 7B12 VH NUCLEIC ACID

<400> 142
caggttactc tgaaagagtc tggccctggg atattgcagc cctcccagac cctcagtctg 60
acttgttctt tctctgggtt ttcactgagc actgttggta tgggtgtagg ctggagtcgt 120
cagccctcag ggaagggtct ggagtggctg gcacacatct ggtgggatga tgaagataag 180

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```
tattataatc cagccctgaa gagtcggctc acaatctcca aggatacctc caaaaaccag 240
gtcttcctca agatcgccaa tgtggacact gcagatagtg ccacatacta ctgtactcga 300
atcgggacag ctcaggctac ggatgctttg gactactggg gtcaaggaac ctcagtcacc 360
gtcttcctca 369
```

<210> 143

<211> 336

<212> DNA

<213> Artificial Sequence

<220>

<223> 7B12 VL NUCLEIC ACID

<400> 143

```
gatattgtga tgactcaggc tgcaccctct gtatctgtca ctcttgga gtcagtatcc 60
atctcctgca ggtctagtaa gagtcttcgg aaaagtaatg gcaacactta cttgtattgg 120
ttcctgcaga ggccaggcca gtctcctcag cgcttgatat attatatgtc caaccttgcc 180
tcaggagtcc cagacagggt cagtggcaga gggtcaggaa ctgatttcac actgagaatc 240
agtagagtgg aggctgaaga tgtgggtgtt tattactgta tgcaaagtct agaataatcct 300
ctcacgttcg gaggggggac taagctaaaa ataaaa 336
```

<210> 144

<211> 366

<212> DNA

<213> Artificial Sequence

<220>

<223> 19C11 VH NUCLEIC ACID

<400> 144

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cagtcttcag ggaagggtct ggagtggctg gcacacattt ggtgggatga tgataagtac 180
tataaccag ccctgaagag tcggctcaca atctccaggg ctacctcaa aaaccagggt 240
ttcctcaaga tcgtcaatgt gggcactgca gatactgcca catattactg tgctcgaatc 300
gggacagctc aggctacgga tgctttggac tattgggggtc agggaacctc agtcaccgtt 360
tcctca 366
```

<210> 145

<211> 336

<212> DNA

<213> Artificial Sequence

<220>

<223> 19C11 VL NUCLEIC ACID

<400> 145

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gatattgtga tgactcaggc tgcaccctct atccctgtca ctcttgga gtcagtatcc 60
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Sequence_Listing_13542-016-228

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atctcctgca ggtctagtaa gagtcttctg catagtaatg gcaacactta tttgtattgg 120
ttcctgcaga ggccaggcca gtctcctcag cgcctgatat attatatgtc caaccttgcc 180
tcaggagtcc cagacagggt cagtggcaga gggctaggaa ctgatttcac actgaaaatc 240
agtagagtgg aggctgggga tgtgggtggt tattactgta tgcagggtct agagcatcct 300
ctcacgttcg gaggggggac caagctggaa ataaaaa 336
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<210> 146

<211> 366

<212> DNA

<213> Artificial Sequence

<220>

<223> 16C5 VH NUCLEIC ACID

<400> 146

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caggttactc tgaaagagtc tggccctgga atattgcagc cctcccagac cctcagtctg 60
acttgttctt tctctgggtt ttcactgaac actcttggtg tgggtgtagg ctggattcgt 120
cagcccttcag ggaagggtct ggagtggctg gcacacattt ggtgggatga tgataagtac 180
tattaccagag ccctgaagag tcggctcaca atctccaggg atacctcaa aaaccaggta 240
ttcctcaaga tcgccaatgt ggacactgca gatactgcca catactactg tgctcgaatc 300
gggacagctc aggctacgga tgctctggac tactgggggc aaggaaacctc agtcaccgtc 360
tcctca 366
```

<210> 147

<211> 327

<212> DNA

<213> Artificial Sequence

<220>

<223> 16C5 VL NUCLEIC ACID

<400> 147

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gagctcgata tgaccagac tccaccctcc ctgtctgcat ctgtgggaga aactgtcagg 60
attaggtgcc tggccagtga ggacatttat agtggatatat cctggatatca acagaagcca 120
gggaaacctc ctacactcct gatctatggt gcatccaatt tagaatctgg ggtcccacca 180
cggttcagtg gcagtggatc tgggacagat tacaccctca ccattggcgg cgtgcaggct 240
gaagatgctg ccacctacta ctgtctaggc gggttatagtt atagtagtac cttgactttt 300
ggagctggca ccaatgtgga aatcaaaa 327
```

<210> 148

<211> 369

<212> DNA

<213> Artificial Sequence

<220>

<223> 18C6 VH NUCLEIC ACID

<400> 148

Sequence_Listing_13542-016-228

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caggttactc tgaaagagtc tggccctggg atattgcagc cctcccagac cctcagtctg 60
acttgttctt tctctggggtt ttacttgagc actgttggtg tgggtgtagg ctggagtcgt 120
cagccttcag ggaagggtct ggagtggctg gcacacattt ggtgggatga tgaggataag 180
tattataacc cagccctgaa gagtcggctc acaatctcca aggatacctc caaaaaccag 240
gtattcctca agatcgccaa tgtggacact gcagatactg ccacatacta ctgtactcga 300
atcgggacag ctcaggctac ggatgctttg gactactggg gtcaaggaac ctcagtcacc 360
gtctcctca 369
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<210> 149

<211> 336

<212> DNA

<213> Artificial Sequence

<220>

<223> 18C6 VL NUCLEIC ACID

<400> 149

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gatattgtga tgactcaggc tgcaccctct gtacctgtca ctcctggaga gtcagtatcc 60
atctcctgca ggtctagtaa gagtcttctg catagtaatg gcaacactta cttgtattgg 120
ttcctgcaga ggccaggcca gtctcctcag cgcctgatat attatatgtc caaccttgcc 180
tcaggagtcc cagacagggt cagtggcaga gggtcaggaa ctgatttcac actgagaatc 240
agtagagtgg aggctgagga tgtgggtgtt tattactgta tgcaaagtct agaatatcct 300
ctcacgttcg gagggggggac caagctggaa ataaaaa 336
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<210> 150

<211> 14447

<212> PRT

<213> Homo sapiens

<220>

<223> Mature Human MUC16 amino acid sequence

<400> 150

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

Sequence_Listing_13542-016-228

Gly	Asp	Ser	Thr	Glu	Thr	Pro	Trp	Asp	Thr	Arg	Tyr	Ile	Pro	Val	Lys
		115					120					125			
Ile	Thr	Ser	Pro	Met	Lys	Thr	Phe	Ala	Asp	Ser	Thr	Ala	Ser	Lys	Glu
	130					135					140				
Asn	Ala	Pro	Val	Ser	Met	Thr	Pro	Ala	Glu	Thr	Thr	Val	Thr	Asp	Ser
145					150					155					160
His	Thr	Pro	Gly	Arg	Thr	Asn	Pro	Ser	Phe	Gly	Thr	Leu	Tyr	Ser	Ser
			165						170					175	
Phe	Leu	Asp	Leu	Ser	Pro	Lys	Gly	Thr	Pro	Asn	Ser	Arg	Gly	Glu	Thr
		180					185					190			
Ser	Leu	Glu	Leu	Ile	Leu	Ser	Thr	Thr	Gly	Tyr	Pro	Phe	Ser	Ser	Pro
	195						200					205			
Glu	Pro	Gly	Ser	Ala	Gly	His	Ser	Arg	Ile	Ser	Thr	Ser	Ala	Pro	Leu
	210					215					220				
Ser	Ser	Ser	Ala	Ser	Val	Leu	Asp	Asn	Lys	Ile	Ser	Glu	Thr	Ser	Ile
225					230				235						240
Phe	Ser	Gly	Gln	Ser	Leu	Thr	Ser	Pro	Leu	Ser	Pro	Gly	Val	Pro	Glu
			245						250					255	
Ala	Arg	Ala	Ser	Thr	Met	Pro	Asn	Ser	Ala	Ile	Pro	Phe	Ser	Met	Thr
		260						265				270			
Leu	Ser	Asn	Ala	Glu	Thr	Ser	Ala	Glu	Arg	Val	Arg	Ser	Thr	Ile	Ser
	275						280					285			
Ser	Leu	Gly	Thr	Pro	Ser	Ile	Ser	Thr	Lys	Gln	Thr	Ala	Glu	Thr	Ile
	290					295					300				
Leu	Thr	Phe	His	Ala	Phe	Ala	Glu	Thr	Met	Asp	Ile	Pro	Ser	Thr	His
305					310					315					320
Ile	Ala	Lys	Thr	Leu	Ala	Ser	Glu	Trp	Leu	Gly	Ser	Pro	Gly	Thr	Leu
			325						330					335	
Gly	Gly	Thr	Ser	Thr	Ser	Ala	Leu	Thr	Thr	Thr	Ser	Pro	Ser	Thr	Thr
		340						345					350		
Leu	Val	Ser	Glu	Glu	Thr	Asn	Thr	His	His	Ser	Thr	Ser	Gly	Lys	Glu
	355						360					365			
Thr	Glu	Gly	Thr	Leu	Asn	Thr	Ser	Met	Thr	Pro	Leu	Glu	Thr	Ser	Ala
	370					375					380				
Pro	Gly	Glu	Glu	Ser	Glu	Met	Thr	Ala	Thr	Leu	Val	Pro	Thr	Leu	Gly
385					390					395					400
Phe	Thr	Thr	Leu	Asp	Ser	Lys	Ile	Arg	Ser	Pro	Ser	Gln	Val	Ser	Ser
			405						410					415	
Ser	His	Pro	Thr	Arg	Glu	Leu	Arg	Thr	Thr	Gly	Ser	Thr	Ser	Gly	Arg
			420					425					430		
Gln	Ser	Ser	Ser	Thr	Ala	Ala	His	Gly	Ser	Ser	Asp	Ile	Leu	Arg	Ala
	435						440					445			
Thr	Thr	Ser	Ser	Thr	Ser	Lys	Ala	Ser	Ser	Trp	Thr	Ser	Glu	Ser	Thr
	450					455					460				
Ala	Gln	Gln	Phe	Ser	Glu	Pro	Gln	His	Thr	Gln	Trp	Val	Glu	Thr	Ser
465					470					475					480
Pro	Ser	Met	Lys	Thr	Glu	Arg	Pro	Pro	Ala	Ser	Thr	Ser	Val	Ala	Ala
				485					490					495	

Sequence_Listing_13542-016-228

Pro	Ile	Thr	Thr	Ser	Val	Pro	Ser	Val	Val	Ser	Gly	Phe	Thr	Thr	Leu
			500					505					510		
Lys	Thr	Ser	Ser	Thr	Lys	Gly	Ile	Trp	Leu	Glu	Glu	Thr	Ser	Ala	Asp
		515				520						525			
Thr	Leu	Ile	Gly	Glu	Ser	Thr	Ala	Gly	Pro	Thr	Thr	His	Gln	Phe	Ala
	530					535					540				
Val	Pro	Thr	Gly	Ile	Ser	Met	Thr	Gly	Gly	Ser	Ser	Thr	Arg	Gly	Ser
545					550					555					560
Gln	Gly	Thr	Thr	His	Leu	Leu	Thr	Arg	Ala	Thr	Ala	Ser	Ser	Glu	Thr
				565					570					575	
Ser	Ala	Asp	Leu	Thr	Leu	Ala	Thr	Asn	Gly	Val	Pro	Val	Ser	Val	Ser
			580					585					590		
Pro	Ala	Val	Ser	Lys	Thr	Ala	Ala	Gly	Ser	Ser	Pro	Pro	Gly	Gly	Thr
	595					600						605			
Lys	Pro	Ser	Tyr	Thr	Met	Val	Ser	Ser	Val	Ile	Pro	Glu	Thr	Ser	Ser
	610					615					620				
Leu	Gln	Ser	Ser	Ala	Phe	Arg	Glu	Gly	Thr	Ser	Leu	Gly	Leu	Thr	Pro
625					630					635					640
Leu	Asn	Thr	Arg	His	Pro	Phe	Ser	Ser	Pro	Glu	Pro	Asp	Ser	Ala	Gly
				645					650					655	
His	Thr	Lys	Ile	Ser	Thr	Ser	Ile	Pro	Leu	Leu	Ser	Ser	Ala	Ser	Val
		660						665					670		
Leu	Glu	Asp	Lys	Val	Ser	Ala	Thr	Ser	Thr	Phe	Ser	His	His	Lys	Ala
		675				680					685				
Thr	Ser	Ser	Ile	Thr	Thr	Gly	Thr	Pro	Glu	Ile	Ser	Thr	Lys	Thr	Lys
	690					695					700				
Pro	Ser	Ser	Ala	Val	Leu	Ser	Ser	Met	Thr	Leu	Ser	Asn	Ala	Ala	Thr
705				710						715					720
Ser	Pro	Glu	Arg	Val	Arg	Asn	Ala	Thr	Ser	Pro	Leu	Thr	His	Pro	Ser
				725					730					735	
Pro	Ser	Gly	Glu	Glu	Thr	Ala	Gly	Ser	Val	Leu	Thr	Leu	Ser	Thr	Ser
		740						745					750		
Ala	Glu	Thr	Thr	Asp	Ser	Pro	Asn	Ile	His	Pro	Thr	Gly	Thr	Leu	Thr
		755					760					765			
Ser	Glu	Ser	Ser	Glu	Ser	Pro	Ser	Thr	Leu	Ser	Leu	Pro	Ser	Val	Ser
	770					775					780				
Gly	Val	Lys	Thr	Thr	Phe	Ser	Ser	Ser	Thr	Pro	Ser	Thr	His	Leu	Phe
785					790					795					800
Thr	Ser	Gly	Glu	Glu	Thr	Glu	Glu	Thr	Ser	Asn	Pro	Ser	Val	Ser	Gln
				805					810					815	
Pro	Glu	Thr	Ser	Val	Ser	Arg	Val	Arg	Thr	Thr	Leu	Ala	Ser	Thr	Ser
		820						825					830		
Val	Pro	Thr	Pro	Val	Phe	Pro	Thr	Met	Asp	Thr	Trp	Pro	Thr	Arg	Ser
		835					840					845			
Ala	Gln	Phe	Ser	Ser	Ser	His	Leu	Val	Ser	Glu	Leu	Arg	Ala	Thr	Ser
	850					855					860				
Ser	Thr	Ser	Val	Thr	Asn	Ser	Thr	Gly	Ser	Ala	Leu	Pro	Lys	Ile	Ser
865					870					875					880

Sequence_Listing_13542-016-228

His	Leu	Thr	Gly	Thr	Ala	Thr	Met	Ser	Gln	Thr	Asn	Arg	Asp	Thr	Phe	885	890	895
Asn	Asp	Ser	Ala	Ala	Pro	Gln	Ser	Thr	Thr	Trp	Pro	Glu	Thr	Ser	Pro	900	905	910
Arg	Phe	Lys	Thr	Gly	Leu	Pro	Ser	Ala	Thr	Thr	Thr	Val	Ser	Thr	Ser	915	920	925
Ala	Thr	Ser	Leu	Ser	Ala	Thr	Val	Met	Val	Ser	Lys	Phe	Thr	Ser	Pro	930	935	940
Ala	Thr	Ser	Ser	Met	Glu	Ala	Thr	Ser	Ile	Arg	Glu	Pro	Ser	Thr	Thr	945	950	955
Ile	Leu	Thr	Thr	Glu	Thr	Thr	Asn	Gly	Pro	Gly	Ser	Met	Ala	Val	Ala	965	970	975
Ser	Thr	Asn	Ile	Pro	Ile	Gly	Lys	Gly	Tyr	Ile	Thr	Glu	Gly	Arg	Leu	980	985	990
Asp	Thr	Ser	His	Leu	Pro	Ile	Gly	Thr	Thr	Ala	Ser	Ser	Glu	Thr	Ser	995	1000	1005
Met	Asp	Phe	Thr	Met	Ala	Lys	Glu	Ser	Val	Ser	Met	Ser	Val	Ser		1010	1015	1020
Pro	Ser	Gln	Ser	Met	Asp	Ala	Ala	Gly	Ser	Ser	Thr	Pro	Gly	Arg		1025	1030	1035
Thr	Ser	Gln	Phe	Val	Asp	Thr	Phe	Ser	Asp	Asp	Val	Tyr	His	Leu		1040	1045	1050
Thr	Ser	Arg	Glu	Ile	Thr	Ile	Pro	Arg	Asp	Gly	Thr	Ser	Ser	Ala		1055	1060	1065
Leu	Thr	Pro	Gln	Met	Thr	Ala	Thr	His	Pro	Pro	Ser	Pro	Asp	Pro		1070	1075	1080
Gly	Ser	Ala	Arg	Ser	Thr	Trp	Leu	Gly	Ile	Leu	Ser	Ser	Ser	Pro		1085	1090	1095
Ser	Ser	Pro	Thr	Pro	Lys	Val	Thr	Met	Ser	Ser	Thr	Phe	Ser	Thr		1100	1105	1110
Gln	Arg	Val	Thr	Thr	Ser	Met	Ile	Met	Asp	Thr	Val	Glu	Thr	Ser		1115	1120	1125
Arg	Trp	Asn	Met	Pro	Asn	Leu	Pro	Ser	Thr	Thr	Ser	Leu	Thr	Pro		1130	1135	1140
Ser	Asn	Ile	Pro	Thr	Ser	Gly	Ala	Ile	Gly	Lys	Ser	Thr	Leu	Val		1145	1150	1155
Pro	Leu	Asp	Thr	Pro	Ser	Pro	Ala	Thr	Ser	Leu	Glu	Ala	Ser	Glu		1160	1165	1170
Gly	Gly	Leu	Pro	Thr	Leu	Ser	Thr	Tyr	Pro	Glu	Ser	Thr	Asn	Thr		1175	1180	1185
Pro	Ser	Ile	His	Leu	Gly	Ala	His	Ala	Ser	Ser	Glu	Ser	Pro	Ser		1190	1195	1200
Thr	Ile	Lys	Leu	Thr	Met	Ala	Ser	Val	Val	Lys	Pro	Gly	Ser	Tyr		1205	1210	1215
Thr	Pro	Leu	Thr	Phe	Pro	Ser	Ile	Glu	Thr	His	Ile	His	Val	Ser		1220	1225	1230
Thr	Ala	Arg	Met	Ala	Tyr	Ser	Ser	Gly	Ser	Ser	Pro	Glu	Met	Thr		1235	1240	1245

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Ala	Pro	Gly	Glu	Thr	Asn	Thr	Gly	Ser	Thr	Trp	Asp	Pro	Thr	Thr
1250						1255					1260			
Tyr	Ile	Thr	Thr	Thr	Asp	Pro	Lys	Asp	Thr	Ser	Ser	Ala	Gln	Val
1265						1270					1275			
Ser	Thr	Pro	His	Ser	Val	Arg	Thr	Leu	Arg	Thr	Thr	Glu	Asn	His
1280						1285					1290			
Pro	Lys	Thr	Glu	Ser	Ala	Thr	Pro	Ala	Ala	Tyr	Ser	Gly	Ser	Pro
1295						1300					1305			
Lys	Ile	Ser	Ser	Ser	Pro	Asn	Leu	Thr	Ser	Pro	Ala	Thr	Lys	Ala
1310						1315					1320			
Trp	Thr	Ile	Thr	Asp	Thr	Thr	Glu	His	Ser	Thr	Gln	Leu	His	Tyr
1325						1330					1335			
Thr	Lys	Leu	Ala	Glu	Lys	Ser	Ser	Gly	Phe	Glu	Thr	Gln	Ser	Ala
1340						1345					1350			
Pro	Gly	Pro	Val	Ser	Val	Val	Ile	Pro	Thr	Ser	Pro	Thr	Ile	Gly
1355						1360					1365			
Ser	Ser	Thr	Leu	Glu	Leu	Thr	Ser	Asp	Val	Pro	Gly	Glu	Pro	Leu
1370						1375					1380			
Val	Leu	Ala	Pro	Ser	Glu	Gln	Thr	Thr	Ile	Thr	Leu	Pro	Met	Ala
1385						1390					1395			
Thr	Trp	Leu	Ser	Thr	Ser	Leu	Thr	Glu	Glu	Met	Ala	Ser	Thr	Asp
1400						1405					1410			
Leu	Asp	Ile	Ser	Ser	Pro	Ser	Ser	Pro	Met	Ser	Thr	Phe	Ala	Ile
1415						1420					1425			
Phe	Pro	Pro	Met	Ser	Thr	Pro	Ser	His	Glu	Leu	Ser	Lys	Ser	Glu
1430						1435					1440			
Ala	Asp	Thr	Ser	Ala	Ile	Arg	Asn	Thr	Asp	Ser	Thr	Thr	Leu	Asp
1445						1450					1455			
Gln	His	Leu	Gly	Ile	Arg	Ser	Leu	Gly	Arg	Thr	Gly	Asp	Leu	Thr
1460						1465					1470			
Thr	Val	Pro	Ile	Thr	Pro	Leu	Thr	Thr	Thr	Trp	Thr	Ser	Val	Ile
1475						1480					1485			
Glu	His	Ser	Thr	Gln	Ala	Gln	Asp	Thr	Leu	Ser	Ala	Thr	Met	Ser
1490						1495					1500			
Pro	Thr	His	Val	Thr	Gln	Ser	Leu	Lys	Asp	Gln	Thr	Ser	Ile	Pro
1505						1510					1515			
Ala	Ser	Ala	Ser	Pro	Ser	His	Leu	Thr	Glu	Val	Tyr	Pro	Glu	Leu
1520						1525					1530			
Gly	Thr	Gln	Gly	Arg	Ser	Ser	Ser	Glu	Ala	Thr	Thr	Phe	Trp	Lys
1535						1540					1545			
Pro	Ser	Thr	Asp	Thr	Leu	Ser	Arg	Glu	Ile	Glu	Thr	Gly	Pro	Thr
1550						1555					1560			
Asn	Ile	Gln	Ser	Thr	Pro	Pro	Met	Asp	Asn	Thr	Thr	Thr	Gly	Ser
1565						1570					1575			
Ser	Ser	Ser	Gly	Val	Thr	Leu	Gly	Ile	Ala	His	Leu	Pro	Ile	Gly
1580						1585					1590			
Thr	Ser	Ser	Pro	Ala	Glu	Thr	Ser	Thr	Asn	Met	Ala	Leu	Glu	Arg
1595						1600					1605			

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Arg	Ser	Ser	Thr	Ala	Thr	Val	Ser	Met	Ala	Gly	Thr	Met	Gly	Leu
1610						1615					1620			
Leu	Val	Thr	Ser	Ala	Pro	Gly	Arg	Ser	Ile	Ser	Gln	Ser	Leu	Gly
1625						1630					1635			
Arg	Val	Ser	Ser	Val	Leu	Ser	Glu	Ser	Thr	Thr	Glu	Gly	Val	Thr
1640						1645					1650			
Asp	Ser	Ser	Lys	Gly	Ser	Ser	Pro	Arg	Leu	Asn	Thr	Gln	Gly	Asn
1655						1660					1665			
Thr	Ala	Leu	Ser	Ser	Ser	Leu	Glu	Pro	Ser	Tyr	Ala	Glu	Gly	Ser
1670						1675					1680			
Gln	Met	Ser	Thr	Ser	Ile	Pro	Leu	Thr	Ser	Ser	Pro	Thr	Thr	Pro
1685						1690					1695			
Asp	Val	Glu	Phe	Ile	Gly	Gly	Ser	Thr	Phe	Trp	Thr	Lys	Glu	Val
1700						1705					1710			
Thr	Thr	Val	Met	Thr	Ser	Asp	Ile	Ser	Lys	Ser	Ser	Ala	Arg	Thr
1715						1720					1725			
Glu	Ser	Ser	Ser	Ala	Thr	Leu	Met	Ser	Thr	Ala	Leu	Gly	Ser	Thr
1730						1735					1740			
Glu	Asn	Thr	Gly	Lys	Glu	Lys	Leu	Arg	Thr	Ala	Ser	Met	Asp	Leu
1745						1750					1755			
Pro	Ser	Pro	Thr	Pro	Ser	Met	Glu	Val	Thr	Pro	Trp	Ile	Ser	Leu
1760						1765					1770			
Thr	Leu	Ser	Asn	Ala	Pro	Asn	Thr	Thr	Asp	Ser	Leu	Asp	Leu	Ser
1775						1780					1785			
His	Gly	Val	His	Thr	Ser	Ser	Ala	Gly	Thr	Leu	Ala	Thr	Asp	Arg
1790						1795					1800			
Ser	Leu	Asn	Thr	Gly	Val	Thr	Arg	Ala	Ser	Arg	Leu	Glu	Asn	Gly
1805						1810					1815			
Ser	Asp	Thr	Ser	Ser	Lys	Ser	Leu	Ser	Met	Gly	Asn	Ser	Thr	His
1820						1825					1830			
Thr	Ser	Met	Thr	Tyr	Thr	Glu	Lys	Ser	Glu	Val	Ser	Ser	Ser	Ile
1835						1840					1845			
His	Pro	Arg	Pro	Glu	Thr	Ser	Ala	Pro	Gly	Ala	Glu	Thr	Thr	Leu
1850						1855					1860			
Thr	Ser	Thr	Pro	Gly	Asn	Arg	Ala	Ile	Ser	Leu	Thr	Leu	Pro	Phe
1865						1870					1875			
Ser	Ser	Ile	Pro	Val	Glu	Glu	Val	Ile	Ser	Thr	Gly	Ile	Thr	Ser
1880						1885					1890			
Gly	Pro	Asp	Ile	Asn	Ser	Ala	Pro	Met	Thr	His	Ser	Pro	Ile	Thr
1895						1900					1905			
Pro	Pro	Thr	Ile	Val	Trp	Thr	Ser	Thr	Gly	Thr	Ile	Glu	Gln	Ser
1910						1915					1920			
Thr	Gln	Pro	Leu	His	Ala	Val	Ser	Ser	Glu	Lys	Val	Ser	Val	Gln
1925						1930					1935			
Thr	Gln	Ser	Thr	Pro	Tyr	Val	Asn	Ser	Val	Ala	Val	Ser	Ala	Ser
1940						1945					1950			
Pro	Thr	His	Glu	Asn	Ser	Val	Ser	Ser	Gly	Ser	Ser	Thr	Ser	Ser
1955						1960					1965			

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Pro	Tyr	Ser	Ser	Ala	Ser	Leu	Glu	Ser	Leu	Asp	Ser	Thr	Ile	Ser
1970						1975					1980			
Arg	Arg	Asn	Ala	Ile	Thr	Ser	Trp	Leu	Trp	Asp	Leu	Thr	Thr	Ser
1985						1990					1995			
Leu	Pro	Thr	Thr	Thr	Trp	Pro	Ser	Thr	Ser	Leu	Ser	Glu	Ala	Leu
2000						2005					2010			
Ser	Ser	Gly	His	Ser	Gly	Val	Ser	Asn	Pro	Ser	Ser	Thr	Thr	Thr
2015						2020					2025			
Glu	Phe	Pro	Leu	Phe	Ser	Ala	Ala	Ser	Thr	Ser	Ala	Ala	Lys	Gln
2030						2035					2040			
Arg	Asn	Pro	Glu	Thr	Glu	Thr	His	Gly	Pro	Gln	Asn	Thr	Ala	Ala
2045						2050					2055			
Ser	Thr	Leu	Asn	Thr	Asp	Ala	Ser	Ser	Val	Thr	Gly	Leu	Ser	Glu
2060						2065					2070			
Thr	Pro	Val	Gly	Ala	Ser	Ile	Ser	Ser	Glu	Val	Pro	Leu	Pro	Met
2075						2080					2085			
Ala	Ile	Thr	Ser	Arg	Ser	Asp	Val	Ser	Gly	Leu	Thr	Ser	Glu	Ser
2090						2095					2100			
Thr	Ala	Asn	Pro	Ser	Leu	Gly	Thr	Ala	Ser	Ser	Ala	Gly	Thr	Lys
2105						2110					2115			
Leu	Thr	Arg	Thr	Ile	Ser	Leu	Pro	Thr	Ser	Glu	Ser	Leu	Val	Ser
2120						2125					2130			
Phe	Arg	Met	Asn	Lys	Asp	Pro	Trp	Thr	Val	Ser	Ile	Pro	Leu	Gly
2135						2140					2145			
Ser	His	Pro	Thr	Thr	Asn	Thr	Glu	Thr	Ser	Ile	Pro	Val	Asn	Ser
2150						2155					2160			
Ala	Gly	Pro	Pro	Gly	Leu	Ser	Thr	Val	Ala	Ser	Asp	Val	Ile	Asp
2165						2170					2175			
Thr	Pro	Ser	Asp	Gly	Ala	Glu	Ser	Ile	Pro	Thr	Val	Ser	Phe	Ser
2180						2185					2190			
Pro	Ser	Pro	Asp	Thr	Glu	Val	Thr	Thr	Ile	Ser	His	Phe	Pro	Glu
2195						2200					2205			
Lys	Thr	Thr	His	Ser	Phe	Arg	Thr	Ile	Ser	Ser	Leu	Thr	His	Glu
2210						2215					2220			
Leu	Thr	Ser	Arg	Val	Thr	Pro	Ile	Pro	Gly	Asp	Trp	Met	Ser	Ser
2225						2230					2235			
Ala	Met	Ser	Thr	Lys	Pro	Thr	Gly	Ala	Ser	Pro	Ser	Ile	Thr	Leu
2240						2245					2250			
Gly	Glu	Arg	Arg	Thr	Ile	Thr	Ser	Ala	Ala	Pro	Thr	Thr	Ser	Pro
2255						2260					2265			
Ile	Val	Leu	Thr	Ala	Ser	Phe	Thr	Glu	Thr	Ser	Thr	Val	Ser	Leu
2270						2275					2280			
Asp	Asn	Glu	Thr	Thr	Val	Lys	Thr	Ser	Asp	Ile	Leu	Asp	Ala	Arg
2285						2290					2295			
Lys	Thr	Asn	Glu	Leu	Pro	Ser	Asp	Ser	Ser	Ser	Ser	Ser	Asp	Leu
2300						2305					2310			
Ile	Asn	Thr	Ser	Ile	Ala	Ser	Ser	Thr	Met	Asp	Val	Thr	Lys	Thr
2315						2320					2325			

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Ala Ser Ile Ser Pro Thr	Ser Ile Ser Gly Met Thr	Ala Ser Ser
2330	2335	2340
Ser Pro Ser Leu Phe Ser	Ser Asp Arg Pro Gln Val	Pro Thr Ser
2345	2350	2355
Thr Thr Glu Thr Asn Thr	Ala Thr Ser Pro Ser Val	Ser Ser Asn
2360	2365	2370
Thr Tyr Ser Leu Asp Gly	Gly Ser Asn Val Gly Gly	Thr Pro Ser
2375	2380	2385
Thr Leu Pro Pro Phe Thr	Ile Thr His Pro Val Glu	Thr Ser Ser
2390	2395	2400
Ala Leu Leu Ala Trp Ser	Arg Pro Val Arg Thr Phe	Ser Thr Met
2405	2410	2415
Val Ser Thr Asp Thr Ala	Ser Gly Glu Asn Pro Thr	Ser Ser Asn
2420	2425	2430
Ser Val Val Thr Ser Val	Pro Ala Pro Gly Thr Trp	Thr Ser Val
2435	2440	2445
Gly Ser Thr Thr Asp Leu	Pro Ala Met Gly Phe Leu	Lys Thr Ser
2450	2455	2460
Pro Ala Gly Glu Ala His	Ser Leu Leu Ala Ser Thr	Ile Glu Pro
2465	2470	2475
Ala Thr Ala Phe Thr Pro	His Leu Ser Ala Ala Val	Val Thr Gly
2480	2485	2490
Ser Ser Ala Thr Ser Glu	Ala Ser Leu Leu Thr Thr	Ser Glu Ser
2495	2500	2505
Lys Ala Ile His Ser Ser	Pro Gln Thr Pro Thr Thr	Pro Thr Ser
2510	2515	2520
Gly Ala Asn Trp Glu Thr	Ser Ala Thr Pro Glu Ser	Leu Leu Val
2525	2530	2535
Val Thr Glu Thr Ser Asp	Thr Thr Leu Thr Ser Lys	Ile Leu Val
2540	2545	2550
Thr Asp Thr Ile Leu Phe	Ser Thr Val Ser Thr Pro	Pro Ser Lys
2555	2560	2565
Phe Pro Ser Thr Gly Thr	Leu Ser Gly Ala Ser Phe	Pro Thr Leu
2570	2575	2580
Leu Pro Asp Thr Pro Ala	Ile Pro Leu Thr Ala Thr	Glu Pro Thr
2585	2590	2595
Ser Ser Leu Ala Thr Ser	Phe Asp Ser Thr Pro Leu	Val Thr Ile
2600	2605	2610
Ala Ser Asp Ser Leu Gly	Thr Val Pro Glu Thr Thr	Leu Thr Met
2615	2620	2625
Ser Glu Thr Ser Asn Gly	Asp Ala Leu Val Leu Lys	Thr Val Ser
2630	2635	2640
Asn Pro Asp Arg Ser Ile	Pro Gly Ile Thr Ile Gln	Gly Val Thr
2645	2650	2655
Glu Ser Pro Leu His Pro	Ser Ser Thr Ser Pro Ser	Lys Ile Val
2660	2665	2670
Ala Pro Arg Asn Thr Thr	Tyr Glu Gly Ser Ile Thr	Val Ala Leu
2675	2680	2685

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Ser Thr	Leu Pro Ala Gly	Thr Thr Gly Ser Leu Val	Phe Ser Gln
2690		2695	2700
Ser Ser	Glu Asn Ser Glu Thr	Thr Ala Leu Val Asp	Ser Ser Ala
2705		2710	2715
Gly Leu	Glu Arg Ala Ser Val	Met Pro Leu Thr Thr	Gly Ser Gln
2720		2725	2730
Gly Met	Ala Ser Ser Gly Gly	Ile Arg Ser Gly Ser	Thr His Ser
2735		2740	2745
Thr Gly	Thr Lys Thr Phe Ser	Ser Leu Pro Leu Thr	Met Asn Pro
2750		2755	2760
Gly Glu	Val Thr Ala Met Ser	Glu Ile Thr Thr Asn	Arg Leu Thr
2765		2770	2775
Ala Thr	Gln Ser Thr Ala Pro	Lys Gly Ile Pro Val	Lys Pro Thr
2780		2785	2790
Ser Ala	Glu Ser Gly Leu Leu	Thr Pro Val Ser Ala	Ser Ser Ser
2795		2800	2805
Pro Ser	Lys Ala Phe Ala Ser	Leu Thr Thr Ala Pro	Pro Thr Trp
2810		2815	2820
Gly Ile	Pro Gln Ser Thr Leu	Thr Phe Glu Phe Ser	Glu Val Pro
2825		2830	2835
Ser Leu	Asp Thr Lys Ser Ala	Ser Leu Pro Thr Pro	Gly Gln Ser
2840		2845	2850
Leu Asn	Thr Ile Pro Asp Ser	Asp Ala Ser Thr Ala	Ser Ser Ser
2855		2860	2865
Leu Ser	Lys Ser Pro Glu Lys	Asn Pro Arg Ala Arg	Met Met Thr
2870		2875	2880
Ser Thr	Lys Ala Ile Ser Ala	Ser Ser Phe Gln Ser	Thr Gly Phe
2885		2890	2895
Thr Glu	Thr Pro Glu Gly Ser	Ala Ser Pro Ser Met	Ala Gly His
2900		2905	2910
Glu Pro	Arg Val Pro Thr Ser	Gly Thr Gly Asp Pro	Arg Tyr Ala
2915		2920	2925
Ser Glu	Ser Met Ser Tyr Pro	Asp Pro Ser Lys Ala	Ser Ser Ala
2930		2935	2940
Met Thr	Ser Thr Ser Leu Ala	Ser Lys Leu Thr Thr	Leu Phe Ser
2945		2950	2955
Thr Gly	Gln Ala Ala Arg Ser	Gly Ser Ser Ser Ser	Pro Ile Ser
2960		2965	2970
Leu Ser	Thr Glu Lys Glu Thr	Ser Phe Leu Ser Pro	Thr Ala Ser
2975		2980	2985
Thr Ser	Arg Lys Thr Ser Leu	Phe Leu Gly Pro Ser	Met Ala Arg
2990		2995	3000
Gln Pro	Asn Ile Leu Val His	Leu Gln Thr Ser Ala	Leu Thr Leu
3005		3010	3015
Ser Pro	Thr Ser Thr Leu Asn	Met Ser Gln Glu Glu	Pro Pro Glu
3020		3025	3030
Leu Thr	Ser Ser Gln Thr Ile	Ala Glu Glu Glu Gly	Thr Thr Ala
3035		3040	3045

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Glu Thr Gln Thr Leu Thr	Phe Thr Pro Ser Glu Thr	Pro Thr Ser
3050	3055	3060
Leu Leu Pro Val Ser Ser	Pro Thr Glu Pro Thr	Ala Arg Arg Lys
3065	3070	3075
Ser Ser Pro Glu Thr Trp	Ala Ser Ser Ile Ser	Val Pro Ala Lys
3080	3085	3090
Thr Ser Leu Val Glu Thr	Thr Asp Gly Thr Leu	Val Thr Thr Ile
3095	3100	3105
Lys Met Ser Ser Gln Ala	Ala Gln Gly Asn Ser	Thr Trp Pro Ala
3110	3115	3120
Pro Ala Glu Glu Thr Gly	Ser Ser Pro Ala Gly	Thr Ser Pro Gly
3125	3130	3135
Ser Pro Glu Met Ser Thr	Thr Leu Lys Ile Met	Ser Ser Lys Glu
3140	3145	3150
Pro Ser Ile Ser Pro Glu	Ile Arg Ser Thr Val	Arg Asn Ser Pro
3155	3160	3165
Trp Lys Thr Pro Glu Thr	Thr Val Pro Met Glu	Thr Thr Val Glu
3170	3175	3180
Pro Val Thr Leu Gln Ser	Thr Ala Leu Gly Ser	Gly Ser Thr Ser
3185	3190	3195
Ile Ser His Leu Pro Thr	Gly Thr Thr Ser Pro	Thr Lys Ser Pro
3200	3205	3210
Thr Glu Asn Met Leu Ala	Thr Glu Arg Val Ser	Leu Ser Pro Ser
3215	3220	3225
Pro Pro Glu Ala Trp Thr	Asn Leu Tyr Ser Gly	Thr Pro Gly Gly
3230	3235	3240
Thr Arg Gln Ser Leu Ala	Thr Met Ser Ser Val	Ser Leu Glu Ser
3245	3250	3255
Pro Thr Ala Arg Ser Ile	Thr Gly Thr Gly Gln	Gln Ser Ser Pro
3260	3265	3270
Glu Leu Val Ser Lys Thr	Thr Gly Met Glu Phe	Ser Met Trp His
3275	3280	3285
Gly Ser Thr Gly Gly Thr	Thr Gly Asp Thr His	Val Ser Leu Ser
3290	3295	3300
Thr Ser Ser Asn Ile Leu	Glu Asp Pro Val Thr	Ser Pro Asn Ser
3305	3310	3315
Val Ser Ser Leu Thr Asp	Lys Ser Lys His Lys	Thr Glu Thr Trp
3320	3325	3330
Val Ser Thr Thr Ala Ile	Pro Ser Thr Val Leu	Asn Asn Lys Ile
3335	3340	3345
Met Ala Ala Glu Gln Gln	Thr Ser Arg Ser Val	Asp Glu Ala Tyr
3350	3355	3360
Ser Ser Thr Ser Ser Trp	Ser Asp Gln Thr Ser	Gly Ser Asp Ile
3365	3370	3375
Thr Leu Gly Ala Ser Pro	Asp Val Thr Asn Thr	Leu Tyr Ile Thr
3380	3385	3390
Ser Thr Ala Gln Thr Thr	Ser Leu Val Ser Leu	Pro Ser Gly Asp
3395	3400	3405

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Gln	Gly	Ile	Thr	Ser	Leu	Thr	Asn	Pro	Ser	Gly	Gly	Lys	Thr	Ser
	3410					3415					3420			
Ser	Ala	Ser	Ser	Val	Thr	Ser	Pro	Ser	Ile	Gly	Leu	Glu	Thr	Leu
	3425					3430					3435			
Arg	Ala	Asn	Val	Ser	Ala	Val	Lys	Ser	Asp	Ile	Ala	Pro	Thr	Ala
	3440					3445					3450			
Gly	His	Leu	Ser	Gln	Thr	Ser	Ser	Pro	Ala	Glu	Val	Ser	Ile	Leu
	3455					3460					3465			
Asp	Val	Thr	Thr	Ala	Pro	Thr	Pro	Gly	Ile	Ser	Thr	Thr	Ile	Thr
	3470					3475					3480			
Thr	Met	Gly	Thr	Asn	Ser	Ile	Ser	Thr	Thr	Thr	Pro	Asn	Pro	Glu
	3485					3490					3495			
Val	Gly	Met	Ser	Thr	Met	Asp	Ser	Thr	Pro	Ala	Thr	Glu	Arg	Arg
	3500					3505					3510			
Thr	Thr	Ser	Thr	Glu	His	Pro	Ser	Thr	Trp	Ser	Ser	Thr	Ala	Ala
	3515					3520					3525			
Ser	Asp	Ser	Trp	Thr	Val	Thr	Asp	Met	Thr	Ser	Asn	Leu	Lys	Val
	3530					3535					3540			
Ala	Arg	Ser	Pro	Gly	Thr	Ile	Ser	Thr	Met	His	Thr	Thr	Ser	Phe
	3545					3550					3555			
Leu	Ala	Ser	Ser	Thr	Glu	Leu	Asp	Ser	Met	Ser	Thr	Pro	His	Gly
	3560					3565					3570			
Arg	Ile	Thr	Val	Ile	Gly	Thr	Ser	Leu	Val	Thr	Pro	Ser	Ser	Asp
	3575					3580					3585			
Ala	Ser	Ala	Val	Lys	Thr	Glu	Thr	Ser	Thr	Ser	Glu	Arg	Thr	Leu
	3590					3595					3600			
Ser	Pro	Ser	Asp	Thr	Thr	Ala	Ser	Thr	Pro	Ile	Ser	Thr	Phe	Ser
	3605					3610					3615			
Arg	Val	Gln	Arg	Met	Ser	Ile	Ser	Val	Pro	Asp	Ile	Leu	Ser	Thr
	3620					3625					3630			
Ser	Trp	Thr	Pro	Ser	Ser	Thr	Glu	Ala	Glu	Asp	Val	Pro	Val	Ser
	3635					3640					3645			
Met	Val	Ser	Thr	Asp	His	Ala	Ser	Thr	Lys	Thr	Asp	Pro	Asn	Thr
	3650					3655					3660			
Pro	Leu	Ser	Thr	Phe	Leu	Phe	Asp	Ser	Leu	Ser	Thr	Leu	Asp	Trp
	3665					3670					3675			
Asp	Thr	Gly	Arg	Ser	Leu	Ser	Ser	Ala	Thr	Ala	Thr	Thr	Ser	Ala
	3680					3685					3690			
Pro	Gln	Gly	Ala	Thr	Thr	Pro	Gln	Glu	Leu	Thr	Leu	Glu	Thr	Met
	3695					3700					3705			
Ile	Ser	Pro	Ala	Thr	Ser	Gln	Leu	Pro	Phe	Ser	Ile	Gly	His	Ile
	3710					3715					3720			
Thr	Ser	Ala	Val	Thr	Pro	Ala	Ala	Met	Ala	Arg	Ser	Ser	Gly	Val
	3725					3730					3735			
Thr	Phe	Ser	Arg	Pro	Asp	Pro	Thr	Ser	Lys	Lys	Ala	Glu	Gln	Thr
	3740					3745					3750			
Ser	Thr	Gln	Leu	Pro	Thr	Thr	Thr	Ser	Ala	His	Pro	Gly	Gln	Val
	3755					3760					3765			

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Pro	Arg	Ser	Ala	Ala	Thr	Thr	Leu	Asp	Val	Ile	Pro	His	Thr	Ala
3770						3775					3780			
Lys	Thr	Pro	Asp	Ala	Thr	Phe	Gln	Arg	Gln	Gly	Gln	Thr	Ala	Leu
3785						3790					3795			
Thr	Thr	Glu	Ala	Arg	Ala	Thr	Ser	Asp	Ser	Trp	Asn	Glu	Lys	Glu
3800						3805					3810			
Lys	Ser	Thr	Pro	Ser	Ala	Pro	Trp	Ile	Thr	Glu	Met	Met	Asn	Ser
3815						3820					3825			
Val	Ser	Glu	Asp	Thr	Ile	Lys	Glu	Val	Thr	Ser	Ser	Ser	Ser	Val
3830						3835					3840			
Leu	Arg	Thr	Leu	Asn	Thr	Leu	Asp	Ile	Asn	Leu	Glu	Ser	Gly	Thr
3845						3850					3855			
Thr	Ser	Ser	Pro	Ser	Trp	Lys	Ser	Ser	Pro	Tyr	Glu	Arg	Ile	Ala
3860						3865					3870			
Pro	Ser	Glu	Ser	Thr	Thr	Asp	Lys	Glu	Ala	Ile	His	Pro	Ser	Thr
3875						3880					3885			
Asn	Thr	Val	Glu	Thr	Thr	Gly	Trp	Val	Thr	Ser	Ser	Glu	His	Ala
3890						3895					3900			
Ser	His	Ser	Thr	Ile	Pro	Ala	His	Ser	Ala	Ser	Ser	Lys	Leu	Thr
3905						3910					3915			
Ser	Pro	Val	Val	Thr	Thr	Ser	Thr	Arg	Glu	Gln	Ala	Ile	Val	Ser
3920						3925					3930			
Met	Ser	Thr	Thr	Thr	Trp	Pro	Glu	Ser	Thr	Arg	Ala	Arg	Thr	Glu
3935						3940					3945			
Pro	Asn	Ser	Phe	Leu	Thr	Ile	Glu	Leu	Arg	Asp	Val	Ser	Pro	Tyr
3950						3955					3960			
Met	Asp	Thr	Ser	Ser	Thr	Thr	Gln	Thr	Ser	Ile	Ile	Ser	Ser	Pro
3965						3970					3975			
Gly	Ser	Thr	Ala	Ile	Thr	Lys	Gly	Pro	Arg	Thr	Glu	Ile	Thr	Ser
3980						3985					3990			
Ser	Lys	Arg	Ile	Ser	Ser	Ser	Phe	Leu	Ala	Gln	Ser	Met	Arg	Ser
3995						4000					4005			
Ser	Asp	Ser	Pro	Ser	Glu	Ala	Ile	Thr	Arg	Leu	Ser	Asn	Phe	Pro
4010						4015					4020			
Ala	Met	Thr	Glu	Ser	Gly	Gly	Met	Ile	Leu	Ala	Met	Gln	Thr	Ser
4025						4030					4035			
Pro	Pro	Gly	Ala	Thr	Ser	Leu	Ser	Ala	Pro	Thr	Leu	Asp	Thr	Ser
4040						4045					4050			
Ala	Thr	Ala	Ser	Trp	Thr	Gly	Thr	Pro	Leu	Ala	Thr	Thr	Gln	Arg
4055						4060					4065			
Phe	Thr	Tyr	Ser	Glu	Lys	Thr	Thr	Leu	Phe	Ser	Lys	Gly	Pro	Glu
4070						4075					4080			
Asp	Thr	Ser	Gln	Pro	Ser	Pro	Pro	Ser	Val	Glu	Glu	Thr	Ser	Ser
4085						4090					4095			
Ser	Ser	Ser	Leu	Val	Pro	Ile	His	Ala	Thr	Thr	Ser	Pro	Ser	Asn
4100						4105					4110			
Ile	Leu	Leu	Thr	Ser	Gln	Gly	His	Ser	Pro	Ser	Ser	Thr	Pro	Pro
4115						4120					4125			

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Val Thr Ser Val Phe Leu Ser	Glu Thr Ser Gly Leu Gly Lys Thr
4130	4135 4140
Thr Asp Met Ser Arg Ile Ser	Leu Glu Pro Gly Thr Ser Leu Pro
4145	4150 4155
Pro Asn Leu Ser Ser Thr Ala	Gly Glu Ala Leu Ser Thr Tyr Glu
4160	4165 4170
Ala Ser Arg Asp Thr Lys Ala	Ile His His Ser Ala Asp Thr Ala
4175	4180 4185
Val Thr Asn Met Glu Ala Thr	Ser Ser Glu Tyr Ser Pro Ile Pro
4190	4195 4200
Gly His Thr Lys Pro Ser Lys	Ala Thr Ser Pro Leu Val Thr Ser
4205	4210 4215
His Ile Met Gly Asp Ile Thr	Ser Ser Thr Ser Val Phe Gly Ser
4220	4225 4230
Ser Glu Thr Thr Glu Ile Glu	Thr Val Ser Ser Val Asn Gln Gly
4235	4240 4245
Leu Gln Glu Arg Ser Thr Ser	Gln Val Ala Ser Ser Ala Thr Glu
4250	4255 4260
Thr Ser Thr Val Ile Thr His	Val Ser Ser Gly Asp Ala Thr Thr
4265	4270 4275
His Val Thr Lys Thr Gln Ala	Thr Phe Ser Ser Gly Thr Ser Ile
4280	4285 4290
Ser Ser Pro His Gln Phe Ile	Thr Ser Thr Asn Thr Phe Thr Asp
4295	4300 4305
Val Ser Thr Asn Pro Ser Thr	Ser Leu Ile Met Thr Glu Ser Ser
4310	4315 4320
Gly Val Thr Ile Thr Thr Gln	Thr Gly Pro Thr Gly Ala Ala Thr
4325	4330 4335
Gln Gly Pro Tyr Leu Leu Asp	Thr Ser Thr Met Pro Tyr Leu Thr
4340	4345 4350
Glu Thr Pro Leu Ala Val Thr	Pro Asp Phe Met Gln Ser Glu Lys
4355	4360 4365
Thr Thr Leu Ile Ser Lys Gly	Pro Lys Asp Val Ser Trp Thr Ser
4370	4375 4380
Pro Pro Ser Val Ala Glu Thr	Ser Tyr Pro Ser Ser Leu Thr Pro
4385	4390 4395
Phe Leu Val Thr Thr Ile Pro	Pro Ala Thr Ser Thr Leu Gln Gly
4400	4405 4410
Gln His Thr Ser Ser Pro Val	Ser Ala Thr Ser Val Leu Thr Ser
4415	4420 4425
Gly Leu Val Lys Thr Thr Asp	Met Leu Asn Thr Ser Met Glu Pro
4430	4435 4440
Val Thr Asn Ser Pro Gln Asn	Leu Asn Asn Pro Ser Asn Glu Ile
4445	4450 4455
Leu Ala Thr Leu Ala Ala Thr	Thr Asp Ile Glu Thr Ile His Pro
4460	4465 4470
Ser Ile Asn Lys Ala Val Thr	Asn Met Gly Thr Ala Ser Ser Ala
4475	4480 4485

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His Val	Leu His Ser Thr	Leu	Pro Val Ser Ser Glu	Pro Ser Thr
4490		4495		4500
Ala Thr	Ser Pro Met Val	Pro	Ala Ser Ser Met Gly	Asp Ala Leu
4505		4510		4515
Ala Ser	Ile Ser Ile Pro	Gly	Ser Glu Thr Thr	Asp Ile Glu Gly
4520		4525		4530
Glu Pro	Thr Ser Ser Leu	Thr	Ala Gly Arg Lys	Glu Asn Ser Thr
4535		4540		4545
Leu Gln	Glu Met Asn Ser	Thr	Thr Glu Ser Asn	Ile Ile Leu Ser
4550		4555		4560
Asn Val	Ser Val Gly Ala	Ile	Thr Glu Ala Thr	Lys Met Glu Val
4565		4570		4575
Pro Ser	Phe Asp Ala Thr	Phe	Ile Pro Thr Pro	Ala Gln Ser Thr
4580		4585		4590
Lys Phe	Pro Asp Ile Phe	Ser	Val Ala Ser Ser	Arg Leu Ser Asn
4595		4600		4605
Ser Pro	Pro Met Thr Ile	Ser	Thr His Met Thr	Thr Thr Gln Thr
4610		4615		4620
Gly Ser	Ser Gly Ala Thr	Ser	Lys Ile Pro Leu	Ala Leu Asp Thr
4625		4630		4635
Ser Thr	Leu Glu Thr Ser	Ala	Gly Thr Pro Ser	Val Val Thr Glu
4640		4645		4650
Gly Phe	Ala His Ser Lys	Ile	Thr Thr Ala Met	Asn Asn Asp Val
4655		4660		4665
Lys Asp	Val Ser Gln Thr	Asn	Pro Pro Phe Gln	Asp Glu Ala Ser
4670		4675		4680
Ser Pro	Ser Ser Gln Ala	Pro	Val Leu Val Thr	Thr Leu Pro Ser
4685		4690		4695
Ser Val	Ala Phe Thr Pro	Gln	Trp His Ser Thr	Ser Ser Pro Val
4700		4705		4710
Ser Met	Ser Ser Val Leu	Thr	Ser Ser Leu Val	Lys Thr Ala Gly
4715		4720		4725
Lys Val	Asp Thr Ser Leu	Glu	Thr Val Thr Ser	Ser Pro Gln Ser
4730		4735		4740
Met Ser	Asn Thr Leu Asp	Asp	Ile Ser Val Thr	Ser Ala Ala Thr
4745		4750		4755
Thr Asp	Ile Glu Thr Thr	His	Pro Ser Ile Asn	Thr Val Val Thr
4760		4765		4770
Asn Val	Gly Thr Thr Gly	Ser	Ala Phe Glu Ser	His Ser Thr Val
4775		4780		4785
Ser Ala	Tyr Pro Glu Pro	Ser	Lys Val Thr Ser	Pro Asn Val Thr
4790		4795		4800
Thr Ser	Thr Met Glu Asp	Thr	Thr Ile Ser Arg	Ser Ile Pro Lys
4805		4810		4815
Ser Ser	Lys Thr Thr Arg	Thr	Glu Thr Glu Thr	Thr Ser Ser Leu
4820		4825		4830
Thr Pro	Lys Leu Arg Glu	Thr	Ser Ile Ser Gln	Glu Ile Thr Ser
4835		4840		4845

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Ser	Thr	Glu	Thr	Ser	Thr	Val	Pro	Tyr	Lys	Glu	Leu	Thr	Gly	Ala
4850						4855					4860			
Thr	Thr	Glu	Val	Ser	Arg	Thr	Asp	Val	Thr	Ser	Ser	Ser	Ser	Thr
4865						4870					4875			
Ser	Phe	Pro	Gly	Pro	Asp	Gln	Ser	Thr	Val	Ser	Leu	Asp	Ile	Ser
4880						4885					4890			
Thr	Glu	Thr	Asn	Thr	Arg	Leu	Ser	Thr	Ser	Pro	Ile	Met	Thr	Glu
4895						4900					4905			
Ser	Ala	Glu	Ile	Thr	Ile	Thr	Thr	Gln	Thr	Gly	Pro	His	Gly	Ala
4910						4915					4920			
Thr	Ser	Gln	Asp	Thr	Phe	Thr	Met	Asp	Pro	Ser	Asn	Thr	Thr	Pro
4925						4930					4935			
Gln	Ala	Gly	Ile	His	Ser	Ala	Met	Thr	His	Gly	Phe	Ser	Gln	Leu
4940						4945					4950			
Asp	Val	Thr	Thr	Leu	Met	Ser	Arg	Ile	Pro	Gln	Asp	Val	Ser	Trp
4955						4960					4965			
Thr	Ser	Pro	Pro	Ser	Val	Asp	Lys	Thr	Ser	Ser	Pro	Ser	Ser	Phe
4970						4975					4980			
Leu	Ser	Ser	Pro	Ala	Met	Thr	Thr	Pro	Ser	Leu	Ile	Ser	Ser	Thr
4985						4990					4995			
Leu	Pro	Glu	Asp	Lys	Leu	Ser	Ser	Pro	Met	Thr	Ser	Leu	Leu	Thr
5000						5005					5010			
Ser	Gly	Leu	Val	Lys	Ile	Thr	Asp	Ile	Leu	Arg	Thr	Arg	Leu	Glu
5015						5020					5025			
Pro	Val	Thr	Ser	Ser	Leu	Pro	Asn	Phe	Ser	Ser	Thr	Ser	Asp	Lys
5030						5035					5040			
Ile	Leu	Ala	Thr	Ser	Lys	Asp	Ser	Lys	Asp	Thr	Lys	Glu	Ile	Phe
5045						5050					5055			
Pro	Ser	Ile	Asn	Thr	Glu	Glu	Thr	Asn	Val	Lys	Ala	Asn	Asn	Ser
5060						5065					5070			
Gly	His	Glu	Ser	His	Ser	Pro	Ala	Leu	Ala	Asp	Ser	Glu	Thr	Pro
5075						5080					5085			
Lys	Ala	Thr	Thr	Gln	Met	Val	Ile	Thr	Thr	Thr	Val	Gly	Asp	Pro
5090						5095					5100			
Ala	Pro	Ser	Thr	Ser	Met	Pro	Val	His	Gly	Ser	Ser	Glu	Thr	Thr
5105						5110					5115			
Asn	Ile	Lys	Arg	Glu	Pro	Thr	Tyr	Phe	Leu	Thr	Pro	Arg	Leu	Arg
5120						5125					5130			
Glu	Thr	Ser	Thr	Ser	Gln	Glu	Ser	Ser	Phe	Pro	Thr	Asp	Thr	Ser
5135						5140					5145			
Phe	Leu	Leu	Ser	Lys	Val	Pro	Thr	Gly	Thr	Ile	Thr	Glu	Val	Ser
5150						5155					5160			
Ser	Thr	Gly	Val	Asn	Ser	Ser	Ser	Lys	Ile	Ser	Thr	Pro	Asp	His
5165						5170					5175			
Asp	Lys	Ser	Thr	Val	Pro	Pro	Asp	Thr	Phe	Thr	Gly	Glu	Ile	Pro
5180						5185					5190			
Arg	Val	Phe	Thr	Ser	Ser	Ile	Lys	Thr	Lys	Ser	Ala	Glu	Met	Thr
5195						5200					5205			

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Ile Thr Thr Gln Ala Ser	Pro Pro Glu Ser Ala Ser	His Ser Thr
5210	5215	5220
Leu Pro Leu Asp Thr Ser	Thr Thr Leu Ser Gln Gly	Gly Thr His
5225	5230	5235
Ser Thr Val Thr Gln Gly	Phe Pro Tyr Ser Glu Val	Thr Thr Leu
5240	5245	5250
Met Gly Met Gly Pro Gly	Asn Val Ser Trp Met Thr	Thr Pro Pro
5255	5260	5265
Val Glu Glu Thr Ser Ser	Val Ser Ser Leu Met Ser	Ser Pro Ala
5270	5275	5280
Met Thr Ser Pro Ser Pro	Val Ser Ser Thr Ser Pro	Gln Ser Ile
5285	5290	5295
Pro Ser Ser Pro Leu Pro	Val Thr Ala Leu Pro Thr	Ser Val Leu
5300	5305	5310
Val Thr Thr Thr Asp Val	Leu Gly Thr Thr Ser Pro	Glu Ser Val
5315	5320	5325
Thr Ser Ser Pro Pro Asn	Leu Ser Ser Ile Thr His	Glu Arg Pro
5330	5335	5340
Ala Thr Tyr Lys Asp Thr	Ala His Thr Glu Ala Ala	Met His His
5345	5350	5355
Ser Thr Asn Thr Ala Val	Thr Asn Val Gly Thr Ser	Gly Ser Gly
5360	5365	5370
His Lys Ser Gln Ser Ser	Val Leu Ala Asp Ser Glu	Thr Ser Lys
5375	5380	5385
Ala Thr Pro Leu Met Ser	Thr Thr Ser Thr Leu Gly	Asp Thr Ser
5390	5395	5400
Val Ser Thr Ser Thr Pro	Asn Ile Ser Gln Thr Asn	Gln Ile Gln
5405	5410	5415
Thr Glu Pro Thr Ala Ser	Leu Ser Pro Arg Leu Arg	Glu Ser Ser
5420	5425	5430
Thr Ser Glu Lys Thr Ser	Ser Thr Thr Glu Thr Asn	Thr Ala Phe
5435	5440	5445
Ser Tyr Val Pro Thr Gly	Ala Ile Thr Gln Ala Ser	Arg Thr Glu
5450	5455	5460
Ile Ser Ser Ser Arg Thr	Ser Ile Ser Asp Leu Asp	Arg Pro Thr
5465	5470	5475
Ile Ala Pro Asp Ile Ser	Thr Gly Met Ile Thr Arg	Leu Phe Thr
5480	5485	5490
Ser Pro Ile Met Thr Lys	Ser Ala Glu Met Thr Val	Thr Thr Gln
5495	5500	5505
Thr Thr Thr Pro Gly Ala	Thr Ser Gln Gly Ile Leu	Pro Trp Asp
5510	5515	5520
Thr Ser Thr Thr Leu Phe	Gln Gly Gly Thr His Ser	Thr Val Ser
5525	5530	5535
Gln Gly Phe Pro His Ser	Glu Ile Thr Thr Leu Arg	Ser Arg Thr
5540	5545	5550
Pro Gly Asp Val Ser Trp	Met Thr Thr Pro Pro Val	Glu Glu Thr
5555	5560	5565

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Ser	Ser	Gly	Phe	Ser	Leu	Met	Ser	Pro	Ser	Met	Thr	Ser	Pro	Ser
5570						5575					5580			
Pro	Val	Ser	Ser	Thr	Ser	Pro	Glu	Ser	Ile	Pro	Ser	Ser	Pro	Leu
5585						5590					5595			
Pro	Val	Thr	Ala	Leu	Leu	Thr	Ser	Val	Leu	Val	Thr	Thr	Thr	Asn
5600						5605					5610			
Val	Leu	Gly	Thr	Thr	Ser	Pro	Glu	Pro	Val	Thr	Ser	Ser	Pro	Pro
5615						5620					5625			
Asn	Leu	Ser	Ser	Pro	Thr	Gln	Glu	Arg	Leu	Thr	Thr	Tyr	Lys	Asp
5630						5635					5640			
Thr	Ala	His	Thr	Glu	Ala	Met	His	Ala	Ser	Met	His	Thr	Asn	Thr
5645						5650					5655			
Ala	Val	Ala	Asn	Val	Gly	Thr	Ser	Ile	Ser	Gly	His	Glu	Ser	Gln
5660						5665					5670			
Ser	Ser	Val	Pro	Ala	Asp	Ser	His	Thr	Ser	Lys	Ala	Thr	Ser	Pro
5675						5680					5685			
Met	Gly	Ile	Thr	Phe	Ala	Met	Gly	Asp	Thr	Ser	Val	Ser	Thr	Ser
5690						5695					5700			
Thr	Pro	Ala	Phe	Phe	Glu	Thr	Arg	Ile	Gln	Thr	Glu	Ser	Thr	Ser
5705						5710					5715			
Ser	Leu	Ile	Pro	Gly	Leu	Arg	Asp	Thr	Arg	Thr	Ser	Glu	Glu	Ile
5720						5725					5730			
Asn	Thr	Val	Thr	Glu	Thr	Ser	Thr	Val	Leu	Ser	Glu	Val	Pro	Thr
5735						5740					5745			
Thr	Thr	Thr	Thr	Glu	Val	Ser	Arg	Thr	Glu	Val	Ile	Thr	Ser	Ser
5750						5755					5760			
Arg	Thr	Thr	Ile	Ser	Gly	Pro	Asp	His	Ser	Lys	Met	Ser	Pro	Tyr
5765						5770					5775			
Ile	Ser	Thr	Glu	Thr	Ile	Thr	Arg	Leu	Ser	Thr	Phe	Pro	Phe	Val
5780						5785					5790			
Thr	Gly	Ser	Thr	Glu	Met	Ala	Ile	Thr	Asn	Gln	Thr	Gly	Pro	Ile
5795						5800					5805			
Gly	Thr	Ile	Ser	Gln	Ala	Thr	Leu	Thr	Leu	Asp	Thr	Ser	Ser	Thr
5810						5815					5820			
Ala	Ser	Trp	Glu	Gly	Thr	His	Ser	Pro	Val	Thr	Gln	Arg	Phe	Pro
5825						5830					5835			
His	Ser	Glu	Glu	Thr	Thr	Thr	Met	Ser	Arg	Ser	Thr	Lys	Gly	Val
5840						5845					5850			
Ser	Trp	Gln	Ser	Pro	Pro	Ser	Val	Glu	Glu	Thr	Ser	Ser	Pro	Ser
5855						5860					5865			
Ser	Pro	Val	Pro	Leu	Pro	Ala	Ile	Thr	Ser	His	Ser	Ser	Leu	Tyr
5870						5875					5880			
Ser	Ala	Val	Ser	Gly	Ser	Ser	Pro	Thr	Ser	Ala	Leu	Pro	Val	Thr
5885						5890					5895			
Ser	Leu	Leu	Thr	Ser	Gly	Arg	Arg	Lys	Thr	Ile	Asp	Met	Leu	Asp
5900						5905					5910			
Thr	His	Ser	Glu	Leu	Val	Thr	Ser	Ser	Leu	Pro	Ser	Ala	Ser	Ser
5915						5920					5925			

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Phe	Ser	Gly	Glu	Ile	Leu	Thr	Ser	Glu	Ala	Ser	Thr	Asn	Thr	Glu
5930						5935						5940		
Thr	Ile	His	Phe	Ser	Glu	Asn	Thr	Ala	Glu	Thr	Asn	Met	Gly	Thr
5945						5950						5955		
Thr	Asn	Ser	Met	His	Lys	Leu	His	Ser	Ser	Val	Ser	Ile	His	Ser
5960						5965						5970		
Gln	Pro	Ser	Gly	His	Thr	Pro	Pro	Lys	Val	Thr	Gly	Ser	Met	Met
5975						5980						5985		
Glu	Asp	Ala	Ile	Val	Ser	Thr	Ser	Thr	Pro	Gly	Ser	Pro	Glu	Thr
5990						5995						6000		
Lys	Asn	Val	Asp	Arg	Asp	Ser	Thr	Ser	Pro	Leu	Thr	Pro	Glu	Leu
6005						6010						6015		
Lys	Glu	Asp	Ser	Thr	Ala	Leu	Val	Met	Asn	Ser	Thr	Thr	Glu	Ser
6020						6025						6030		
Asn	Thr	Val	Phe	Ser	Ser	Val	Ser	Leu	Asp	Ala	Ala	Thr	Glu	Val
6035						6040						6045		
Ser	Arg	Ala	Glu	Val	Thr	Tyr	Tyr	Asp	Pro	Thr	Phe	Met	Pro	Ala
6050						6055						6060		
Ser	Ala	Gln	Ser	Thr	Lys	Ser	Pro	Asp	Ile	Ser	Pro	Glu	Ala	Ser
6065						6070						6075		
Ser	Ser	His	Ser	Asn	Ser	Pro	Pro	Leu	Thr	Ile	Ser	Thr	His	Lys
6080						6085						6090		
Thr	Ile	Ala	Thr	Gln	Thr	Gly	Pro	Ser	Gly	Val	Thr	Ser	Leu	Gly
6095						6100						6105		
Gln	Leu	Thr	Leu	Asp	Thr	Ser	Thr	Ile	Ala	Thr	Ser	Ala	Gly	Thr
6110						6115						6120		
Pro	Ser	Ala	Arg	Thr	Gln	Asp	Phe	Val	Asp	Ser	Glu	Thr	Thr	Ser
6125						6130						6135		
Val	Met	Asn	Asn	Asp	Leu	Asn	Asp	Val	Leu	Lys	Thr	Ser	Pro	Phe
6140						6145						6150		
Ser	Ala	Glu	Glu	Ala	Asn	Ser	Leu	Ser	Ser	Gln	Ala	Pro	Leu	Leu
6155						6160						6165		
Val	Thr	Thr	Ser	Pro	Ser	Pro	Val	Thr	Ser	Thr	Leu	Gln	Glu	His
6170						6175						6180		
Ser	Thr	Ser	Ser	Leu	Val	Ser	Val	Thr	Ser	Val	Pro	Thr	Pro	Thr
6185						6190						6195		
Leu	Ala	Lys	Ile	Thr	Asp	Met	Asp	Thr	Asn	Leu	Glu	Pro	Val	Thr
6200						6205						6210		
Arg	Ser	Pro	Gln	Asn	Leu	Arg	Asn	Thr	Leu	Ala	Thr	Ser	Glu	Ala
6215						6220						6225		
Thr	Thr	Asp	Thr	His	Thr	Met	His	Pro	Ser	Ile	Asn	Thr	Ala	Val
6230						6235						6240		
Ala	Asn	Val	Gly	Thr	Thr	Ser	Ser	Pro	Asn	Glu	Phe	Tyr	Phe	Thr
6245						6250						6255		
Val	Ser	Pro	Asp	Ser	Asp	Pro	Tyr	Lys	Ala	Thr	Ser	Ala	Val	Val
6260						6265						6270		
Ile	Thr	Ser	Thr	Ser	Gly	Asp	Ser	Ile	Val	Ser	Thr	Ser	Met	Pro
6275						6280						6285		

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Arg	Ser	Ser	Ala	Met	Lys	Lys	Ile	Glu	Ser	Glu	Thr	Thr	Phe	Ser
6290						6295					6300			
Leu	Ile	Phe	Arg	Leu	Arg	Glu	Thr	Ser	Thr	Ser	Gln	Lys	Ile	Gly
6305						6310					6315			
Ser	Ser	Ser	Asp	Thr	Ser	Thr	Val	Phe	Asp	Lys	Ala	Phe	Thr	Ala
6320						6325					6330			
Ala	Thr	Thr	Glu	Val	Ser	Arg	Thr	Glu	Leu	Thr	Ser	Ser	Ser	Arg
6335						6340					6345			
Thr	Ser	Ile	Gln	Gly	Thr	Glu	Lys	Pro	Thr	Met	Ser	Pro	Asp	Thr
6350						6355					6360			
Ser	Thr	Arg	Ser	Val	Thr	Met	Leu	Ser	Thr	Phe	Ala	Gly	Leu	Thr
6365						6370					6375			
Lys	Ser	Glu	Glu	Arg	Thr	Ile	Ala	Thr	Gln	Thr	Gly	Pro	His	Arg
6380						6385					6390			
Ala	Thr	Ser	Gln	Gly	Thr	Leu	Thr	Trp	Asp	Thr	Ser	Ile	Thr	Thr
6395						6400					6405			
Ser	Gln	Ala	Gly	Thr	His	Ser	Ala	Met	Thr	His	Gly	Phe	Ser	Gln
6410						6415					6420			
Leu	Asp	Leu	Ser	Thr	Leu	Thr	Ser	Arg	Val	Pro	Glu	Tyr	Ile	Ser
6425						6430					6435			
Gly	Thr	Ser	Pro	Pro	Ser	Val	Glu	Lys	Thr	Ser	Ser	Ser	Ser	Ser
6440						6445					6450			
Leu	Leu	Ser	Leu	Pro	Ala	Ile	Thr	Ser	Pro	Ser	Pro	Val	Pro	Thr
6455						6460					6465			
Thr	Leu	Pro	Glu	Ser	Arg	Pro	Ser	Ser	Pro	Val	His	Leu	Thr	Ser
6470						6475					6480			
Leu	Pro	Thr	Ser	Gly	Leu	Val	Lys	Thr	Thr	Asp	Met	Leu	Ala	Ser
6485						6490					6495			
Val	Ala	Ser	Leu	Pro	Pro	Asn	Leu	Gly	Ser	Thr	Ser	His	Lys	Ile
6500						6505					6510			
Pro	Thr	Thr	Ser	Glu	Asp	Ile	Lys	Asp	Thr	Glu	Lys	Met	Tyr	Pro
6515						6520					6525			
Ser	Thr	Asn	Ile	Ala	Val	Thr	Asn	Val	Gly	Thr	Thr	Thr	Ser	Glu
6530						6535					6540			
Lys	Glu	Ser	Tyr	Ser	Ser	Val	Pro	Ala	Tyr	Ser	Glu	Pro	Pro	Lys
6545						6550					6555			
Val	Thr	Ser	Pro	Met	Val	Thr	Ser	Phe	Asn	Ile	Arg	Asp	Thr	Ile
6560						6565					6570			
Val	Ser	Thr	Ser	Met	Pro	Gly	Ser	Ser	Glu	Ile	Thr	Arg	Ile	Glu
6575						6580					6585			
Met	Glu	Ser	Thr	Phe	Ser	Leu	Ala	His	Gly	Leu	Lys	Gly	Thr	Ser
6590						6595					6600			
Thr	Ser	Gln	Asp	Pro	Ile	Val	Ser	Thr	Glu	Lys	Ser	Ala	Val	Leu
6605						6610					6615			
His	Lys	Leu	Thr	Thr	Gly	Ala	Thr	Glu	Thr	Ser	Arg	Thr	Glu	Val
6620						6625					6630			
Ala	Ser	Ser	Arg	Arg	Thr	Ser	Ile	Pro	Gly	Pro	Asp	His	Ser	Thr
6635						6640					6645			

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Glu Ser Pro Asp Ile Ser Thr	Glu Val Ile Pro Ser	Leu Pro Ile
6650	6655	6660
Ser Leu Gly Ile Thr Glu Ser	Ser Asn Met Thr Ile	Ile Thr Arg
6665	6670	6675
Thr Gly Pro Pro Leu Gly Ser	Thr Ser Gln Gly Thr	Phe Thr Leu
6680	6685	6690
Asp Thr Pro Thr Thr Ser Ser	Arg Ala Gly Thr His	Ser Met Ala
6695	6700	6705
Thr Gln Glu Phe Pro His Ser	Glu Met Thr Thr Val	Met Asn Lys
6710	6715	6720
Asp Pro Glu Ile Leu Ser Trp	Thr Ile Pro Pro Ser	Ile Glu Lys
6725	6730	6735
Thr Ser Phe Ser Ser Ser Leu	Met Pro Ser Pro Ala	Met Thr Ser
6740	6745	6750
Pro Pro Val Ser Ser Thr Leu	Pro Lys Thr Ile His	Thr Thr Pro
6755	6760	6765
Ser Pro Met Thr Ser Leu Leu	Thr Pro Ser Leu Val	Met Thr Thr
6770	6775	6780
Asp Thr Leu Gly Thr Ser Pro	Glu Pro Thr Thr Ser	Ser Pro Pro
6785	6790	6795
Asn Leu Ser Ser Thr Ser His	Glu Ile Leu Thr Thr	Asp Glu Asp
6800	6805	6810
Thr Thr Ala Ile Glu Ala Met	His Pro Ser Thr Ser	Thr Ala Ala
6815	6820	6825
Thr Asn Val Glu Thr Thr Ser	Ser Gly His Gly Ser	Gln Ser Ser
6830	6835	6840
Val Leu Ala Asp Ser Glu Lys	Thr Lys Ala Thr Ala	Pro Met Asp
6845	6850	6855
Thr Thr Ser Thr Met Gly His	Thr Thr Val Ser Thr	Ser Met Ser
6860	6865	6870
Val Ser Ser Glu Thr Thr Lys	Ile Lys Arg Glu Ser	Thr Tyr Ser
6875	6880	6885
Leu Thr Pro Gly Leu Arg Glu	Thr Ser Ile Ser Gln	Asn Ala Ser
6890	6895	6900
Phe Ser Thr Asp Thr Ser Ile	Val Leu Ser Glu Val	Pro Thr Gly
6905	6910	6915
Thr Thr Ala Glu Val Ser Arg	Thr Glu Val Thr Ser	Ser Gly Arg
6920	6925	6930
Thr Ser Ile Pro Gly Pro Ser	Gln Ser Thr Val Leu	Pro Glu Ile
6935	6940	6945
Ser Thr Arg Thr Met Thr Arg	Leu Phe Ala Ser Pro	Thr Met Thr
6950	6955	6960
Glu Ser Ala Glu Met Thr Ile	Pro Thr Gln Thr Gly	Pro Ser Gly
6965	6970	6975
Ser Thr Ser Gln Asp Thr Leu	Thr Leu Asp Thr Ser	Thr Thr Lys
6980	6985	6990
Ser Gln Ala Lys Thr His Ser	Thr Leu Thr Gln Arg	Phe Pro His
6995	7000	7005

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Ser	Glu	Met	Thr	Thr	Leu	Met	Ser	Arg	Gly	Pro	Gly	Asp	Met	Ser
7010						7015					7020			
Trp	Gln	Ser	Ser	Pro	Ser	Leu	Glu	Asn	Pro	Ser	Ser	Leu	Pro	Ser
7025						7030					7035			
Leu	Leu	Ser	Leu	Pro	Ala	Thr	Thr	Ser	Pro	Pro	Pro	Ile	Ser	Ser
7040						7045					7050			
Thr	Leu	Pro	Val	Thr	Ile	Ser	Ser	Ser	Pro	Leu	Pro	Val	Thr	Ser
7055						7060					7065			
Leu	Leu	Thr	Ser	Ser	Pro	Val	Thr	Thr	Thr	Asp	Met	Leu	His	Thr
7070						7075					7080			
Ser	Pro	Glu	Leu	Val	Thr	Ser	Ser	Pro	Pro	Lys	Leu	Ser	His	Thr
7085						7090					7095			
Ser	Asp	Glu	Arg	Leu	Thr	Thr	Gly	Lys	Asp	Thr	Thr	Asn	Thr	Glu
7100						7105					7110			
Ala	Val	His	Pro	Ser	Thr	Asn	Thr	Ala	Ala	Ser	Asn	Val	Glu	Ile
7115						7120					7125			
Pro	Ser	Ser	Gly	His	Glu	Ser	Pro	Ser	Ser	Ala	Leu	Ala	Asp	Ser
7130						7135					7140			
Glu	Thr	Ser	Lys	Ala	Thr	Ser	Pro	Met	Phe	Ile	Thr	Ser	Thr	Gln
7145						7150					7155			
Glu	Asp	Thr	Thr	Val	Ala	Ile	Ser	Thr	Pro	His	Phe	Leu	Glu	Thr
7160						7165					7170			
Ser	Arg	Ile	Gln	Lys	Glu	Ser	Ile	Ser	Ser	Leu	Ser	Pro	Lys	Leu
7175						7180					7185			
Arg	Glu	Thr	Gly	Ser	Ser	Val	Glu	Thr	Ser	Ser	Ala	Ile	Glu	Thr
7190						7195					7200			
Ser	Ala	Val	Leu	Ser	Glu	Val	Ser	Ile	Gly	Ala	Thr	Thr	Glu	Ile
7205						7210					7215			
Ser	Arg	Thr	Glu	Val	Thr	Ser	Ser	Ser	Arg	Thr	Ser	Ile	Ser	Gly
7220						7225					7230			
Ser	Ala	Glu	Ser	Thr	Met	Leu	Pro	Glu	Ile	Ser	Thr	Thr	Arg	Lys
7235						7240					7245			
Ile	Ile	Lys	Phe	Pro	Thr	Ser	Pro	Ile	Leu	Ala	Glu	Ser	Ser	Glu
7250						7255					7260			
Met	Thr	Ile	Lys	Thr	Gln	Thr	Ser	Pro	Pro	Gly	Ser	Thr	Ser	Glu
7265						7270					7275			
Ser	Thr	Phe	Thr	Leu	Asp	Thr	Ser	Thr	Thr	Pro	Ser	Leu	Val	Ile
7280						7285					7290			
Thr	His	Ser	Thr	Met	Thr	Gln	Arg	Leu	Pro	His	Ser	Glu	Ile	Thr
7295						7300					7305			
Thr	Leu	Val	Ser	Arg	Gly	Ala	Gly	Asp	Val	Pro	Arg	Pro	Ser	Ser
7310						7315					7320			
Leu	Pro	Val	Glu	Glu	Thr	Ser	Pro	Pro	Ser	Ser	Gln	Leu	Ser	Leu
7325						7330					7335			
Ser	Ala	Met	Ile	Ser	Pro	Ser	Pro	Val	Ser	Ser	Thr	Leu	Pro	Ala
7340						7345					7350			
Ser	Ser	His	Ser	Ser	Ser	Ala	Ser	Val	Thr	Ser	Leu	Leu	Thr	Pro
7355						7360					7365			

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Gly	Gln	Val	Lys	Thr	Thr	Glu	Val	Leu	Asp	Ala	Ser	Ala	Glu	Pro
7370						7375					7380			
Glu	Thr	Ser	Ser	Pro	Pro	Ser	Leu	Ser	Ser	Thr	Ser	Val	Glu	Ile
7385						7390					7395			
Leu	Ala	Thr	Ser	Glu	Val	Thr	Thr	Asp	Thr	Glu	Lys	Ile	His	Pro
7400						7405					7410			
Phe	Ser	Asn	Thr	Ala	Val	Thr	Lys	Val	Gly	Thr	Ser	Ser	Ser	Gly
7415						7420					7425			
His	Glu	Ser	Pro	Ser	Ser	Val	Leu	Pro	Asp	Ser	Glu	Thr	Thr	Lys
7430						7435					7440			
Ala	Thr	Ser	Ala	Met	Gly	Thr	Ile	Ser	Ile	Met	Gly	Asp	Thr	Ser
7445						7450					7455			
Val	Ser	Thr	Leu	Thr	Pro	Ala	Leu	Ser	Asn	Thr	Arg	Lys	Ile	Gln
7460						7465					7470			
Ser	Glu	Pro	Ala	Ser	Ser	Leu	Thr	Thr	Arg	Leu	Arg	Glu	Thr	Ser
7475						7480					7485			
Thr	Ser	Glu	Glu	Thr	Ser	Leu	Ala	Thr	Glu	Ala	Asn	Thr	Val	Leu
7490						7495					7500			
Ser	Lys	Val	Ser	Thr	Gly	Ala	Thr	Thr	Glu	Val	Ser	Arg	Thr	Glu
7505						7510					7515			
Ala	Ile	Ser	Phe	Ser	Arg	Thr	Ser	Met	Ser	Gly	Pro	Glu	Gln	Ser
7520						7525					7530			
Thr	Met	Ser	Gln	Asp	Ile	Ser	Ile	Gly	Thr	Ile	Pro	Arg	Ile	Ser
7535						7540					7545			
Ala	Ser	Ser	Val	Leu	Thr	Glu	Ser	Ala	Lys	Met	Thr	Ile	Thr	Thr
7550						7555					7560			
Gln	Thr	Gly	Pro	Ser	Glu	Ser	Thr	Leu	Glu	Ser	Thr	Leu	Asn	Leu
7565						7570					7575			
Asn	Thr	Ala	Thr	Thr	Pro	Ser	Trp	Val	Glu	Thr	His	Ser	Ile	Val
7580						7585					7590			
Ile	Gln	Gly	Phe	Pro	His	Pro	Glu	Met	Thr	Thr	Ser	Met	Gly	Arg
7595						7600					7605			
Gly	Pro	Gly	Gly	Val	Ser	Trp	Pro	Ser	Pro	Pro	Phe	Val	Lys	Glu
7610						7615					7620			
Thr	Ser	Pro	Pro	Ser	Ser	Pro	Leu	Ser	Leu	Pro	Ala	Val	Thr	Ser
7625						7630					7635			
Pro	His	Pro	Val	Ser	Thr	Thr	Phe	Leu	Ala	His	Ile	Pro	Pro	Ser
7640						7645					7650			
Pro	Leu	Pro	Val	Thr	Ser	Leu	Leu	Thr	Ser	Gly	Pro	Ala	Thr	Thr
7655						7660					7665			
Thr	Asp	Ile	Leu	Gly	Thr	Ser	Thr	Glu	Pro	Gly	Thr	Ser	Ser	Ser
7670						7675					7680			
Ser	Ser	Leu	Ser	Thr	Thr	Ser	His	Glu	Arg	Leu	Thr	Thr	Tyr	Lys
7685						7690					7695			
Asp	Thr	Ala	His	Thr	Glu	Ala	Val	His	Pro	Ser	Thr	Asn	Thr	Gly
7700						7705					7710			
Gly	Thr	Asn	Val	Ala	Thr	Thr	Ser	Ser	Gly	Tyr	Lys	Ser	Gln	Ser
7715						7720					7725			

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Ser Val	Leu Ala Asp Ser	Ser Ser	Pro Met Cys Thr	Thr Thr	Ser Thr Met
7730		7735		7740	
Gly Asp	Thr Ser Val Leu	Thr Ser	Thr Pro Ala Phe	Leu Glu Thr	
7745		7750		7755	
Arg Arg	Ile Gln Thr Glu	Leu Ala	Ser Ser Leu Thr	Pro Gly Leu	
7760		7765		7770	
Arg Glu	Ser Ser Gly Ser	Glu Gly	Thr Ser Ser Gly	Thr Lys Met	
7775		7780		7785	
Ser Thr	Val Leu Ser Lys	Val Pro	Thr Gly Ala Thr	Thr Glu Ile	
7790		7795		7800	
Ser Lys	Glu Asp Val Thr	Ser Ile	Pro Gly Pro Ala	Gln Ser Thr	
7805		7810		7815	
Ile Ser	Pro Asp Ile Ser	Thr Arg	Thr Val Ser Trp	Phe Ser Thr	
7820		7825		7830	
Ser Pro	Val Met Thr Glu	Ser Ala	Glu Ile Thr Met	Asn Thr His	
7835		7840		7845	
Thr Ser	Pro Leu Gly Ala	Thr Thr	Gln Gly Thr Ser	Thr Leu Asp	
7850		7855		7860	
Thr Ser	Ser Thr Thr Ser	Leu Thr	Met Thr His Ser	Thr Ile Ser	
7865		7870		7875	
Gln Gly	Phe Ser His Ser	Gln Met	Ser Thr Leu Met	Arg Arg Gly	
7880		7885		7890	
Pro Glu	Asp Val Ser Trp	Met Ser	Pro Pro Leu Leu	Glu Lys Thr	
7895		7900		7905	
Arg Pro	Ser Phe Ser Leu	Met Ser	Ser Pro Ala Thr	Thr Ser Pro	
7910		7915		7920	
Ser Pro	Val Ser Ser Thr	Leu Pro	Glu Ser Ile Ser	Ser Ser Pro	
7925		7930		7935	
Leu Pro	Val Thr Ser Leu	Leu Thr	Ser Gly Leu Ala	Lys Thr Thr	
7940		7945		7950	
Asp Met	Leu His Lys Ser	Ser Glu	Pro Val Thr Asn	Ser Pro Ala	
7955		7960		7965	
Asn Leu	Ser Ser Thr Ser	Val Glu	Ile Leu Ala Thr	Ser Glu Val	
7970		7975		7980	
Thr Thr	Asp Thr Glu Lys	Thr His	Pro Ser Ser Asn	Arg Thr Val	
7985		7990		7995	
Thr Asp	Val Gly Thr Ser	Ser Ser	Gly His Glu Ser	Thr Ser Phe	
8000		8005		8010	
Val Leu	Ala Asp Ser Gln	Thr Ser	Lys Val Thr Ser	Pro Met Val	
8015		8020		8025	
Ile Thr	Ser Thr Met Glu	Asp Thr	Ser Val Ser Thr	Ser Thr Pro	
8030		8035		8040	
Gly Phe	Phe Glu Thr Ser	Arg Ile	Gln Thr Glu Pro	Thr Ser Ser	
8045		8050		8055	
Leu Thr	Leu Gly Leu Arg	Lys Thr	Ser Ser Ser Glu	Gly Thr Ser	
8060		8065		8070	
Leu Ala	Thr Glu Met Ser	Thr Val	Leu Ser Gly Val	Pro Thr Gly	
8075		8080		8085	

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Ala Thr	Ala Glu Val Ser	Arg Thr Glu Val Thr Ser	Ser Ser Arg
8090		8095	8100
Thr Ser	Ile Ser Gly Phe	Ala Gln Leu Thr Val Ser	Pro Glu Thr
8105		8110	8115
Ser Thr	Glu Thr Ile Thr	Arg Leu Pro Thr Ser	Ser Ile Met Thr
8120		8125	8130
Glu Ser	Ala Glu Met Met	Ile Lys Thr Gln Thr Asp	Pro Pro Gly
8135		8140	8145
Ser Thr	Pro Glu Ser Thr	His Thr Val Asp Ile Ser	Thr Thr Pro
8150		8155	8160
Asn Trp	Val Glu Thr His	Ser Thr Val Thr Gln Arg	Phe Ser His
8165		8170	8175
Ser Glu	Met Thr Thr Leu	Val Ser Arg Ser Pro Gly	Asp Met Leu
8180		8185	8190
Trp Pro	Ser Gln Ser Ser	Val Glu Glu Thr Ser Ser	Ala Ser Ser
8195		8200	8205
Leu Leu	Ser Leu Pro Ala	Thr Thr Ser Pro Ser Pro	Val Ser Ser
8210		8215	8220
Thr Leu	Val Glu Asp Phe	Pro Ser Ala Ser Leu Pro	Val Thr Ser
8225		8230	8235
Leu Leu	Asn Pro Gly Leu	Val Ile Thr Thr Asp Arg	Met Gly Ile
8240		8245	8250
Ser Arg	Glu Pro Gly Thr	Ser Ser Thr Ser Asn Leu	Ser Ser Thr
8255		8260	8265
Ser His	Glu Arg Leu Thr	Thr Leu Glu Asp Thr Val	Asp Thr Glu
8270		8275	8280
Asp Met	Gln Pro Ser Thr	His Thr Ala Val Thr Asn	Val Arg Thr
8285		8290	8295
Ser Ile	Ser Gly His Glu	Ser Gln Ser Ser Val Leu	Ser Asp Ser
8300		8305	8310
Glu Thr	Pro Lys Ala Thr	Ser Pro Met Gly Thr Thr	Tyr Thr Met
8315		8320	8325
Gly Glu	Thr Ser Val Ser	Ile Ser Thr Ser Asp Phe	Phe Glu Thr
8330		8335	8340
Ser Arg	Ile Gln Ile Glu	Pro Thr Ser Ser Leu Thr	Ser Gly Leu
8345		8350	8355
Arg Glu	Thr Ser Ser Ser	Glu Arg Ile Ser Ser Ala	Thr Glu Gly
8360		8365	8370
Ser Thr	Val Leu Ser Glu	Val Pro Ser Gly Ala Thr	Thr Glu Val
8375		8380	8385
Ser Arg	Thr Glu Val Ile	Ser Ser Arg Gly Thr Ser	Met Ser Gly
8390		8395	8400
Pro Asp	Gln Phe Thr Ile	Ser Pro Asp Ile Ser Thr	Glu Ala Ile
8405		8410	8415
Thr Arg	Leu Ser Thr Ser	Pro Ile Met Thr Glu Ser	Ala Glu Ser
8420		8425	8430
Ala Ile	Thr Ile Glu Thr	Gly Ser Pro Gly Ala Thr	Ser Glu Gly
8435		8440	8445

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Thr	Leu	Thr	Leu	Asp	Thr	Ser	Thr	Thr	Thr	Phe	Trp	Ser	Gly	Thr
8450						8455					8460			
His	Ser	Thr	Ala	Ser	Pro	Gly	Phe	Ser	His	Ser	Glu	Met	Thr	Thr
8465						8470					8475			
Leu	Met	Ser	Arg	Thr	Pro	Gly	Asp	Val	Pro	Trp	Pro	Ser	Leu	Pro
8480						8485					8490			
Ser	Val	Glu	Glu	Ala	Ser	Ser	Val	Ser	Ser	Ser	Leu	Ser	Ser	Pro
8495						8500					8505			
Ala	Met	Thr	Ser	Thr	Ser	Phe	Phe	Ser	Thr	Leu	Pro	Glu	Ser	Ile
8510						8515					8520			
Ser	Ser	Ser	Pro	His	Pro	Val	Thr	Ala	Leu	Leu	Thr	Leu	Gly	Pro
8525						8530					8535			
Val	Lys	Thr	Thr	Asp	Met	Leu	Arg	Thr	Ser	Ser	Glu	Pro	Glu	Thr
8540						8545					8550			
Ser	Ser	Pro	Pro	Asn	Leu	Ser	Ser	Thr	Ser	Ala	Glu	Ile	Leu	Ala
8555						8560					8565			
Thr	Ser	Glu	Val	Thr	Lys	Asp	Arg	Glu	Lys	Ile	His	Pro	Ser	Ser
8570						8575					8580			
Asn	Thr	Pro	Val	Val	Asn	Val	Gly	Thr	Val	Ile	Tyr	Lys	His	Leu
8585						8590					8595			
Ser	Pro	Ser	Ser	Val	Leu	Ala	Asp	Leu	Val	Thr	Thr	Lys	Pro	Thr
8600						8605					8610			
Ser	Pro	Met	Ala	Thr	Thr	Ser	Thr	Leu	Gly	Asn	Thr	Ser	Val	Ser
8615						8620					8625			
Thr	Ser	Thr	Pro	Ala	Phe	Pro	Glu	Thr	Met	Met	Thr	Gln	Pro	Thr
8630						8635					8640			
Ser	Ser	Leu	Thr	Ser	Gly	Leu	Arg	Glu	Ile	Ser	Thr	Ser	Gln	Glu
8645						8650					8655			
Thr	Ser	Ser	Ala	Thr	Glu	Arg	Ser	Ala	Ser	Leu	Ser	Gly	Met	Pro
8660						8665					8670			
Thr	Gly	Ala	Thr	Thr	Lys	Val	Ser	Arg	Thr	Glu	Ala	Leu	Ser	Leu
8675						8680					8685			
Gly	Arg	Thr	Ser	Thr	Pro	Gly	Pro	Ala	Gln	Ser	Thr	Ile	Ser	Pro
8690						8695					8700			
Glu	Ile	Ser	Thr	Glu	Thr	Ile	Thr	Arg	Ile	Ser	Thr	Pro	Leu	Thr
8705						8710					8715			
Thr	Thr	Gly	Ser	Ala	Glu	Met	Thr	Ile	Thr	Pro	Lys	Thr	Gly	His
8720						8725					8730			
Ser	Gly	Ala	Ser	Ser	Gln	Gly	Thr	Phe	Thr	Leu	Asp	Thr	Ser	Ser
8735						8740					8745			
Arg	Ala	Ser	Trp	Pro	Gly	Thr	His	Ser	Ala	Ala	Thr	His	Arg	Ser
8750						8755					8760			
Pro	His	Ser	Gly	Met	Thr	Thr	Pro	Met	Ser	Arg	Gly	Pro	Glu	Asp
8765						8770					8775			
Val	Ser	Trp	Pro	Ser	Arg	Pro	Ser	Val	Glu	Lys	Thr	Ser	Pro	Pro
8780						8785					8790			
Ser	Ser	Leu	Val	Ser	Leu	Ser	Ala	Val	Thr	Ser	Pro	Ser	Pro	Leu
8795						8800					8805			

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Tyr	Ser	Thr	Pro	Ser	Glu	Ser	Ser	His	Ser	Ser	Pro	Leu	Arg	Val
8810						8815					8820			
Thr	Ser	Leu	Phe	Thr	Pro	Val	Met	Met	Lys	Thr	Thr	Asp	Met	Leu
8825						8830						8835		
Asp	Thr	Ser	Leu	Glu	Pro	Val	Thr	Thr	Ser	Pro	Pro	Ser	Met	Asn
8840						8845						8850		
Ile	Thr	Ser	Asp	Glu	Ser	Leu	Ala	Thr	Ser	Lys	Ala	Thr	Met	Glu
8855						8860						8865		
Thr	Glu	Ala	Ile	Gln	Leu	Ser	Glu	Asn	Thr	Ala	Val	Thr	Gln	Met
8870						8875						8880		
Gly	Thr	Ile	Ser	Ala	Arg	Gln	Glu	Phe	Tyr	Ser	Ser	Tyr	Pro	Gly
8885						8890						8895		
Leu	Pro	Glu	Pro	Ser	Lys	Val	Thr	Ser	Pro	Val	Val	Thr	Ser	Ser
8900						8905						8910		
Thr	Ile	Lys	Asp	Ile	Val	Ser	Thr	Thr	Ile	Pro	Ala	Ser	Ser	Glu
8915						8920						8925		
Ile	Thr	Arg	Ile	Glu	Met	Glu	Ser	Thr	Ser	Thr	Leu	Thr	Pro	Thr
8930						8935						8940		
Pro	Arg	Glu	Thr	Ser	Thr	Ser	Gln	Glu	Ile	His	Ser	Ala	Thr	Lys
8945						8950						8955		
Pro	Ser	Thr	Val	Pro	Tyr	Lys	Ala	Leu	Thr	Ser	Ala	Thr	Ile	Glu
8960						8965						8970		
Asp	Ser	Met	Thr	Gln	Val	Met	Ser	Ser	Ser	Arg	Gly	Pro	Ser	Pro
8975						8980						8985		
Asp	Gln	Ser	Thr	Met	Ser	Gln	Asp	Ile	Ser	Thr	Glu	Val	Ile	Thr
8990						8995						9000		
Arg	Leu	Ser	Thr	Ser	Pro	Ile	Lys	Thr	Glu	Ser	Thr	Glu	Met	Thr
9005						9010						9015		
Ile	Thr	Thr	Gln	Thr	Gly	Ser	Pro	Gly	Ala	Thr	Ser	Arg	Gly	Thr
9020						9025						9030		
Leu	Thr	Leu	Asp	Thr	Ser	Thr	Thr	Phe	Met	Ser	Gly	Thr	His	Ser
9035						9040						9045		
Thr	Ala	Ser	Gln	Gly	Phe	Ser	His	Ser	Gln	Met	Thr	Ala	Leu	Met
9050						9055						9060		
Ser	Arg	Thr	Pro	Gly	Asp	Val	Pro	Trp	Leu	Ser	His	Pro	Ser	Val
9065						9070						9075		
Glu	Glu	Ala	Ser	Ser	Ala	Ser	Phe	Ser	Leu	Ser	Ser	Pro	Val	Met
9080						9085						9090		
Thr	Ser	Ser	Ser	Pro	Val	Ser	Ser	Thr	Leu	Pro	Asp	Ser	Ile	His
9095						9100						9105		
Ser	Ser	Ser	Leu	Pro	Val	Thr	Ser	Leu	Leu	Thr	Ser	Gly	Leu	Val
9110						9115						9120		
Lys	Thr	Thr	Glu	Leu	Leu	Gly	Thr	Ser	Ser	Glu	Pro	Glu	Thr	Ser
9125						9130						9135		
Ser	Pro	Pro	Asn	Leu	Ser	Ser	Thr	Ser	Ala	Glu	Ile	Leu	Ala	Ile
9140						9145						9150		
Thr	Glu	Val	Thr	Thr	Asp	Thr	Glu	Lys	Leu	Glu	Met	Thr	Asn	Val
9155						9160						9165		

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Val	Thr	Ser	Gly	Tyr	Thr	His	Glu	Ser	Pro	Ser	Ser	Val	Leu	Ala
9170						9175					9180			
Asp	Ser	Val	Thr	Thr	Lys	Ala	Thr	Ser	Ser	Met	Gly	Ile	Thr	Tyr
9185						9190					9195			
Pro	Thr	Gly	Asp	Thr	Asn	Val	Leu	Thr	Ser	Thr	Pro	Ala	Phe	Ser
9200						9205					9210			
Asp	Thr	Ser	Arg	Ile	Gln	Thr	Lys	Ser	Lys	Leu	Ser	Leu	Thr	Pro
9215						9220					9225			
Gly	Leu	Met	Glu	Thr	Ser	Ile	Ser	Glu	Glu	Thr	Ser	Ser	Ala	Thr
9230						9235					9240			
Glu	Lys	Ser	Thr	Val	Leu	Ser	Ser	Val	Pro	Thr	Gly	Ala	Thr	Thr
9245						9250					9255			
Glu	Val	Ser	Arg	Thr	Glu	Ala	Ile	Ser	Ser	Ser	Arg	Thr	Ser	Ile
9260						9265					9270			
Pro	Gly	Pro	Ala	Gln	Ser	Thr	Met	Ser	Ser	Asp	Thr	Ser	Met	Glu
9275						9280					9285			
Thr	Ile	Thr	Arg	Ile	Ser	Thr	Pro	Leu	Thr	Arg	Lys	Glu	Ser	Thr
9290						9295					9300			
Asp	Met	Ala	Ile	Thr	Pro	Lys	Thr	Gly	Pro	Ser	Gly	Ala	Thr	Ser
9305						9310					9315			
Gln	Gly	Thr	Phe	Thr	Leu	Asp	Ser	Ser	Ser	Thr	Ala	Ser	Trp	Pro
9320						9325					9330			
Gly	Thr	His	Ser	Ala	Thr	Thr	Gln	Arg	Phe	Pro	Gln	Ser	Val	Val
9335						9340					9345			
Thr	Thr	Pro	Met	Ser	Arg	Gly	Pro	Glu	Asp	Val	Ser	Trp	Pro	Ser
9350						9355					9360			
Pro	Leu	Ser	Val	Glu	Lys	Asn	Ser	Pro	Pro	Ser	Ser	Leu	Val	Ser
9365						9370					9375			
Ser	Ser	Ser	Val	Thr	Ser	Pro	Ser	Pro	Leu	Tyr	Ser	Thr	Pro	Ser
9380						9385					9390			
Gly	Ser	Ser	His	Ser	Ser	Pro	Val	Pro	Val	Thr	Ser	Leu	Phe	Thr
9395						9400					9405			
Ser	Ile	Met	Met	Lys	Ala	Thr	Asp	Met	Leu	Asp	Ala	Ser	Leu	Glu
9410						9415					9420			
Pro	Glu	Thr	Thr	Ser	Ala	Pro	Asn	Met	Asn	Ile	Thr	Ser	Asp	Glu
9425						9430					9435			
Ser	Leu	Ala	Ala	Ser	Lys	Ala	Thr	Thr	Glu	Thr	Glu	Ala	Ile	His
9440						9445					9450			
Val	Phe	Glu	Asn	Thr	Ala	Ala	Ser	His	Val	Glu	Thr	Thr	Ser	Ala
9455						9460					9465			
Thr	Glu	Glu	Leu	Tyr	Ser	Ser	Ser	Pro	Gly	Phe	Ser	Glu	Pro	Thr
9470						9475					9480			
Lys	Val	Ile	Ser	Pro	Val	Val	Thr	Ser	Ser	Ser	Ile	Arg	Asp	Asn
9485						9490					9495			
Met	Val	Ser	Thr	Thr	Met	Pro	Gly	Ser	Ser	Gly	Ile	Thr	Arg	Ile
9500						9505					9510			
Glu	Ile	Glu	Ser	Met	Ser	Ser	Leu	Thr	Pro	Gly	Leu	Arg	Glu	Thr
9515						9520					9525			

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Arg	Thr	Ser	Gln	Asp	Ile	Thr	Ser	Ser	Thr	Glu	Thr	Ser	Thr	Val
9530						9535					9540			
Leu	Tyr	Lys	Met	Pro	Ser	Gly	Ala	Thr	Pro	Glu	Val	Ser	Arg	Thr
9545						9550					9555			
Glu	Val	Met	Pro	Ser	Ser	Arg	Thr	Ser	Ile	Pro	Gly	Pro	Ala	Gln
9560						9565					9570			
Ser	Thr	Met	Ser	Leu	Asp	Ile	Ser	Asp	Glu	Val	Val	Thr	Arg	Leu
9575						9580					9585			
Ser	Thr	Ser	Pro	Ile	Met	Thr	Glu	Ser	Ala	Glu	Ile	Thr	Ile	Thr
9590						9595					9600			
Thr	Gln	Thr	Gly	Tyr	Ser	Leu	Ala	Thr	Ser	Gln	Val	Thr	Leu	Pro
9605						9610					9615			
Leu	Gly	Thr	Ser	Met	Thr	Phe	Leu	Ser	Gly	Thr	His	Ser	Thr	Met
9620						9625					9630			
Ser	Gln	Gly	Leu	Ser	His	Ser	Glu	Met	Thr	Asn	Leu	Met	Ser	Arg
9635						9640					9645			
Gly	Pro	Glu	Ser	Leu	Ser	Trp	Thr	Ser	Pro	Arg	Phe	Val	Glu	Thr
9650						9655					9660			
Thr	Arg	Ser	Ser	Ser	Ser	Leu	Thr	Ser	Leu	Pro	Leu	Thr	Thr	Ser
9665						9670					9675			
Leu	Ser	Pro	Val	Ser	Ser	Thr	Leu	Leu	Asp	Ser	Ser	Pro	Ser	Ser
9680						9685					9690			
Pro	Leu	Pro	Val	Thr	Ser	Leu	Ile	Leu	Pro	Gly	Leu	Val	Lys	Thr
9695						9700					9705			
Thr	Glu	Val	Leu	Asp	Thr	Ser	Ser	Glu	Pro	Lys	Thr	Ser	Ser	Ser
9710						9715					9720			
Pro	Asn	Leu	Ser	Ser	Thr	Ser	Val	Glu	Ile	Pro	Ala	Thr	Ser	Glu
9725						9730					9735			
Ile	Met	Thr	Asp	Thr	Glu	Lys	Ile	His	Pro	Ser	Ser	Asn	Thr	Ala
9740						9745					9750			
Val	Ala	Lys	Val	Arg	Thr	Ser	Ser	Ser	Val	His	Glu	Ser	His	Ser
9755						9760					9765			
Ser	Val	Leu	Ala	Asp	Ser	Glu	Thr	Thr	Ile	Thr	Ile	Pro	Ser	Met
9770						9775					9780			
Gly	Ile	Thr	Ser	Ala	Val	Asp	Asp	Thr	Thr	Val	Phe	Thr	Ser	Asn
9785						9790					9795			
Pro	Ala	Phe	Ser	Glu	Thr	Arg	Arg	Ile	Pro	Thr	Glu	Pro	Thr	Phe
9800						9805					9810			
Ser	Leu	Thr	Pro	Gly	Phe	Arg	Glu	Thr	Ser	Thr	Ser	Glu	Glu	Thr
9815						9820					9825			
Thr	Ser	Ile	Thr	Glu	Thr	Ser	Ala	Val	Leu	Tyr	Gly	Val	Pro	Thr
9830						9835					9840			
Ser	Ala	Thr	Thr	Glu	Val	Ser	Met	Thr	Glu	Ile	Met	Ser	Ser	Asn
9845						9850					9855			
Arg	Ile	His	Ile	Pro	Asp	Ser	Asp	Gln	Ser	Thr	Met	Ser	Pro	Asp
9860						9865					9870			
Ile	Ile	Thr	Glu	Val	Ile	Thr	Arg	Leu	Ser	Ser	Ser	Ser	Met	Met
9875						9880					9885			

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Ser	Glu	Ser	Thr	Gln	Met	Thr	Ile	Thr	Thr	Gln	Lys	Ser	Ser	Pro
9890						9895					9900			
Gly	Ala	Thr	Ala	Gln	Ser	Thr	Leu	Thr	Leu	Ala	Thr	Thr	Thr	Ala
9905						9910					9915			
Pro	Leu	Ala	Arg	Thr	His	Ser	Thr	Val	Pro	Pro	Arg	Phe	Leu	His
9920						9925					9930			
Ser	Glu	Met	Thr	Thr	Leu	Met	Ser	Arg	Ser	Pro	Glu	Asn	Pro	Ser
9935						9940					9945			
Trp	Lys	Ser	Ser	Leu	Phe	Val	Glu	Lys	Thr	Ser	Ser	Ser	Ser	Ser
9950						9955					9960			
Leu	Leu	Ser	Leu	Pro	Val	Thr	Thr	Ser	Pro	Ser	Val	Ser	Ser	Thr
9965						9970					9975			
Leu	Pro	Gln	Ser	Ile	Pro	Ser	Ser	Ser	Phe	Ser	Val	Thr	Ser	Leu
9980						9985					9990			
Leu	Thr	Pro	Gly	Met	Val	Lys	Thr	Thr	Asp	Thr	Ser	Thr	Glu	Pro
9995						10000					10005			
Gly	Thr	Ser	Leu	Ser	Pro	Asn	Leu	Ser	Gly	Thr	Ser	Val	Glu	Ile
10010						10015					10020			
Leu	Ala	Ala	Ser	Glu	Val	Thr	Thr	Asp	Thr	Glu	Lys	Ile	His	Pro
10025						10030					10035			
Ser	Ser	Ser	Met	Ala	Val	Thr	Asn	Val	Gly	Thr	Thr	Ser	Ser	Gly
10040						10045					10050			
His	Glu	Leu	Tyr	Ser	Ser	Val	Ser	Ile	His	Ser	Glu	Pro	Ser	Lys
10055						10060					10065			
Ala	Thr	Tyr	Pro	Val	Gly	Thr	Pro	Ser	Ser	Met	Ala	Glu	Thr	Ser
10070						10075					10080			
Ile	Ser	Thr	Ser	Met	Pro	Ala	Asn	Phe	Glu	Thr	Thr	Gly	Phe	Glu
10085						10090					10095			
Ala	Glu	Pro	Phe	Ser	His	Leu	Thr	Ser	Gly	Phe	Arg	Lys	Thr	Asn
10100						10105					10110			
Met	Ser	Leu	Asp	Thr	Ser	Ser	Val	Thr	Pro	Thr	Asn	Thr	Pro	Ser
10115						10120					10125			
Ser	Pro	Gly	Ser	Thr	His	Leu	Leu	Gln	Ser	Ser	Lys	Thr	Asp	Phe
10130						10135					10140			
Thr	Ser	Ser	Ala	Lys	Thr	Ser	Ser	Pro	Asp	Trp	Pro	Pro	Ala	Ser
10145						10150					10155			
Gln	Tyr	Thr	Glu	Ile	Pro	Val	Asp	Ile	Ile	Thr	Pro	Phe	Asn	Ala
10160						10165					10170			
Ser	Pro	Ser	Ile	Thr	Glu	Ser	Thr	Gly	Ile	Thr	Ser	Phe	Pro	Glu
10175						10180					10185			
Ser	Arg	Phe	Thr	Met	Ser	Val	Thr	Glu	Ser	Thr	His	His	Leu	Ser
10190						10195					10200			
Thr	Asp	Leu	Leu	Pro	Ser	Ala	Glu	Thr	Ile	Ser	Thr	Gly	Thr	Val
10205						10210					10215			
Met	Pro	Ser	Leu	Ser	Glu	Ala	Met	Thr	Ser	Phe	Ala	Thr	Thr	Gly
10220						10225					10230			
Val	Pro	Arg	Ala	Ile	Ser	Gly	Ser	Gly	Ser	Pro	Phe	Ser	Arg	Thr
10235						10240					10245			

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Glu	Ser	Gly	Pro	Gly	Asp	Ala	Thr	Leu	Ser	Thr	Ile	Ala	Glu	Ser
10250						10255					10260			
Leu	Pro	Ser	Ser	Thr	Pro	Val	Pro	Phe	Ser	Ser	Ser	Thr	Phe	Thr
10265						10270					10275			
Thr	Thr	Asp	Ser	Ser	Thr	Ile	Pro	Ala	Leu	His	Glu	Ile	Thr	Ser
10280						10285					10290			
Ser	Ser	Ala	Thr	Pro	Tyr	Arg	Val	Asp	Thr	Ser	Leu	Gly	Thr	Glu
10295						10300					10305			
Ser	Ser	Thr	Thr	Glu	Gly	Arg	Leu	Val	Met	Val	Ser	Thr	Leu	Asp
10310						10315					10320			
Thr	Ser	Ser	Gln	Pro	Gly	Arg	Thr	Ser	Ser	Ser	Pro	Ile	Leu	Asp
10325						10330					10335			
Thr	Arg	Met	Thr	Glu	Ser	Val	Glu	Leu	Gly	Thr	Val	Thr	Ser	Ala
10340						10345					10350			
Tyr	Gln	Val	Pro	Ser	Leu	Ser	Thr	Arg	Leu	Thr	Arg	Thr	Asp	Gly
10355						10360					10365			
Ile	Met	Glu	His	Ile	Thr	Lys	Ile	Pro	Asn	Glu	Ala	Ala	His	Arg
10370						10375					10380			
Gly	Thr	Ile	Arg	Pro	Val	Lys	Gly	Pro	Gln	Thr	Ser	Thr	Ser	Pro
10385						10390					10395			
Ala	Ser	Pro	Lys	Gly	Leu	His	Thr	Gly	Gly	Thr	Lys	Arg	Met	Glu
10400						10405					10410			
Thr	Thr	Thr	Thr	Ala	Leu	Lys	Thr	Thr	Thr	Thr	Ala	Leu	Lys	Thr
10415						10420					10425			
Thr	Ser	Arg	Ala	Thr	Leu	Thr	Thr	Ser	Val	Tyr	Thr	Pro	Thr	Leu
10430						10435					10440			
Gly	Thr	Leu	Thr	Pro	Leu	Asn	Ala	Ser	Met	Gln	Met	Ala	Ser	Thr
10445						10450					10455			
Ile	Pro	Thr	Glu	Met	Met	Ile	Thr	Thr	Pro	Tyr	Val	Phe	Pro	Asp
10460						10465					10470			
Val	Pro	Glu	Thr	Thr	Ser	Ser	Leu	Ala	Thr	Ser	Leu	Gly	Ala	Glu
10475						10480					10485			
Thr	Ser	Thr	Ala	Leu	Pro	Arg	Thr	Thr	Pro	Ser	Val	Phe	Asn	Arg
10490						10495					10500			
Glu	Ser	Glu	Thr	Thr	Ala	Ser	Leu	Val	Ser	Arg	Ser	Gly	Ala	Glu
10505						10510					10515			
Arg	Ser	Pro	Val	Ile	Gln	Thr	Leu	Asp	Val	Ser	Ser	Ser	Glu	Pro
10520						10525					10530			
Asp	Thr	Thr	Ala	Ser	Trp	Val	Ile	His	Pro	Ala	Glu	Thr	Ile	Pro
10535						10540					10545			
Thr	Val	Ser	Lys	Thr	Thr	Pro	Asn	Phe	Phe	His	Ser	Glu	Leu	Asp
10550						10555					10560			
Thr	Val	Ser	Ser	Thr	Ala	Thr	Ser	His	Gly	Ala	Asp	Val	Ser	Ser
10565						10570					10575			
Ala	Ile	Pro	Thr	Asn	Ile	Ser	Pro	Ser	Glu	Leu	Asp	Ala	Leu	Thr
10580						10585					10590			
Pro	Leu	Val	Thr	Ile	Ser	Gly	Thr	Asp	Thr	Ser	Thr	Thr	Phe	Pro
10595						10600					10605			

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Thr	Leu	Thr	Lys	Ser	Pro	His	Glu	Thr	Glu	Thr	Arg	Thr	Thr	Trp
10610						10615					10620			
Leu	Thr	His	Pro	Ala	Glu	Thr	Ser	Ser	Thr	Ile	Pro	Arg	Thr	Ile
10625						10630					10635			
Pro	Asn	Phe	Ser	His	His	Glu	Ser	Asp	Ala	Thr	Pro	Ser	Ile	Ala
10640						10645					10650			
Thr	Ser	Pro	Gly	Ala	Glu	Thr	Ser	Ser	Ala	Ile	Pro	Ile	Met	Thr
10655						10660					10665			
Val	Ser	Pro	Gly	Ala	Glu	Asp	Leu	Val	Thr	Ser	Gln	Val	Thr	Ser
10670						10675					10680			
Ser	Gly	Thr	Asp	Arg	Asn	Met	Thr	Ile	Pro	Thr	Leu	Thr	Leu	Ser
10685						10690					10695			
Pro	Gly	Glu	Pro	Lys	Thr	Ile	Ala	Ser	Leu	Val	Thr	His	Pro	Glu
10700						10705					10710			
Ala	Gln	Thr	Ser	Ser	Ala	Ile	Pro	Thr	Ser	Thr	Ile	Ser	Pro	Ala
10715						10720					10725			
Val	Ser	Arg	Leu	Val	Thr	Ser	Met	Val	Thr	Ser	Leu	Ala	Ala	Lys
10730						10735					10740			
Thr	Ser	Thr	Thr	Asn	Arg	Ala	Leu	Thr	Asn	Ser	Pro	Gly	Glu	Pro
10745						10750					10755			
Ala	Thr	Thr	Val	Ser	Leu	Val	Thr	His	Pro	Ala	Gln	Thr	Ser	Pro
10760						10765					10770			
Thr	Val	Pro	Trp	Thr	Thr	Ser	Ile	Phe	Phe	His	Ser	Lys	Ser	Asp
10775						10780					10785			
Thr	Thr	Pro	Ser	Met	Thr	Thr	Ser	His	Gly	Ala	Glu	Ser	Ser	Ser
10790						10795					10800			
Ala	Val	Pro	Thr	Pro	Thr	Val	Ser	Thr	Glu	Val	Pro	Gly	Val	Val
10805						10810					10815			
Thr	Pro	Leu	Val	Thr	Ser	Ser	Arg	Ala	Val	Ile	Ser	Thr	Thr	Ile
10820						10825					10830			
Pro	Ile	Leu	Thr	Leu	Ser	Pro	Gly	Glu	Pro	Glu	Thr	Thr	Pro	Ser
10835						10840					10845			
Met	Ala	Thr	Ser	His	Gly	Glu	Glu	Ala	Ser	Ser	Ala	Ile	Pro	Thr
10850						10855					10860			
Pro	Thr	Val	Ser	Pro	Gly	Val	Pro	Gly	Val	Val	Thr	Ser	Leu	Val
10865						10870					10875			
Thr	Ser	Ser	Arg	Ala	Val	Thr	Ser	Thr	Thr	Ile	Pro	Ile	Leu	Thr
10880						10885					10890			
Phe	Ser	Leu	Gly	Glu	Pro	Glu	Thr	Thr	Pro	Ser	Met	Ala	Thr	Ser
10895						10900					10905			
His	Gly	Thr	Glu	Ala	Gly	Ser	Ala	Val	Pro	Thr	Val	Leu	Pro	Glu
10910						10915					10920			
Val	Pro	Gly	Met	Val	Thr	Ser	Leu	Val	Ala	Ser	Ser	Arg	Ala	Val
10925						10930					10935			
Thr	Ser	Thr	Thr	Leu	Pro	Thr	Leu	Thr	Leu	Ser	Pro	Gly	Glu	Pro
10940						10945					10950			
Glu	Thr	Thr	Pro	Ser	Met	Ala	Thr	Ser	His	Gly	Ala	Glu	Ala	Ser
10955						10960					10965			

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Ser Thr	Val Pro Thr Val	Ser Pro Glu Val Pro Gly	Val Val Thr
10970		10975	10980
Ser Leu	Val Thr Ser Ser	Ser Gly Val Asn Ser Thr	Ser Ile Pro
10985		10990	10995
Thr Leu	Ile Leu Ser Pro	Gly Glu Leu Glu Thr Thr	Pro Ser Met
11000		11005	11010
Ala Thr	Ser His Gly Ala	Glu Ala Ser Ser Ala Val	Pro Thr Pro
11015		11020	11025
Thr Val	Ser Pro Gly Val	Ser Gly Val Val Thr Pro	Leu Val Thr
11030		11035	11040
Ser Ser	Arg Ala Val Thr	Ser Thr Thr Ile Pro Ile	Leu Thr Leu
11045		11050	11055
Ser Ser	Ser Glu Pro Glu Thr	Thr Thr Pro Ser Met Ala	Thr Ser His
11060		11065	11070
Gly Val	Glu Ala Ser Ser	Ala Val Leu Thr Val Ser	Pro Glu Val
11075		11080	11085
Pro Gly	Met Val Thr Ser	Leu Val Thr Ser Ser Arg	Ala Val Thr
11090		11095	11100
Ser Thr	Thr Ile Pro Thr	Leu Thr Ile Ser Ser Asp	Glu Pro Glu
11105		11110	11115
Thr Thr	Thr Ser Leu Val	Thr His Ser Glu Ala Lys	Met Ile Ser
11120		11125	11130
Ala Ile	Pro Thr Leu Ala	Val Ser Pro Thr Val Gln	Gly Leu Val
11135		11140	11145
Thr Ser	Leu Val Thr Ser	Ser Gly Ser Glu Thr Ser	Ala Phe Ser
11150		11155	11160
Asn Leu	Thr Val Ala Ser	Ser Gln Pro Glu Thr Ile	Asp Ser Trp
11165		11170	11175
Val Ala	His Pro Gly Thr	Glu Ala Ser Ser Val Val	Pro Thr Leu
11180		11185	11190
Thr Val	Ser Thr Gly Glu	Pro Phe Thr Asn Ile Ser	Leu Val Thr
11195		11200	11205
His Pro	Ala Glu Ser Ser	Ser Thr Leu Pro Arg Thr	Thr Ser Arg
11210		11215	11220
Phe Ser	His Ser Glu Leu	Asp Thr Met Pro Ser Thr	Val Thr Ser
11225		11230	11235
Pro Glu	Ala Glu Ser Ser	Ser Ala Ile Ser Thr Thr	Ile Ser Pro
11240		11245	11250
Gly Ile	Pro Gly Val Leu	Thr Ser Leu Val Thr Ser	Ser Ser Gly Arg
11255		11260	11265
Asp Ile	Ser Ala Thr Phe	Pro Thr Val Pro Glu Ser	Pro His Glu
11270		11275	11280
Ser Glu	Ala Thr Ala Ser	Trp Val Thr His Pro Ala	Val Thr Ser
11285		11290	11295
Thr Thr	Val Pro Arg Thr	Thr Pro Asn Tyr Ser His	Ser Glu Pro
11300		11305	11310
Asp Thr	Thr Pro Ser Ile	Ala Thr Ser Pro Gly Ala	Glu Ala Thr
11315		11320	11325

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Ser	Asp	Phe	Pro	Thr	Ile	Thr	Val	Ser	Pro	Asp	Val	Pro	Asp	Met
11330						11335					11340			
Val	Thr	Ser	Gln	Val	Thr	Ser	Ser	Gly	Thr	Asp	Thr	Ser	Ile	Thr
11345						11350					11355			
Ile	Pro	Thr	Leu	Thr	Leu	Ser	Ser	Gly	Glu	Pro	Glu	Thr	Thr	Thr
11360						11365					11370			
Ser	Phe	Ile	Thr	Tyr	Ser	Glu	Thr	His	Thr	Ser	Ser	Ala	Ile	Pro
11375						11380					11385			
Thr	Leu	Pro	Val	Ser	Pro	Gly	Ala	Ser	Lys	Met	Leu	Thr	Ser	Leu
11390						11395					11400			
Val	Ile	Ser	Ser	Gly	Thr	Asp	Ser	Thr	Thr	Thr	Phe	Pro	Thr	Leu
11405						11410					11415			
Thr	Glu	Thr	Pro	Tyr	Glu	Pro	Glu	Thr	Thr	Ala	Ile	Gln	Leu	Ile
11420						11425					11430			
His	Pro	Ala	Glu	Thr	Asn	Thr	Met	Val	Pro	Arg	Thr	Thr	Pro	Lys
11435						11440					11445			
Phe	Ser	His	Ser	Lys	Ser	Asp	Thr	Thr	Leu	Pro	Val	Ala	Ile	Thr
11450						11455					11460			
Ser	Pro	Gly	Pro	Glu	Ala	Ser	Ser	Ala	Val	Ser	Thr	Thr	Thr	Ile
11465						11470					11475			
Ser	Pro	Asp	Met	Ser	Asp	Leu	Val	Thr	Ser	Leu	Val	Pro	Ser	Ser
11480						11485					11490			
Gly	Thr	Asp	Thr	Ser	Thr	Thr	Phe	Pro	Thr	Leu	Ser	Glu	Thr	Pro
11495						11500					11505			
Tyr	Glu	Pro	Glu	Thr	Thr	Ala	Thr	Trp	Leu	Thr	His	Pro	Ala	Glu
11510						11515					11520			
Thr	Ser	Thr	Thr	Val	Ser	Gly	Thr	Ile	Pro	Asn	Phe	Ser	His	Arg
11525						11530					11535			
Gly	Ser	Asp	Thr	Ala	Pro	Ser	Met	Val	Thr	Ser	Pro	Gly	Val	Asp
11540						11545					11550			
Thr	Arg	Ser	Gly	Val	Pro	Thr	Thr	Thr	Ile	Pro	Pro	Ser	Ile	Pro
11555						11560					11565			
Gly	Val	Val	Thr	Ser	Gln	Val	Thr	Ser	Ser	Ala	Thr	Asp	Thr	Ser
11570						11575					11580			
Thr	Ala	Ile	Pro	Thr	Leu	Thr	Pro	Ser	Pro	Gly	Glu	Pro	Glu	Thr
11585						11590					11595			
Thr	Ala	Ser	Ser	Ala	Thr	His	Pro	Gly	Thr	Gln	Thr	Gly	Phe	Thr
11600						11605					11610			
Val	Pro	Ile	Arg	Thr	Val	Pro	Ser	Ser	Glu	Pro	Asp	Thr	Met	Ala
11615						11620					11625			
Ser	Trp	Val	Thr	His	Pro	Pro	Gln	Thr	Ser	Thr	Pro	Val	Ser	Arg
11630						11635					11640			
Thr	Thr	Ser	Ser	Phe	Ser	His	Ser	Ser	Pro	Asp	Ala	Thr	Pro	Val
11645						11650					11655			
Met	Ala	Thr	Ser	Pro	Arg	Thr	Glu	Ala	Ser	Ser	Ala	Val	Leu	Thr
11660						11665					11670			
Thr	Ile	Ser	Pro	Gly	Ala	Pro	Glu	Met	Val	Thr	Ser	Gln	Ile	Thr
11675						11680					11685			

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Ser	Ser	Gly	Ala	Ala	Thr	Ser	Thr	Thr	Val	Pro	Thr	Leu	Thr	His
11690						11695					11700			
Ser	Pro	Gly	Met	Pro	Glu	Thr	Thr	Ala	Leu	Leu	Ser	Thr	His	Pro
11705						11710					11715			
Arg	Thr	Glu	Thr	Ser	Lys	Thr	Phe	Pro	Ala	Ser	Thr	Val	Phe	Pro
11720						11725					11730			
Gln	Val	Ser	Glu	Thr	Thr	Ala	Ser	Leu	Thr	Ile	Arg	Pro	Gly	Ala
11735						11740					11745			
Glu	Thr	Ser	Thr	Ala	Leu	Pro	Thr	Gln	Thr	Thr	Ser	Ser	Leu	Phe
11750						11755					11760			
Thr	Leu	Leu	Val	Thr	Gly	Thr	Ser	Arg	Val	Asp	Leu	Ser	Pro	Thr
11765						11770					11775			
Ala	Ser	Pro	Gly	Val	Ser	Ala	Lys	Thr	Ala	Pro	Leu	Ser	Thr	His
11780						11785					11790			
Pro	Gly	Thr	Glu	Thr	Ser	Thr	Met	Ile	Pro	Thr	Ser	Thr	Leu	Ser
11795						11800					11805			
Leu	Gly	Leu	Leu	Glu	Thr	Thr	Gly	Leu	Leu	Ala	Thr	Ser	Ser	Ser
11810						11815					11820			
Ala	Glu	Thr	Ser	Thr	Ser	Thr	Leu	Thr	Leu	Thr	Val	Ser	Pro	Ala
11825						11830					11835			
Val	Ser	Gly	Leu	Ser	Ser	Ala	Ser	Ile	Thr	Thr	Asp	Lys	Pro	Gln
11840						11845					11850			
Thr	Val	Thr	Ser	Trp	Asn	Thr	Glu	Thr	Ser	Pro	Ser	Val	Thr	Ser
11855						11860					11865			
Val	Gly	Pro	Pro	Glu	Phe	Ser	Arg	Thr	Val	Thr	Gly	Thr	Thr	Met
11870						11875					11880			
Thr	Leu	Ile	Pro	Ser	Glu	Met	Pro	Thr	Pro	Pro	Lys	Thr	Ser	His
11885						11890					11895			
Gly	Glu	Gly	Val	Ser	Pro	Thr	Thr	Ile	Leu	Arg	Thr	Thr	Met	Val
11900						11905					11910			
Glu	Ala	Thr	Asn	Leu	Ala	Thr	Thr	Gly	Ser	Ser	Pro	Thr	Val	Ala
11915						11920					11925			
Lys	Thr	Thr	Thr	Thr	Phe	Asn	Thr	Leu	Ala	Gly	Ser	Leu	Phe	Thr
11930						11935					11940			
Pro	Leu	Thr	Thr	Pro	Gly	Met	Ser	Thr	Leu	Ala	Ser	Glu	Ser	Val
11945						11950					11955			
Thr	Ser	Arg	Thr	Ser	Tyr	Asn	His	Arg	Ser	Trp	Ile	Ser	Thr	Thr
11960						11965					11970			
Ser	Ser	Tyr	Asn	Arg	Arg	Tyr	Trp	Thr	Pro	Ala	Thr	Ser	Thr	Pro
11975						11980					11985			
Val	Thr	Ser	Thr	Phe	Ser	Pro	Gly	Ile	Ser	Thr	Ser	Ser	Ile	Pro
11990						11995					12000			
Ser	Ser	Thr	Ala	Ala	Thr	Val	Pro	Phe	Met	Val	Pro	Phe	Thr	Leu
12005						12010					12015			
Asn	Phe	Thr	Ile	Thr	Asn	Leu	Gln	Tyr	Glu	Glu	Asp	Met	Arg	His
12020						12025					12030			
Pro	Gly	Ser	Arg	Lys	Phe	Asn	Ala	Thr	Glu	Arg	Glu	Leu	Gln	Gly
12035						12040					12045			

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Leu	Leu	Lys	Pro	Leu	Phe	Arg	Asn	Ser	Ser	Leu	Glu	Tyr	Leu	Tyr
12050						12055					12060			
Ser	Gly	Cys	Arg	Leu	Ala	Ser	Leu	Arg	Pro	Glu	Lys	Asp	Ser	Ser
12065						12070					12075			
Ala	Thr	Ala	Val	Asp	Ala	Ile	Cys	Thr	His	Arg	Pro	Asp	Pro	Glu
12080						12085					12090			
Asp	Leu	Gly	Leu	Asp	Arg	Glu	Arg	Leu	Tyr	Trp	Glu	Leu	Ser	Asn
12095						12100					12105			
Leu	Thr	Asn	Gly	Ile	Gln	Glu	Leu	Gly	Pro	Tyr	Thr	Leu	Asp	Arg
12110						12115					12120			
Asn	Ser	Leu	Tyr	Val	Asn	Gly	Phe	Thr	His	Arg	Ser	Ser	Met	Pro
12125						12130					12135			
Thr	Thr	Ser	Thr	Pro	Gly	Thr	Ser	Thr	Val	Asp	Val	Gly	Thr	Ser
12140						12145					12150			
Gly	Thr	Pro	Ser	Ser	Ser	Pro	Ser	Pro	Thr	Thr	Ala	Gly	Pro	Leu
12155						12160					12165			
Leu	Met	Pro	Phe	Thr	Leu	Asn	Phe	Thr	Ile	Thr	Asn	Leu	Gln	Tyr
12170						12175					12180			
Glu	Glu	Asp	Met	Arg	Arg	Thr	Gly	Ser	Arg	Lys	Phe	Asn	Thr	Met
12185						12190					12195			
Glu	Ser	Val	Leu	Gln	Gly	Leu	Leu	Lys	Pro	Leu	Phe	Lys	Asn	Thr
12200						12205					12210			
Ser	Val	Gly	Pro	Leu	Tyr	Ser	Gly	Cys	Arg	Leu	Thr	Leu	Leu	Arg
12215						12220					12225			
Pro	Glu	Lys	Asp	Gly	Ala	Ala	Thr	Gly	Val	Asp	Ala	Ile	Cys	Thr
12230						12235					12240			
His	Arg	Leu	Asp	Pro	Lys	Ser	Pro	Gly	Leu	Asn	Arg	Glu	Gln	Leu
12245						12250					12255			
Tyr	Trp	Glu	Leu	Ser	Lys	Leu	Thr	Asn	Asp	Ile	Glu	Glu	Leu	Gly
12260						12265					12270			
Pro	Tyr	Thr	Leu	Asp	Arg	Asn	Ser	Leu	Tyr	Val	Asn	Gly	Phe	Thr
12275						12280					12285			
His	Gln	Ser	Ser	Val	Ser	Thr	Thr	Ser	Thr	Pro	Gly	Thr	Ser	Thr
12290						12295					12300			
Val	Asp	Leu	Arg	Thr	Ser	Gly	Thr	Pro	Ser	Ser	Leu	Ser	Ser	Pro
12305						12310					12315			
Thr	Ile	Met	Ala	Ala	Gly	Pro	Leu	Leu	Val	Pro	Phe	Thr	Leu	Asn
12320						12325					12330			
Phe	Thr	Ile	Thr	Asn	Leu	Gln	Tyr	Gly	Glu	Asp	Met	Gly	His	Pro
12335						12340					12345			
Gly	Ser	Arg	Lys	Phe	Asn	Thr	Thr	Glu	Arg	Val	Leu	Gln	Gly	Leu
12350						12355					12360			
Leu	Gly	Pro	Ile	Phe	Lys	Asn	Thr	Ser	Val	Gly	Pro	Leu	Tyr	Ser
12365						12370					12375			
Gly	Cys	Arg	Leu	Thr	Ser	Leu	Arg	Ser	Glu	Lys	Asp	Gly	Ala	Ala
12380						12385					12390			
Thr	Gly	Val	Asp	Ala	Ile	Cys	Ile	His	His	Leu	Asp	Pro	Lys	Ser
12395						12400					12405			

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Pro Gly	Leu Asn Arg Glu	Arg	Leu Tyr Trp Glu	Leu	Ser Gln Leu
12410		12415		12420	
Thr Asn	Gly Ile Lys Glu	Leu	Gly Pro Tyr Thr	Leu	Asp Arg Asn
12425		12430		12435	
Ser Leu	Tyr Val Asn Gly	Phe	Thr His Arg Thr	Ser	Val Pro Thr
12440		12445		12450	
Ser Ser	Thr Pro Gly Thr	Ser	Thr Val Asp Leu	Gly	Thr Ser Gly
12455		12460		12465	
Thr Pro	Phe Ser Leu Pro	Ser	Pro Ala Thr Ala	Gly	Pro Leu Leu
12470		12475		12480	
Val Leu	Phe Thr Leu Asn	Phe	Thr Ile Thr Asn	Leu	Lys Tyr Glu
12485		12490		12495	
Glu Asp	Met His Arg Pro	Gly	Ser Arg Lys Phe	Asn	Thr Thr Glu
12500		12505		12510	
Arg Val	Leu Gln Thr Leu	Leu	Gly Pro Met Phe	Lys	Asn Thr Ser
12515		12520		12525	
Val Gly	Leu Leu Tyr Ser	Gly	Cys Arg Leu Thr	Leu	Leu Arg Ser
12530		12535		12540	
Glu Lys	Asp Gly Ala Ala	Thr	Gly Val Asp Ala	Ile	Cys Thr His
12545		12550		12555	
Arg Leu	Asp Pro Lys Ser	Pro	Gly Val Asp Arg	Glu	Gln Leu Tyr
12560		12565		12570	
Trp Glu	Leu Ser Gln Leu	Thr	Asn Gly Ile Lys	Glu	Leu Gly Pro
12575		12580		12585	
Tyr Thr	Leu Asp Arg Asn	Ser	Leu Tyr Val Asn	Gly	Phe Thr His
12590		12595		12600	
Trp Ile	Pro Val Pro Thr	Ser	Ser Thr Pro Gly	Thr	Ser Thr Val
12605		12610		12615	
Asp Leu	Gly Ser Gly Thr	Pro	Ser Ser Leu Pro	Ser	Pro Thr Thr
12620		12625		12630	
Ala Gly	Pro Leu Leu Val	Pro	Phe Thr Leu Asn	Phe	Thr Ile Thr
12635		12640		12645	
Asn Leu	Lys Tyr Glu Glu	Asp	Met His Cys Pro	Gly	Ser Arg Lys
12650		12655		12660	
Phe Asn	Thr Thr Glu Arg	Val	Leu Gln Ser Leu	Leu	Gly Pro Met
12665		12670		12675	
Phe Lys	Asn Thr Ser Val	Gly	Pro Leu Tyr Ser	Gly	Cys Arg Leu
12680		12685		12690	
Thr Leu	Leu Arg Ser Glu	Lys	Asp Gly Ala Ala	Thr	Gly Val Asp
12695		12700		12705	
Ala Ile	Cys Thr His Arg	Leu	Asp Pro Lys Ser	Pro	Gly Val Asp
12710		12715		12720	
Arg Glu	Gln Leu Tyr Trp	Glu	Leu Ser Gln Leu	Thr	Asn Gly Ile
12725		12730		12735	
Lys Glu	Leu Gly Pro Tyr	Thr	Leu Asp Arg Asn	Ser	Leu Tyr Val
12740		12745		12750	
Asn Gly	Phe Thr His Gln	Thr	Ser Ala Pro Asn	Thr	Ser Thr Pro
12755		12760		12765	

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Gly Thr	Ser Thr Val Asp	Leu	Gly Thr Ser Gly Thr	Pro Ser Ser
12770		12775		12780
Leu Pro	Ser Pro Thr Ser	Ala	Gly Pro Leu Leu Val	Pro Phe Thr
12785		12790		12795
Leu Asn	Phe Thr Ile Thr	Asn	Leu Gln Tyr Glu Glu	Asp Met His
12800		12805		12810
His Pro	Gly Ser Arg Lys	Phe	Asn Thr Thr Glu Arg	Val Leu Gln
12815		12820		12825
Gly Leu	Leu Gly Pro Met	Phe	Lys Asn Thr Ser Val	Gly Leu Leu
12830		12835		12840
Tyr Ser	Gly Cys Arg Leu Thr	Leu Leu Arg Pro Glu	Lys Asn Gly	
12845		12850		12855
Ala Ala	Thr Gly Met Asp	Ala	Ile Cys Ser His Arg	Leu Asp Pro
12860		12865		12870
Lys Ser	Pro Gly Leu Asn Arg	Glu Gln Leu Tyr Trp	Glu Leu Ser	
12875		12880		12885
Gln Leu	Thr His Gly Ile	Lys	Glu Leu Gly Pro Tyr	Thr Leu Asp
12890		12895		12900
Arg Asn	Ser Leu Tyr Val	Asn	Gly Phe Thr His Arg	Ser Ser Val
12905		12910		12915
Ala Pro	Thr Ser Thr Pro	Gly	Thr Ser Thr Val Asp	Leu Gly Thr
12920		12925		12930
Ser Gly	Thr Pro Ser Ser	Leu	Pro Ser Pro Thr Thr	Ala Val Pro
12935		12940		12945
Leu Leu	Val Pro Phe Thr	Leu	Asn Phe Thr Ile Thr	Asn Leu Gln
12950		12955		12960
Tyr Gly	Glu Asp Met Arg	His	Pro Gly Ser Arg Lys	Phe Asn Thr
12965		12970		12975
Thr Glu	Arg Val Leu Gln	Gly	Leu Leu Gly Pro Leu	Phe Lys Asn
12980		12985		12990
Ser Ser	Val Gly Pro Leu Tyr	Ser Gly Cys Arg	Leu	Ile Ser Leu
12995		13000		13005
Arg Ser	Glu Lys Asp Gly	Ala	Ala Thr Gly Val Asp	Ala Ile Cys
13010		13015		13020
Thr His	His Leu Asn Pro	Gln	Ser Pro Gly Leu Asp	Arg Glu Gln
13025		13030		13035
Leu Tyr	Trp Gln Leu Ser	Gln	Met Thr Asn Gly Ile	Lys Glu Leu
13040		13045		13050
Gly Pro	Tyr Thr Leu Asp	Arg	Asn Ser Leu Tyr Val	Asn Gly Phe
13055		13060		13065
Thr His	Arg Ser Ser Gly	Leu	Thr Thr Ser Thr Pro	Trp Thr Ser
13070		13075		13080
Thr Val	Asp Leu Gly Thr	Ser	Gly Thr Pro Ser Pro	Val Pro Ser
13085		13090		13095
Pro Thr	Thr Thr Gly Pro	Leu	Leu Val Pro Phe Thr	Leu Asn Phe
13100		13105		13110
Thr Ile	Thr Asn Leu Gln	Tyr	Glu Glu Asn Met Gly	His Pro Gly
13115		13120		13125

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Ser	Arg	Lys	Phe	Asn	Ile	Thr	Glu	Ser	Val	Leu	Gln	Gly	Leu	Leu
13130						13135					13140			
Lys	Pro	Leu	Phe	Lys	Ser	Thr	Ser	Val	Gly	Pro	Leu	Tyr	Ser	Gly
13145						13150					13155			
Cys	Arg	Leu	Thr	Leu	Leu	Arg	Pro	Glu	Lys	Asp	Gly	Val	Ala	Thr
13160						13165					13170			
Arg	Val	Asp	Ala	Ile	Cys	Thr	His	Arg	Pro	Asp	Pro	Lys	Ile	Pro
13175						13180					13185			
Gly	Leu	Asp	Arg	Gln	Gln	Leu	Tyr	Trp	Glu	Leu	Ser	Gln	Leu	Thr
13190						13195					13200			
His	Ser	Ile	Thr	Glu	Leu	Gly	Pro	Tyr	Thr	Leu	Asp	Arg	Asp	Ser
13205						13210					13215			
Leu	Tyr	Val	Asn	Gly	Phe	Thr	Gln	Arg	Ser	Ser	Val	Pro	Thr	Thr
13220						13225					13230			
Ser	Thr	Pro	Gly	Thr	Phe	Thr	Val	Gln	Pro	Glu	Thr	Ser	Glu	Thr
13235						13240					13245			
Pro	Ser	Ser	Leu	Pro	Gly	Pro	Thr	Ala	Thr	Gly	Pro	Val	Leu	Leu
13250						13255					13260			
Pro	Phe	Thr	Leu	Asn	Phe	Thr	Ile	Thr	Asn	Leu	Gln	Tyr	Glu	Glu
13265						13270					13275			
Asp	Met	Arg	Arg	Pro	Gly	Ser	Arg	Lys	Phe	Asn	Thr	Thr	Glu	Arg
13280						13285					13290			
Val	Leu	Gln	Gly	Leu	Leu	Met	Pro	Leu	Phe	Lys	Asn	Thr	Ser	Val
13295						13300					13305			
Ser	Ser	Leu	Tyr	Ser	Gly	Cys	Arg	Leu	Thr	Leu	Leu	Arg	Pro	Glu
13310						13315					13320			
Lys	Asp	Gly	Ala	Ala	Thr	Arg	Val	Asp	Ala	Val	Cys	Thr	His	Arg
13325						13330					13335			
Pro	Asp	Pro	Lys	Ser	Pro	Gly	Leu	Asp	Arg	Glu	Arg	Leu	Tyr	Trp
13340						13345					13350			
Lys	Leu	Ser	Gln	Leu	Thr	His	Gly	Ile	Thr	Glu	Leu	Gly	Pro	Tyr
13355						13360					13365			
Thr	Leu	Asp	Arg	His	Ser	Leu	Tyr	Val	Asn	Gly	Phe	Thr	His	Gln
13370						13375					13380			
Ser	Ser	Met	Thr	Thr	Thr	Arg	Thr	Pro	Asp	Thr	Ser	Thr	Met	His
13385						13390					13395			
Leu	Ala	Thr	Ser	Arg	Thr	Pro	Ala	Ser	Leu	Ser	Gly	Pro	Met	Thr
13400						13405					13410			
Ala	Ser	Pro	Leu	Leu	Val	Leu	Phe	Thr	Ile	Asn	Phe	Thr	Ile	Thr
13415						13420					13425			
Asn	Leu	Arg	Tyr	Glu	Glu	Asn	Met	His	His	Pro	Gly	Ser	Arg	Lys
13430						13435					13440			
Phe	Asn	Thr	Thr	Glu	Arg	Val	Leu	Gln	Gly	Leu	Leu	Arg	Pro	Val
13445						13450					13455			
Phe	Lys	Asn	Thr	Ser	Val	Gly	Pro	Leu	Tyr	Ser	Gly	Cys	Arg	Leu
13460						13465					13470			
Thr	Leu	Leu	Arg	Pro	Lys	Lys	Asp	Gly	Ala	Ala	Thr	Lys	Val	Asp
13475						13480					13485			

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Ala Ile	Cys Thr Tyr Arg	Pro Asp Pro Lys Ser Pro	Gly Leu Asp
13490		13495	13500
Arg Glu	Gln Leu Tyr Trp	Glu Leu Ser Gln Leu Thr	His Ser Ile
13505		13510	13515
Thr Glu	Leu Gly Pro Tyr	Thr Leu Asp Arg Asp	Ser Leu Tyr Val
13520		13525	13530
Asn Gly	Phe Thr Gln Arg	Ser Ser Val Pro Thr Thr	Ser Ile Pro
13535		13540	13545
Gly Thr	Pro Thr Val Asp	Leu Gly Thr Ser Gly Thr	Pro Val Ser
13550		13555	13560
Lys Pro	Gly Pro Ser Ala	Ala Ser Pro Leu Leu Val	Leu Phe Thr
13565		13570	13575
Leu Asn	Phe Thr Ile Thr	Asn Leu Arg Tyr Glu Glu	Asn Met Gln
13580		13585	13590
His Pro	Gly Ser Arg Lys	Phe Asn Thr Thr Glu Arg	Val Leu Gln
13595		13600	13605
Gly Leu	Leu Arg Ser Leu	Phe Lys Ser Thr Ser Val	Gly Pro Leu
13610		13615	13620
Tyr Ser	Gly Cys Arg Leu	Thr Leu Leu Arg Pro Glu	Lys Asp Gly
13625		13630	13635
Thr Ala	Thr Gly Val Asp	Ala Ile Cys Thr His His	Pro Asp Pro
13640		13645	13650
Lys Ser	Pro Arg Leu Asp	Arg Glu Gln Leu Tyr Trp	Glu Leu Ser
13655		13660	13665
Gln Leu	Thr His Asn Ile	Thr Glu Leu Gly Pro Tyr	Ala Leu Asp
13670		13675	13680
Asn Asp	Ser Leu Phe Val	Asn Gly Phe Thr His Arg	Ser Ser Val
13685		13690	13695
Ser Thr	Thr Ser Thr Pro	Gly Thr Pro Thr Val Tyr	Leu Gly Ala
13700		13705	13710
Ser Lys	Thr Pro Ala Ser	Ile Phe Gly Pro Ser Ala	Ala Ser His
13715		13720	13725
Leu Leu	Ile Leu Phe Thr	Leu Asn Phe Thr Ile Thr	Asn Leu Arg
13730		13735	13740
Tyr Glu	Glu Asn Met Trp	Pro Gly Ser Arg Lys Phe	Asn Thr Thr
13745		13750	13755
Glu Arg	Val Leu Gln Gly	Leu Leu Arg Pro Leu Phe	Lys Asn Thr
13760		13765	13770
Ser Val	Gly Pro Leu Tyr	Ser Gly Cys Arg Leu Thr	Leu Leu Arg
13775		13780	13785
Pro Glu	Lys Asp Gly Glu	Ala Thr Gly Val Asp Ala	Ile Cys Thr
13790		13795	13800
His Arg	Pro Asp Pro Thr	Gly Pro Gly Leu Asp Arg	Glu Gln Leu
13805		13810	13815
Tyr Leu	Glu Leu Ser Gln	Leu Thr His Ser Ile Thr	Glu Leu Gly
13820		13825	13830
Pro Tyr	Thr Leu Asp Arg	Asp Ser Leu Tyr Val Asn	Gly Phe Thr
13835		13840	13845

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His	Arg	Ser	Ser	Val	Pro	Thr	Thr	Ser	Thr	Gly	Val	Val	Ser	Glu
13850						13855					13860			
Glu	Pro	Phe	Thr	Leu	Asn	Phe	Thr	Ile	Asn	Asn	Leu	Arg	Tyr	Met
13865						13870					13875			
Ala	Asp	Met	Gly	Gln	Pro	Gly	Ser	Leu	Lys	Phe	Asn	Ile	Thr	Asp
13880						13885					13890			
Asn	Val	Met	Gln	His	Leu	Leu	Ser	Pro	Leu	Phe	Gln	Arg	Ser	Ser
13895						13900					13905			
Leu	Gly	Ala	Arg	Tyr	Thr	Gly	Cys	Arg	Val	Ile	Ala	Leu	Arg	Ser
13910						13915					13920			
Val	Lys	Asn	Gly	Ala	Glu	Thr	Arg	Val	Asp	Leu	Leu	Cys	Thr	Tyr
13925						13930					13935			
Leu	Gln	Pro	Leu	Ser	Gly	Pro	Gly	Leu	Pro	Ile	Lys	Gln	Val	Phe
13940						13945					13950			
His	Glu	Leu	Ser	Gln	Gln	Thr	His	Gly	Ile	Thr	Arg	Leu	Gly	Pro
13955						13960					13965			
Tyr	Ser	Leu	Asp	Lys	Asp	Ser	Leu	Tyr	Leu	Asn	Gly	Tyr	Asn	Glu
13970						13975					13980			
Pro	Gly	Pro	Asp	Glu	Pro	Pro	Thr	Thr	Pro	Lys	Pro	Ala	Thr	Thr
13985						13990					13995			
Phe	Leu	Pro	Pro	Leu	Ser	Glu	Ala	Thr	Thr	Ala	Met	Gly	Tyr	His
14000						14005					14010			
Leu	Lys	Thr	Leu	Thr	Leu	Asn	Phe	Thr	Ile	Ser	Asn	Leu	Gln	Tyr
14015						14020					14025			
Ser	Pro	Asp	Met	Gly	Lys	Gly	Ser	Ala	Thr	Phe	Asn	Ser	Thr	Glu
14030						14035					14040			
Gly	Val	Leu	Gln	His	Leu	Leu	Arg	Pro	Leu	Phe	Gln	Lys	Ser	Ser
14045						14050					14055			
Met	Gly	Pro	Phe	Tyr	Leu	Gly	Cys	Gln	Leu	Ile	Ser	Leu	Arg	Pro
14060						14065					14070			
Glu	Lys	Asp	Gly	Ala	Ala	Thr	Gly	Val	Asp	Thr	Thr	Cys	Thr	Tyr
14075						14080					14085			
His	Pro	Asp	Pro	Val	Gly	Pro	Gly	Leu	Asp	Ile	Gln	Gln	Leu	Tyr
14090						14095					14100			
Trp	Glu	Leu	Ser	Gln	Leu	Thr	His	Gly	Val	Thr	Gln	Leu	Gly	Phe
14105						14110					14115			
Tyr	Val	Leu	Asp	Arg	Asp	Ser	Leu	Phe	Ile	Asn	Gly	Tyr	Ala	Pro
14120						14125					14130			
Gln	Asn	Leu	Ser	Ile	Arg	Gly	Glu	Tyr	Gln	Ile	Asn	Phe	His	Ile
14135						14140					14145			
Val	Asn	Trp	Asn	Leu	Ser	Asn	Pro	Asp	Pro	Thr	Ser	Ser	Glu	Tyr
14150						14155					14160			
Ile	Thr	Leu	Leu	Arg	Asp	Ile	Gln	Asp	Lys	Val	Thr	Thr	Leu	Tyr
14165						14170					14175			
Lys	Gly	Ser	Gln	Leu	His	Asp	Thr	Phe	Arg	Phe	Cys	Leu	Val	Thr
14180						14185					14190			
Asn	Leu	Thr	Met	Asp	Ser	Val	Leu	Val	Thr	Val	Lys	Ala	Leu	Phe
14195						14200					14205			

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Ser	Ser	Asn	Leu	Asp	Pro	Ser	Leu	Val	Glu	Gln	Val	Phe	Leu	Asp
14210						14215					14220			
Lys	Thr	Leu	Asn	Ala	Ser	Phe	His	Trp	Leu	Gly	Ser	Thr	Tyr	Gln
14225						14230					14235			
Leu	Val	Asp	Ile	His	Val	Thr	Glu	Met	Glu	Ser	Ser	Val	Tyr	Gln
14240						14245					14250			
Pro	Thr	Ser	Ser	Ser	Ser	Thr	Gln	His	Phe	Tyr	Leu	Asn	Phe	Thr
14255						14260					14265			
Ile	Thr	Asn	Leu	Pro	Tyr	Ser	Gln	Asp	Lys	Ala	Gln	Pro	Gly	Thr
14270						14275					14280			
Thr	Asn	Tyr	Gln	Arg	Asn	Lys	Arg	Asn	Ile	Glu	Asp	Ala	Leu	Asn
14285						14290					14295			
Gln	Leu	Phe	Arg	Asn	Ser	Ser	Ile	Lys	Ser	Tyr	Phe	Ser	Asp	Cys
14300						14305					14310			
Gln	Val	Ser	Thr	Phe	Arg	Ser	Val	Pro	Asn	Arg	His	His	Thr	Gly
14315						14320					14325			
Val	Asp	Ser	Leu	Cys	Asn	Phe	Ser	Pro	Leu	Ala	Arg	Arg	Val	Asp
14330						14335					14340			
Arg	Val	Ala	Ile	Tyr	Glu	Glu	Phe	Leu	Arg	Met	Thr	Arg	Asn	Gly
14345						14350					14355			
Thr	Gln	Leu	Gln	Asn	Phe	Thr	Leu	Asp	Arg	Ser	Ser	Val	Leu	Val
14360						14365					14370			
Asp	Gly	Tyr	Ser	Pro	Asn	Arg	Asn	Glu	Pro	Leu	Thr	Gly	Asn	Ser
14375						14380					14385			
Asp	Leu	Pro	Phe	Trp	Ala	Val	Ile	Leu	Ile	Gly	Leu	Ala	Gly	Leu
14390						14395					14400			
Leu	Gly	Val	Ile	Thr	Cys	Leu	Ile	Cys	Gly	Val	Leu	Val	Thr	Thr
14405						14410					14415			
Arg	Arg	Arg	Lys	Lys	Glu	Gly	Glu	Tyr	Asn	Val	Gln	Gln	Gln	Cys
14420						14425					14430			
Pro	Gly	Tyr	Tyr	Gln	Ser	His	Leu	Asp	Leu	Glu	Asp	Leu	Gln	
14435						14440					14445			

<210> 151

<211> 114

<212> PRT

<213> Artificial Sequence

<220>

<223> MUC16c114-N1

<400> 151

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

Sequence_Listing_13542-016-228

```

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

```

<210> 152

<211> 114

<212> PRT

<213> Artificial Sequence

<220>

<223> MUC16c114-N2

<400> 152

```

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

```

<210> 153

<211> 114

<212> PRT

<213> Artificial Sequence

<220>

<223> MUC16c114-N12

Sequence_Listing_13542-016-228

<400> 153

```

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

```

<210> 154

<211> 114

<212> PRT

<213> Artificial Sequence

<220>

<223> MUC16c114-N123

<400> 154

```

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

```

<210> 155

<211> 6

Sequence_Listing_13542-016-228

<212> PRT

<213> Artificial Sequence

<220>

<223> MUC16c344 N-term of first tandem repeat

<400> 155

Trp Glu Leu Ser Gln Leu

1 5

<210> 156

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> MUC16c344 C-term of first tandem repeat

<400> 156

Thr Gly Val Asp Ser Leu Cys

1 5

<210> 157

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> MUC16c344 N-term of ectodomain

<400> 157

Asn Phe Ser Pro Leu Ala Arg

1 5

<210> 158

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> MUC16c344 C-term of ectodomain

<400> 158

Thr Gly Asn Ser Asp Leu Pro

1 5

Sequence_Listing_13542-016-228

<210> 159
 <211> 25
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Transmembrane

<400> 159
 Phe Trp Ala Val Ile Leu Ile Gly Leu Ala Gly Leu Leu Gly Leu Ile
 1 5 10 15
 Thr Cys Leu Ile Cys Gly Val Leu Val
 20 25

<210> 160
 <211> 31
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Cytoplasmic tail

<400> 160
 Thr Thr Arg Arg Arg Lys Lys Glu Gly Glu Tyr Asn Val Gln Gln Gln
 1 5 10 15
 Cys Pro Gly Tyr Tyr Gln Ser His Leu Asp Leu Glu Asp Leu Gln
 20 25 30

<210> 161
 <211> 58
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> MUC16c114 ectodomain

<400> 161
 Asn Phe Ser Pro Leu Ala Arg Arg Val Asp Arg Val Ala Ile Tyr Glu
 1 5 10 15
 Glu Phe Leu Arg Met Thr Arg Asn Gly Thr Gln Leu Gln Asn Phe Thr
 20 25 30
 Leu Asp Arg Ser Ser Val Leu Val Asp Gly Tyr Ser Pro Asn Arg Asn
 35 40 45
 Glu Pro Leu Thr Gly Asn Ser Asp Leu Pro

50

55

<210> 162

<211> 24

<212> PRT

<213> Artificial Sequence

<220>

<223> MUC16c80 ectodomain

<400> 162

Asn	Phe	Ser	Pro	Leu	Ala	Arg	Arg	Val	Asp	Arg	Val	Ala	Ile	Tyr	Glu
1				5				10						15	
Glu	Phe	Leu	Arg	Met	Asp	Leu	Pro								
				20											

<210> 163

<211> 58

<212> PRT

<213> Artificial Sequence

<220>

<223> MUC16c86 ectodomain

<400> 163

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

<210> 164

<211> 22

<212> PRT

<213> Artificial Sequence

<220>

<223> MUC16c86 transmembrane

<400> 164

Phe	Trp	Ala	Val	Ile	Leu	Ile	Gly	Leu	Ala	Gly	Leu	Leu	Gly	Leu	Ile
1				5				10						15	

Sequence_Listing_13542-016-228

Thr Cys Leu Ile Cys Gly
20

<210> 165
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> MUC16c86 cytoplasmic

<400> 165
Asp Leu Glu Asp Leu Gln
1 5

<210> 166
<211> 58
<212> PRT
<213> Artificial Sequence

<220>
<223> MUC16 3(N to A)c114 ectodomain

<400> 166
Ala Phe Ser Pro Leu Ala Arg Arg Val Asp Arg Val Ala Ile Tyr Glu
1 5 10 15
Glu Phe Leu Arg Met Thr Arg Ala Gly Thr Gln Leu Gln Ala Phe Thr
20 25 30
Leu Asp Arg Ser Ser Val Leu Val Asp Gly Tyr Ser Pro Asn Arg Asn
35 40 45
Glu Pro Leu Thr Gly Asn Ser Asp Leu Pro
50 55

<210> 167
<211> 128
<212> PRT
<213> Artificial Sequence

<220>
<223> LGALS3 sugar binding domain

<400> 167
Pro Tyr Asn Leu Pro Leu Pro Gly Gly Val Val Pro Arg Met Leu Ile
1 5 10 15
Thr Ile Leu Gly Thr Val Lys Pro Asn Ala Asn Arg Ile Ala Leu Asp

Sequence_Listing_13542-016-228

20							25					30			
Phe	Gln	Arg	Gly	Asn	Asp	Val	Ala	Phe	His	Phe	Asn	Pro	Arg	Phe	Asn
35							40					45			
Glu	Asn	Asn	Arg	Arg	Val	Ile	Val	Cys	Asn	Thr	Lys	Leu	Asp	Asn	Asn
50							55					60			
Trp	Gly	Arg	Glu	Glu	Arg	Gln	Ser	Val	Phe	Pro	Phe	Glu	Ser	Gly	Lys
65							70					75			
Pro	Phe	Lys	Ile	Gln	Val	Leu	Val	Glu	Pro	Asp	His	Phe	Lys	Val	Ala
85							90					95			
Val	Asn	Asp	Ala	His	Leu	Leu	Gln	Tyr	Asn	His	Arg	Val	Lys	Lys	Leu
100							105					110			
Asn	Glu	Ile	Ser	Lys	Leu	Gly	Ile	Ser	Gly	Asp	Ile	Asp	Leu	Thr	Ser
115							120					125			

<210> 168

<211> 19

<212> PRT

<213> Artificial Sequence

$\langle 220 \rangle$

<223> MUC16 nonglycosylated peptide 2

$\langle 400 \rangle$ 168

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

<210> 169

<211> 18

<212> PRT

<213> Artificial Sequence

 $\langle 220 \rangle$

<223> MUC16 unrelated peptide 18mer

<400> 169

Gly Ala Val Pro Arg Ser Ala Thr Ile Asn Val Ser Arg Ile Ala Thr
1 5 10 15
Gly Pro

$\langle 210 \rangle$ 170

<211> 17

<212> PRT

Sequence_Listing_13542-016-228

<213> Artificial Sequence

<220>

<223> 18mer (no C)

<400> 170

Thr	Arg	Asn	Gly	Thr	Gln	Leu	Gln	Asn	Phe	Thr	Leu	Asp	Arg	Ser	Ser
1				5					10					15	
Val															

<210> 171

<211> 14

<212> PRT

<213> Artificial Sequence

<220>

<223> 15mer (no C)

<400> 171

Gly	Thr	Gln	Leu	Gln	Asn	Phe	Thr	Leu	Asp	Arg	Ser	Ser	Val
1				5					10				

<210> 172

<211> 114

<212> PRT

<213> Artificial Sequence

<220>

<223> MUC16c114-N23

<400> 172

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

Sequence_Listing_13542-016-228

<210> 173
 <211> 344
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> N24 mut c344

<400> 173
 Trp Glu Leu Ser Gln Leu Thr His Gly Val Thr Gln Leu Gly Phe Tyr
 1 5 10 15
 Val Leu Asp Arg Asp Ser Leu Phe Ile Asn Gly Tyr Ala Pro Gln Asn
 20 25 30
 Leu Ser Ile Arg Gly Glu Tyr Gln Ile Asn Phe His Ile Val Asn Gln
 35 40 45
 Asn Leu Ser Asn Pro Asp Pro Thr Ser Ser Glu Tyr Ile Thr Leu Leu
 50 55 60
 Arg Asp Ile Gln Asp Lys Val Thr Thr Leu Tyr Lys Gly Ser Gln Leu
 65 70 75 80
 His Asp Thr Phe Arg Phe Cys Leu Val Thr Asn Leu Thr Met Asp Ser
 85 90 95
 Val Leu Val Thr Val Lys Ala Leu Phe Ser Ser Asn Leu Asp Pro Ser
 100 105 110
 Leu Val Glu Gln Val Phe Leu Asp Lys Thr Leu Asn Ala Ser Phe His
 115 120 125
 Gln Leu Gly Ser Thr Tyr Gln Leu Val Asp Ile His Val Thr Glu Met
 130 135 140
 Glu Ser Ser Val Tyr Gln Pro Thr Ser Ser Ser Ser Thr Gln His Phe
 145 150 155 160
 Tyr Leu Asn Phe Thr Ile Thr Asn Leu Pro Tyr Ser Gln Asp Lys Ala
 165 170 175
 Gln Pro Gly Thr Thr Asn Tyr Gln Arg Asn Lys Arg Asn Ile Glu Asp
 180 185 190
 Ala Leu Asn Gln Leu Phe Arg Asn Ser Ser Ile Lys Ser Tyr Phe Ser
 195 200 205
 Asp Cys Gln Val Ser Thr Phe Arg Ser Val Pro Asn Arg His His Thr
 210 215 220
 Gly Val Asp Ser Leu Cys Asn Phe Ser Pro Leu Ala Arg Arg Val Asp
 225 230 235 240
 Arg Val Ala Ile Tyr Glu Glu Phe Leu Arg Met Thr Arg Ala Gly Thr
 245 250 255
 Gln Leu Gln Asn Phe Thr Leu Asp Arg Ser Ser Val Leu Val Asp Gly
 260 265 270
 Tyr Ser Pro Asn Arg Asn Glu Pro Leu Thr Gly Asn Ser Asp Leu Pro
 275 280 285

Sequence_Listing_13542-016-228

Phe Trp Ala Val Ile Leu Ile Gly Leu Ala Gly Leu Leu Gly Leu Ile
 290 295 300
 Thr Cys Leu Ile Cys Gly Val Leu Val Thr Thr Arg Arg Arg Lys Lys
 305 310 315 320
 Glu Gly Glu Tyr Asn Val Gln Gln Gln Cys Pro Gly Tyr Tyr Gln Ser
 325 330 335
 His Leu Asp Leu Glu Asp Leu Gln
 340

<210> 174

<211> 344

<212> PRT

<213> Artificial Sequence

<220>

<223> N30 mut c344

<400> 174

Trp Glu Leu Ser Gln Leu Thr His Gly Val Thr Gln Leu Gly Phe Tyr
 1 5 10 15
 Val Leu Asp Arg Asp Ser Leu Phe Ile Asn Gly Tyr Ala Pro Gln Asn
 20 25 30
 Leu Ser Ile Arg Gly Glu Tyr Gln Ile Asn Phe His Ile Val Asn Gln
 35 40 45
 Asn Leu Ser Asn Pro Asp Pro Thr Ser Ser Glu Tyr Ile Thr Leu Leu
 50 55 60
 Arg Asp Ile Gln Asp Lys Val Thr Thr Leu Tyr Lys Gly Ser Gln Leu
 65 70 75 80
 His Asp Thr Phe Arg Phe Cys Leu Val Thr Asn Leu Thr Met Asp Ser
 85 90 95
 Val Leu Val Thr Val Lys Ala Leu Phe Ser Ser Asn Leu Asp Pro Ser
 100 105 110
 Leu Val Glu Gln Val Phe Leu Asp Lys Thr Leu Asn Ala Ser Phe His
 115 120 125
 Gln Leu Gly Ser Thr Tyr Gln Leu Val Asp Ile His Val Thr Glu Met
 130 135 140
 Glu Ser Ser Val Tyr Gln Pro Thr Ser Ser Ser Ser Thr Gln His Phe
 145 150 155 160
 Tyr Leu Asn Phe Thr Ile Thr Asn Leu Pro Tyr Ser Gln Asp Lys Ala
 165 170 175
 Gln Pro Gly Thr Thr Asn Tyr Gln Arg Asn Lys Arg Asn Ile Glu Asp
 180 185 190
 Ala Leu Asn Gln Leu Phe Arg Asn Ser Ser Ile Lys Ser Tyr Phe Ser
 195 200 205
 Asp Cys Gln Val Ser Thr Phe Arg Ser Val Pro Asn Arg His His Thr
 210 215 220
 Gly Val Asp Ser Leu Cys Asn Phe Ser Pro Leu Ala Arg Arg Val Asp

Sequence_Listing_13542-016-228

```

225          230          235          240
Arg Val Ala Ile Tyr Glu Glu Phe Leu Arg Met Thr Arg Asn Gly Thr
          245          250          255
Gln Leu Gln Ala Phe Thr Leu Asp Arg Ser Ser Val Leu Val Asp Gly
          260          265          270
Tyr Ser Pro Asn Arg Asn Glu Pro Leu Thr Gly Asn Ser Asp Leu Pro
          275          280          285
Phe Trp Ala Val Ile Leu Ile Gly Leu Ala Gly Leu Leu Gly Leu Ile
          290          295          300
Thr Cys Leu Ile Cys Gly Val Leu Val Thr Thr Arg Arg Arg Lys Lys
305          310          315          320
Glu Gly Glu Tyr Asn Val Gln Gln Gln Cys Pro Gly Tyr Tyr Gln Ser
          325          330          335
His Leu Asp Leu Glu Asp Leu Gln
          340

```

<210> 175

<211> 344

<212> PRT

<213> Artificial Sequence

<220>

<223> N24-N30 mut c344

<400> 175

```

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

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Sequence_Listing_13542-016-228

Gln	Pro	Gly	Thr	Thr	Asn	Tyr	Gln	Arg	Asn	Lys	Arg	Asn	Ile	Glu	Asp
			180					185					190		
Ala	Leu	Asn	Gln	Leu	Phe	Arg	Asn	Ser	Ser	Ile	Lys	Ser	Tyr	Phe	Ser
		195					200					205			
Asp	Cys	Gln	Val	Ser	Thr	Phe	Arg	Ser	Val	Pro	Asn	Arg	His	His	Thr
	210					215					220				
Gly	Val	Asp	Ser	Leu	Cys	Asn	Phe	Ser	Pro	Leu	Ala	Arg	Arg	Val	Asp
225					230					235					240
Arg	Val	Ala	Ile	Tyr	Glu	Glu	Phe	Leu	Arg	Met	Thr	Arg	Ala	Gly	Thr
			245						250					255	
Gln	Leu	Gln	Ala	Phe	Thr	Leu	Asp	Arg	Ser	Ser	Val	Leu	Val	Asp	Gly
			260					265					270		
Tyr	Ser	Pro	Asn	Arg	Asn	Glu	Pro	Leu	Thr	Gly	Asn	Ser	Asp	Leu	Pro
		275					280					285			
Phe	Trp	Ala	Val	Ile	Leu	Ile	Gly	Leu	Ala	Gly	Leu	Leu	Gly	Leu	Ile
	290					295					300				
Thr	Cys	Leu	Ile	Cys	Gly	Val	Leu	Val	Thr	Thr	Arg	Arg	Arg	Lys	Lys
305					310					315					320
Glu	Gly	Glu	Tyr	Asn	Val	Gln	Gln	Gln	Cys	Pro	Gly	Tyr	Tyr	Gln	Ser
				325					330					335	
His	Leu	Asp	Leu	Glu	Asp	Leu	Gln								
			340												