

1  
SEQUENCE LISTING

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 <213> Saccharomyces cerevisiae

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 35 40 45

Gln Met His Leu Asn Ser Val Asp Glu Glu Met Ser Met Gly Phe Gln  
 50 55 60

Asn Gly Val Pro Ser Asn Glu Asp Ile Asn Ile Asp Glu Phe Thr Ser  
 65 70 75 80

Thr Glu Ser Asn Asp Gly Val Ser Glu Thr Leu Leu Ala Trp Arg His  
 85 90 95

Ile Asp Phe Trp Thr Ser Glu His Asn Pro Asp Leu Asn Ala Thr Leu  
 100 105 110

Ser Asp Pro Cys Thr Gln Asn Asp Ile Thr His Ala Glu Glu Asp Leu  
 115 120 125

Glu Val Ser Phe Pro Asn Pro Val Lys Ala Ser Phe Lys Ile His Asp  
 130 135 140

Gly 145 Gln Glu Asp Leu Glu 150 Ser Met Thr Gly Thr 155 Ser Gly Leu Phe Tyr 160  
 Gly Phe Gln Leu Met 165 Thr Leu Asp Gln Val 170 Val Ala Met Thr Gln Ala 175  
 Trp Arg Asn Val 180 Ala Lys Asn Leu Asn 185 Lys Arg Ser Gln Gln 190 Gly Leu  
 Ser His Val 195 Thr Ser Thr Gly Ser 200 Ser Ser Ser Met Glu 205 Arg Leu Asn  
 Gly Asn 210 Lys Phe Lys Leu Pro 215 Asn Ile Pro Asp Gln 220 Lys Ser Ile Pro  
 Pro Asn Ala Val Gln Pro 230 Val Tyr Ala His Pro 235 Ala Trp Ile Pro Leu 240  
 Ile Thr Asp Asn Ala 245 Gly Asn His Ile Gly 250 Val Asp Leu Ala Pro Gly 255  
 Pro Asn Gly Lys 260 Tyr Ala Gln Ile Ile 265 Thr Phe Gly Arg Asp 270 Phe Asp  
 Thr Lys Phe Val 275 Ile Ala Glu Asn 280 Trp Gly Glu Phe Leu 285 Leu Ser Phe  
 Ala Asn Asp Leu Glu Ala Gly 295 Asn Trp Tyr Leu Val 300 Asp Asp Asn Asp  
 Asp 305 Tyr Phe Ser Gly Asp 310 Gly Glu Leu Val Phe 315 Arg Asp Lys Lys Ser 320  
 Asn Gly Pro Ile Gln 325 Asp Tyr Phe Glu Val 330 Leu Lys Arg Arg Thr Trp 335  
 Ile Lys Tyr Gln 340 Glu Asn Leu Arg Ser 345 Gln Gln Gln Lys Ser 350 Gln Pro  
 Asp Thr Ser 355 Leu Gln Glu Gln Lys 360 Tyr Val Pro Ala Ser 365 Gln Lys Lys  
 Val Ala Ala Glu Gln Pro Ser 375 Thr Leu Asn Ala Glu 380 Ser Ile Lys Gly  
 Glu 385 Asp Ser Gly Ser Ala 390 Asp Val Gln Ser Val 395 Gln Asp His Glu Ser 400  
 Val Lys Ile Val Lys 405 Thr Glu Pro Ser Glu 410 Ala Glu Thr Thr Thr Val 415

Asn Thr Glu Ser<sub>420</sub> Leu Gly Gln Ala Glu<sub>425</sub> His<sup>8</sup> Glu Ile Lys Ala<sub>430</sub> Asp Asn  
 Val Asp Ile<sub>435</sub> Lys Gln Glu Ser Glu<sub>440</sub> Arg Lys Glu Asp Glu<sub>445</sub> Lys Gln Pro  
 Lys Val<sub>450</sub> Glu Glu Lys Glu His<sub>455</sub> Val Glu Asn Glu His<sub>460</sub> Val Thr Glu Ser  
 Ala Lys Lys Asp Asp Asp<sub>470</sub> Val Asn Lys Gln Thr<sub>475</sub> Glu Glu Met Asn Lys<sub>480</sub>  
 Lys Glu Glu Asn Glu<sub>485</sub> Ile Arg Ser Asp Asp<sub>490</sub> Ala Lys Val Glu Glu<sub>495</sub> Ala  
 Arg Glu Glu Phe<sub>500</sub> Glu Asn Ile Ala Leu<sub>505</sub>

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 <213> *Saccharomyces cerevisiae*

<400> 32

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 Gly Ile Ser<sub>35</sub> Lys Gln Asp Pro Asp<sub>40</sub> Gln Asp Arg Asp<sub>45</sub> Leu Gln Arg Asp  
 Arg Pro Phe Gln Lys Leu<sub>55</sub> Phe Val Ile Ile<sub>60</sub> Asp Ala Leu Arg Ser  
 Asp Phe Leu Phe Asp<sub>70</sub> Ser Gln Ile Ser His<sub>75</sub> Phe Asn Asn Val His<sub>80</sub> Gln  
 Trp Leu Asn Thr<sub>85</sub> Gly Glu Ala Trp Gly<sub>90</sub> Tyr Thr Ser Phe Ala Asn Pro  
 Pro Thr Val<sub>100</sub> Thr Leu Pro Arg Leu<sub>105</sub> Lys Ser Ile Thr Thr<sub>110</sub> Gly Ser Thr  
 Pro Ser Phe<sub>115</sub> Ile Asp Leu Leu<sub>120</sub> Asn Val Ala Gln Asp<sub>125</sub> Ile Asp Ser  
 Asn Asp<sub>130</sub> Leu Ser Glu His<sub>135</sub> Asp Ser Trp Leu Gln Gln<sub>140</sub> Phe Ile Gln His  
 Asn Asn Thr Ile Arg Phe<sub>150</sub> Met Gly Asp Asp<sub>155</sub> Thr Trp Leu Lys Leu<sub>160</sub> Phe



Pro Gln Gln Trp Phe<sub>165</sub> Asp Phe Ala Asp Pro<sub>170</sub> Thr His Ser Phe Phe<sub>175</sub> Val  
 Ser Asp Phe Thr<sub>180</sub> Gln Val Asp Asn Asn<sub>185</sub> Val Thr Arg Asn Leu<sub>190</sub> Pro Gly  
 Lys Leu Phe<sub>195</sub> Gln Glu Trp Ala Gln<sub>200</sub> Trp Asp Val Ala Ile<sub>205</sub> Leu His Tyr  
 Leu Gly<sub>210</sub> Leu Asp His Ile Gly<sub>215</sub> His Lys Asp Gly Pro<sub>220</sub> His Ser Lys Phe  
 Met<sub>225</sub> Ala Ala Lys His Gln<sub>230</sub> Glu Met Asp Ser Ile<sub>235</sub> Leu Lys Ser Ile Tyr<sub>240</sub>  
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 Ala Gly Glu<sub>275</sub> Thr Ser Ala Gly Leu<sub>280</sub> Leu Phe Leu Ser Pro<sub>285</sub> Lys Leu Ala  
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 Tyr Thr Lys Met Tyr Thr<sub>390</sub> Ile Gln Glu Thr Leu<sub>395</sub> Thr Lys Ser Ala Thr<sub>400</sub>  
 Asn Tyr Asn Tyr Pro<sub>405</sub> Leu Leu Thr Leu Ala<sub>410</sub> Phe Val Gly Phe Leu<sub>415</sub> Ile  
 Ile Thr Ile Ile<sub>420</sub> Ala Ile Tyr Val Leu<sub>425</sub> Leu Arg Tyr Ser Gly<sub>430</sub> Pro Asp

Phe Trp Gln Leu Arg Val Ser Ser Leu Ser Val Leu Leu Val Ser Ile  
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 Ile Leu Gly Val Ser Thr Phe Ala Ser Ser Phe Ile Glu Glu Glu His  
 450 455 460  
 Gln Leu Trp Trp Trp Ile Val Thr Ala Phe Ser Ala Val Pro Leu Phe  
 465 470 475 480  
 Val Tyr Arg Leu Asn Val Leu Ile Ile Val Arg Trp Phe Ile Met Met  
 485 490 495  
 Ala Cys Val Arg Ser Ile Lys Phe Trp Asn Asn Ser Gly Gln Lys Phe  
 500 505 510  
 Ile Tyr Ser Asn Val Met Ser Asn Leu Leu Asn Gln Asn Pro Ser Trp  
 515 520 525  
 Lys Trp Cys Leu Asn Met Leu Thr Phe Leu Val Leu Ile Met Ala Ser  
 530 535 540  
 Ala Gly Phe Gln Val Leu His Phe Ile Val Thr Thr Ile Leu Val Gly  
 545 550 555 560  
 Leu Cys Phe Thr Tyr Lys Ile Ser Trp Glu Ile Val Asn Gly Asn Gln  
 565 570 575  
 Ala Glu Ile Pro Leu Phe Met His Asp Leu Leu Ala Lys Ile Asp Phe  
 580 585 590  
 Ala Pro Thr Glu Ser Asn Leu Ile Val Leu Ala Arg Val Phe Phe Gln  
 595 600 605  
 Ala Trp Ala Ile Val Val Ile Ser Arg Leu Val Leu Thr Lys Leu Lys  
 610 615 620  
 Val Leu Asn Lys Asn Tyr Leu Ile Lys Asp Met Lys Val Tyr Ile Thr  
 625 630 635 640  
 Ile Leu Leu Met Phe Gln Thr Ser Ser Gln Asn Ile Gly Gln Phe Leu  
 645 650 655  
 Val Phe Gln Ile Leu Glu Ser Gln Ile Phe Tyr Phe Phe Gln Asn Ile  
 660 665 670  
 Pro Thr Ala Ser Leu Thr Ser Thr Ser Lys Ile Tyr Phe Ser Asn Leu  
 675 680 685  
 Val Ser Leu Ile Leu Gln Asn Phe Thr Phe Phe Gln Phe Gly Gly Thr  
 690 695 700

Asn Ser Ile Ser Thr Ile Asp Leu Gly Asn<sup>11</sup> Ala Tyr His Gly Val Ser  
705 710 715 720

Ser Asp Tyr Asn Ile Tyr Val Val Gly Ile Leu Met Ser Val Ala Asn  
725 730 735

Phe Ala Pro Ala Ile Tyr Trp Ser Met Leu Pro Trp Ser Ile Asn Tyr  
740 745 750

Ala Ser Ile Pro Ala Gln Val Lys Leu Gln Thr Phe Ile Arg Ser Lys  
755 760 765

Leu Pro Ala Phe Thr Tyr His Cys Ile Phe Gly Thr Cys Leu Met Thr  
770 775 780

Ala Cys Val Val Leu Arg Phe His Leu Phe Ile Trp Ser Val Phe Ser  
785 790 795 800

Pro Lys Leu Cys Tyr Phe Leu Gly Trp Asn Phe Val Met Gly Leu Leu  
805 810 815

Asn Gly Trp Leu Pro Glu Leu Ala Leu Leu Cys Ala Leu Asp  
820 825 830

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<212> PRT  
<213> *Saccharomyces cerevisiae*  
<400> 33

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35 40 45

Val Ala Tyr Gln Ala Asp Thr Ala Asn Glu Thr Ser Gly Ser Thr Val  
50 55 60

Asn Asp Pro Leu Ala Asn Tyr Glu Ser Cys Ser Arg Asp Ile Pro Tyr  
65 70 75 80

Leu Lys Lys Leu Asn Thr Asn Val Ile Arg Val Tyr Ala Ile Asn Thr  
85 90 95

Thr Leu Asp His Ser Glu Cys Met Lys Ala Leu Asn Asp Ala Asp Ile  
100 105 110

Tyr Val Ile Ala Asp Leu Ala Ala Pro Ala Thr Ser Ile Asn Arg Asp  
115 120 125

Asp Pro Thr Trp Thr Val Asp Leu Phe Asn Ser Tyr Lys Thr Val Val  
 130 135 140  
 Asp Thr Phe Ala Asn Tyr Thr Asn Val Leu Gly Phe Phe Ala Gly Asn  
 145 150 155 160  
 Glu Val Thr Asn Asn Tyr Thr Asn Thr Asp Ala Ser Ala Phe Val Lys  
 165 170 175  
 Ala Ala Ile Arg Asp Val Arg Gln Tyr Ile Ser Asp Lys Asn Tyr Arg  
 180 185 190  
 Lys Ile Pro Val Gly Tyr Ser Ser Asn Asp Asp Glu Asp Thr Arg Val  
 195 200 205  
 Lys Met Thr Asp Tyr Phe Ala Cys Gly Asp Asp Asp Val Lys Ala Asp  
 210 215 220  
 Phe Tyr Gly Ile Asn Met Tyr Glu Trp Cys Gly Lys Ser Asp Phe Lys  
 225 230 235 240  
 Thr Ser Gly Tyr Ala Asp Arg Thr Ala Glu Phe Lys Asn Leu Ser Ile  
 245 250 255  
 Pro Val Phe Phe Ser Glu Tyr Gly Cys Asn Glu Val Thr Pro Arg Leu  
 260 265 270  
 Phe Thr Glu Val Glu Ala Leu Tyr Gly Ser Asn Met Thr Asp Val Trp  
 275 280 285  
 Ser Gly Gly Ile Val Tyr Met Tyr Phe Glu Glu Thr Asn Lys Tyr Gly  
 290 295 300  
 Leu Val Ser Ile Asp Gly Asn Asp Val Lys Thr Leu Asp Asp Phe Asn  
 305 310 315 320  
 Asn Tyr Ser Ser Glu Ile Asn Lys Ile Ser Pro Thr Ser Ala Asn Thr  
 325 330 335  
 Lys Ser Tyr Ser Ala Thr Thr Ser Asp Val Ala Cys Pro Ala Thr Gly  
 340 345 350  
 Lys Tyr Trp Ser Ala Ala Thr Glu Leu Pro Pro Thr Pro Asn Gly Gly  
 355 360 365  
 Leu Cys Ser Cys Met Asn Ala Ala Asn Ser Cys Val Val Ser Asp Asp  
 370 375 380  
 Val Asp Ser Asp Asp Tyr Glu Thr Leu Phe Asn Trp Ile Cys Asn Glu  
 385 390 395 400

Val Asp Cys Ser Gly Ile Ser Ala Asn Gly Thr Ala Gly Lys Tyr Gly  
405 410 415

Ala Tyr Ser Phe Cys Thr Pro Lys Glu Gln Leu Ser Phe Val Met Asn  
420 425 430

Leu Tyr Tyr Glu Lys Ser Gly Gly Ser Lys Ser Asp Cys Ser Phe Ser  
435 440 445

Gly Ser Ala Thr Leu Gln Thr Ala Thr Thr Gln Ala Ser Cys Ser Ser  
450 455 460

Ala Leu Lys Glu Ile Gly Ser Met Gly Thr Asn Ser Ala Ser Gly Ser  
465 470 475 480

Val Asp Leu Gly Ser Gly Thr Glu Ser Ser Thr Ala Ser Ser Asn Ala  
485 490 495

Ser Gly Ser Ser Lys Ser Asn Ser Gly Ser Ser Gly Ser Ser Ser  
500 505 510

Ser Ser Ser Ser Ser Ala Ser Ser Ser Ser Ser Ser Lys Lys Asn  
515 520 525

Ala Ala Thr Asn Val Lys Ala Asn Leu Ala Gln Val Val Phe Thr Ser  
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<210> 34  
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<212> PRT  
<213> Saccharomyces cerevisiae

<400> 34

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Gln Pro Leu Tyr Pro Ser Gln Ala Asp Gly Tyr Tyr Asp Pro Asn Val  
35 40 45

Ala Ala Gly Thr Glu Ala Asp Met Tyr Gly Gln Gln Pro Pro Asn Glu  
50 55 60

Ser Tyr Asp Gln Asp Tyr Thr Asn Gly Glu Tyr Tyr Gly Gln Pro Pro  
65 70 75 80

Asn Met Ala Ala Gln Asp Gly Glu Asn Phe Ser Asp Phe Ser Ser Tyr

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Gly	Pro	Pro	Gly 100	Thr	Pro	Gly	Tyr	Asp 105	Ser	Tyr	Gly	Gly	Gln 110	Tyr	Thr		
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Pro	Ile 130	Tyr	Gly	Asn	Tyr	Asp 135	Pro	Asn	Ala	Ile	Ala 140	Met	Ala	Leu	Pro		
Asn 145	Glu	Pro	Tyr	Pro	Ala 150	Trp	Thr	Ala	Asp	Ser 155	Gln	Ser	Pro	Val	Ser 160		
Ile	Glu	Gln	Ile	Glu 165	Asp	Ile	Phe	Ile	Asp 170	Leu	Thr	Asn	Arg	Leu 175	Gly		
Phe	Gln	Arg	Asp 180	Ser	Met	Arg	Asn	Met 185	Phe	Asp	His	Phe	Met 190	Val	Leu		
Leu	Asp	Ser 195	Arg	Ser	Ser	Arg	Met 200	Ser	Pro	Asp	Gln	Ala 205	Leu	Leu	Ser		
Leu	His 210	Ala	Asp	Tyr	Ile	Gly 215	Gly	Asp	Thr	Ala	Asn 220	Tyr	Lys	Lys	Trp		
Tyr 225	Phe	Ala	Ala	Gln	Leu 230	Asp	Met	Asp	Asp	Glu 235	Ile	Gly	Phe	Arg	Asn 240		
Met	Ser	Leu	Gly	Lys 245	Leu	Ser	Arg	Lys	Ala 250	Arg	Lys	Ala	Lys	Lys 255	Lys		
Asn	Lys	Lys	Ala 260	Met	Glu	Glu	Ala	Asn 265	Pro	Glu	Asp	Thr	Glu 270	Glu	Thr		
Leu	Asn	Lys 275	Ile	Glu	Gly	Asp	Asn 280	Ser	Leu	Glu	Ala	Ala 285	Asp	Phe	Arg		
Trp	Lys 290	Ala	Lys	Met	Asn	Gln 295	Leu	Ser	Pro	Leu	Glu 300	Arg	Val	Arg	His		
Ile 305	Ala	Leu	Tyr	Leu	Leu 310	Cys	Trp	Gly	Glu	Ala 315	Asn	Gln	Val	Arg	Phe 320		
Thr	Ala	Glu	Cys	Leu 325	Cys	Phe	Ile	Tyr	Lys 330	Cys	Ala	Leu	Asp	Tyr 335	Leu		
Asp	Ser	Pro	Leu 340	Cys	Gln	Gln	Arg	Gln 345	Glu	Pro	Met	Pro	Glu 350	Gly	Asp		
Phe	Leu	Asn 355	Arg	Val	Ile	Thr	Pro 360	Ile	Tyr	His	Phe	Ile 365	Arg	Asn	Gln		

Val Tyr Glu Ile Val Asp Gly Arg Phe Val Lys Arg Glu Arg Asp His  
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 Asn Lys Ile Val Gly Tyr Asp Asp Leu Asn Gln Leu Phe Trp Tyr Pro  
 385 390 395 400  
 Glu Gly Ile Ala Lys Ile Val Leu Glu Asp Gly Thr Lys Leu Ile Glu  
 405 410 415  
 Leu Pro Leu Glu Glu Arg Tyr Leu Arg Leu Gly Asp Val Val Trp Asp  
 420 425 430  
 Asp Val Phe Phe Lys Thr Tyr Lys Glu Thr Arg Thr Trp Leu His Leu  
 435 440 445  
 Val Thr Asn Phe Asn Arg Ile Trp Val Met His Ile Ser Ile Phe Trp  
 450 455 460  
 Met Tyr Phe Ala Tyr Asn Ser Pro Thr Phe Tyr Thr His Asn Tyr Gln  
 465 470 475 480  
 Gln Leu Val Asp Asn Gln Pro Leu Ala Ala Tyr Lys Trp Ala Ser Cys  
 485 490 495  
 Ala Leu Gly Gly Thr Val Ala Ser Leu Ile Gln Ile Val Ala Thr Leu  
 500 505 510  
 Cys Glu Trp Ser Phe Val Pro Arg Lys Trp Ala Gly Ala Gln His Leu  
 515 520 525  
 Ser Arg Arg Phe Trp Phe Leu Cys Ile Ile Phe Gly Ile Asn Leu Gly  
 530 535 540  
 Pro Ile Ile Phe Val Phe Ala Tyr Asp Lys Asp Thr Val Tyr Ser Thr  
 545 550 555 560  
 Ala Ala His Val Val Ala Ala Val Met Phe Phe Val Ala Val Ala Thr  
 565 570 575  
 Ile Ile Phe Phe Ser Ile Met Pro Leu Gly Gly Leu Phe Thr Ser Tyr  
 580 585 590  
 Met Lys Lys Ser Thr Arg Arg Tyr Val Ala Ser Gln Thr Phe Thr Ala  
 595 600 605  
 Ala Phe Ala Pro Leu His Gly Leu Asp Arg Trp Met Ser Tyr Leu Val  
 610 615 620  
 Trp Val Thr Val Phe Ala Ala Lys Tyr Ser Glu Ser Tyr Tyr Phe Leu  
 625 630 635 640

Val Leu Ser Leu Arg<sub>645</sub> Asp Pro Ile Arg Ile<sub>650</sub> Leu Ser Thr Thr Ala<sub>655</sub> Met  
 Arg Cys Thr Gly<sub>660</sub> Glu Tyr Trp Trp Gly<sub>665</sub> Ala Val Leu Cys Lys<sub>670</sub> Val Gln  
 Pro Lys Ile<sub>675</sub> Val Leu Gly Leu Val<sub>680</sub> Ile Ala Thr Asp Phe<sub>685</sub> Ile Leu Phe  
 Phe Leu<sub>690</sub> Asp Thr Tyr Leu Trp<sub>695</sub> Tyr Ile Ile Val Asn<sub>700</sub> Thr Ile Phe Ser  
 Val Gly Lys Ser Phe Tyr<sub>710</sub> Leu Gly Ile Ser Ile<sub>715</sub> Leu Thr Pro Trp Arg<sub>720</sub>  
 Asn Ile Phe Thr Arg<sub>725</sub> Leu Pro Lys Arg Ile<sub>730</sub> Tyr Ser Lys Ile Leu<sub>735</sub> Ala  
 Thr Thr Asp Met<sub>740</sub> Glu Ile Lys Tyr Lys<sub>745</sub> Pro Lys Val Leu Ile<sub>750</sub> Ser Gln  
 Val Trp Asn<sub>755</sub> Ala Ile Ile Ile Ser<sub>760</sub> Met Tyr Arg Glu His<sub>765</sub> Leu Leu Ala  
 Ile Asp<sub>770</sub> His Val Gln Lys Leu<sub>775</sub> Leu Tyr His Gln Val<sub>780</sub> Pro Ser Glu Ile  
 Glu Gly Lys Arg Thr Leu<sub>790</sub> Arg Ala Pro Thr Phe<sub>795</sub> Phe Val Ser Gln Asp<sub>800</sub>  
 Asp Asn Asn Phe Glu<sub>805</sub> Thr Glu Phe Phe Pro<sub>810</sub> Arg Asp Ser Glu Ala<sub>815</sub> Glu  
 Arg Arg Ile Ser<sub>820</sub> Phe Phe Ala Gln Ser<sub>825</sub> Leu Ser Thr Pro Ile<sub>830</sub> Pro Glu  
 Pro Leu Pro<sub>835</sub> Val Asp Asn Met Pro<sub>840</sub> Thr Phe Thr Val Leu<sub>845</sub> Thr Pro His  
 Tyr Ala<sub>850</sub> Glu Arg Ile Leu Leu<sub>855</sub> Ser Leu Arg Glu Ile<sub>860</sub> Ile Arg Glu Asp  
 Asp Gln Phe Ser Arg Val<sub>870</sub> Thr Leu Leu Glu Tyr<sub>875</sub> Leu Lys Gln Leu His<sub>880</sub>  
 Pro Val Glu Trp Glu<sub>885</sub> Cys Phe Val Lys Asp<sub>890</sub> Thr Lys Ile Leu Ala<sub>895</sub> Glu  
 Glu Thr Ala Ala<sub>900</sub> Tyr Glu Gly Asn Glu<sub>905</sub> Asn Glu Ala Glu Lys<sub>910</sub> Glu Asp



Ala Leu Lys Ser Gln Ile Asp Asp Leu Pro Phe Tyr Cys Ile Gly Phe  
 915 920 925

Lys Ser Ala Ala Pro Glu Tyr Thr Leu Arg Thr Arg Ile Trp Ala Ser  
 930 935 940

Leu Arg Ser Gln Thr Leu Tyr Arg Thr Ile Ser Gly Phe Met Asn Tyr  
 945 950 955 960

Ser Arg Ala Ile Lys Leu Leu Tyr Arg Val Glu Asn Pro Glu Ile Val  
 965 970 975

Gln Met Phe Gly Gly Asn Ala Glu Gly Leu Glu Arg Glu Leu Glu Lys  
 980 985 990

Met Ala Arg Arg Lys Phe Lys Phe Leu Val Ser Met Gln Arg Leu Ala  
 995 1000 1005

Lys Phe Lys Pro His Glu Leu Glu Asn Ala Glu Phe Leu Leu Arg  
 1010 1015 1020

Ala Tyr Pro Asp Leu Gln Ile Ala Tyr Leu Asp Glu Glu Pro Pro  
 1025 1030 1035

Leu Thr Glu Gly Glu Glu Pro Arg Ile Tyr Ser Ala Leu Ile Asp  
 1040 1045 1050

Gly His Cys Glu Ile Leu Asp Asn Gly Arg Arg Arg Pro Lys Phe  
 1055 1060 1065

Arg Val Gln Leu Ser Gly Asn Pro Ile Leu Gly Asp Gly Lys Ser  
 1070 1075 1080

Asp Asn Gln Asn His Ala Leu Ile Phe Tyr Arg Gly Glu Tyr Ile  
 1085 1090 1095

Gln Leu Ile Asp Ala Asn Gln Asp Asn Tyr Leu Glu Glu Cys Leu  
 1100 1105 1110

Lys Ile Arg Ser Val Leu Ala Glu Phe Glu Glu Leu Asn Val Glu  
 1115 1120 1125

Gln Val Asn Pro Tyr Ala Pro Gly Leu Arg Tyr Glu Glu Gln Thr  
 1130 1135 1140

Thr Asn His Pro Val Ala Ile Val Gly Ala Arg Glu Tyr Ile Phe  
 1145 1150 1155

Ser Glu Asn Ser Gly Val Leu Gly Asp Val Ala Ala Gly Lys Glu  
 1160 1165 1170

Gln Thr Phe Gly Thr Leu Phe Ala Arg Thr Leu Ser Gln Ile Gly

1175	1180	1185
Gly Lys 1190	Leu His Tyr Gly His 1195	Pro Asp Phe Ile Asn 1200
Met Thr 1205	Thr Arg Gly Gly Val 1210	Ser Lys Ala Gln Lys 1215
Leu Asn 1220	Glu Asp Ile Tyr Ala 1225	Gly Met Asn Ala Met 1230
Gly Arg 1235	Ile Lys His Cys Glu 1240	Tyr Tyr Gln Cys Gly 1245
Asp Leu 1250	Gly Phe Gly Thr Ile 1255	Leu Asn Phe Thr Thr 1260
Ala Gly 1265	Met Gly Glu Gln Met 1270	Leu Ser Arg Glu Tyr 1275
Gly Thr 1280	Gln Leu Pro Val Asp 1285	Arg Phe Leu Thr Phe 1290
His Pro 1295	Gly Phe His Leu Asn 1300	Asn Leu Phe Ile Gln 1305
Gln Met 1310	Phe Met Leu Thr Leu 1315	Val Asn Leu Ser Ser 1320
Glu Ser 1325	Ile Met Cys Ile Tyr 1330	Asp Arg Asn Lys Pro 1335
Val Leu 1340	Val Pro Ile Gly Cys 1345	Tyr Asn Phe Gln Pro 1350
Trp Val 1355	Arg Arg Tyr Thr Leu 1360	Ser Ile Phe Ile Val 1365
Ala Phe 1370	Val Pro Ile Val Val 1375	Gln Glu Leu Ile Glu 1380
Trp Lys 1385	Ala Thr Gln Arg Phe 1390	Phe Cys His Leu Leu 1395
Pro Met 1400	Phe Glu Val Phe Ala 1405	Gly Gln Ile Tyr Ser 1410
Leu Ser 1415	Asp Leu Ala Ile Gly 1420	Gly Ala Arg Tyr Ile 1425
Arg Gly 1430	Phe Ala Thr Ser Arg 1435	Ile Pro Phe Ser Ile 1440

Arg	Phe	Ala	Gly	Ser	Ala	Ile	Tyr	Met	Gly	Ala	Arg	Ser	Met	Leu
	1445					1450					1455			
Met	Leu	Leu	Phe	Gly	Thr	Val	Ala	His	Trp	Gln	Ala	Pro	Leu	Leu
	1460					1465					1470			
Trp	Phe	Trp	Ala	Ser	Leu	Ser	Ser	Leu	Ile	Phe	Ala	Pro	Phe	Val
	1475					1480					1485			
Phe	Asn	Pro	His	Gln	Phe	Ala	Trp	Glu	Asp	Phe	Phe	Leu	Asp	Tyr
	1490					1495					1500			
Arg	Asp	Tyr	Ile	Arg	Trp	Leu	Ser	Arg	Gly	Asn	Asn	Gln	Tyr	His
	1505					1510					1515			
Arg	Asn	Ser	Trp	Ile	Gly	Tyr	Val	Arg	Met	Ser	Arg	Ala	Arg	Ile
	1520					1525					1530			
Thr	Gly	Phe	Lys	Arg	Lys	Leu	Val	Gly	Asp	Glu	Ser	Glu	Lys	Ala
	1535					1540					1545			
Ala	Gly	Asp	Ala	Ser	Arg	Ala	His	Arg	Thr	Asn	Leu	Ile	Met	Ala
	1550					1555					1560			
Glu	Ile	Ile	Pro	Cys	Ala	Ile	Tyr	Ala	Ala	Gly	Cys	Phe	Ile	Ala
	1565					1570					1575			
Phe	Thr	Phe	Ile	Asn	Ala	Gln	Thr	Gly	Val	Lys	Thr	Thr	Asp	Asp
	1580					1585					1590			
Asp	Arg	Val	Asn	Ser	Val	Leu	Arg	Ile	Ile	Ile	Cys	Thr	Leu	Ala
	1595					1600					1605			
Pro	Ile	Ala	Val	Asn	Leu	Gly	Val	Leu	Phe	Phe	Cys	Met	Gly	Met
	1610					1615					1620			
Ser	Cys	Cys	Ser	Gly	Pro	Leu	Phe	Gly	Met	Cys	Cys	Lys	Lys	Thr
	1625					1630					1635			
Gly	Ser	Val	Met	Ala	Gly	Ile	Ala	His	Gly	Val	Ala	Val	Ile	Val
	1640					1645					1650			
His	Ile	Ala	Phe	Phe	Ile	Val	Met	Trp	Val	Leu	Glu	Ser	Phe	Asn
	1655					1660					1665			
Phe	Val	Arg	Met	Leu	Ile	Gly	Val	Val	Thr	Cys	Ile	Gln	Cys	Gln
	1670					1675					1680			
Arg	Leu	Ile	Phe	His	Cys	Met	Thr	Ala	Leu	Met	Leu	Thr	Arg	Glu
	1685					1690					1695			

Phe	Lys	Asn	Asp	His	Ala	Asn	Thr	Ala	Phe	Trp	Thr	Gly	Lys	Trp
	1700					1705					1710			
Tyr	Gly	Lys	Gly	Met	Gly	Tyr	Met	Ala	Trp	Thr	Gln	Pro	Ser	Arg
	1715					1720					1725			
Glu	Leu	Thr	Ala	Lys	Val	Ile	Glu	Leu	Ser	Glu	Phe	Ala	Ala	Asp
	1730					1735					1740			
Phe	Val	Leu	Gly	His	Val	Ile	Leu	Ile	Cys	Gln	Leu	Pro	Leu	Ile
	1745					1750					1755			
Ile	Ile	Pro	Lys	Ile	Asp	Lys	Phe	His	Ser	Ile	Met	Leu	Phe	Trp
	1760					1765					1770			
Leu	Lys	Pro	Ser	Arg	Gln	Ile	Arg	Pro	Pro	Ile	Tyr	Ser	Leu	Lys
	1775					1780					1785			
Gln	Thr	Arg	Leu	Arg	Lys	Arg	Met	Val	Lys	Lys	Tyr	Cys	Ser	Leu
	1790					1795					1800			
Tyr	Phe	Leu	Val	Leu	Ala	Ile	Phe	Ala	Gly	Cys	Ile	Ile	Gly	Pro
	1805					1810					1815			
Ala	Val	Ala	Ser	Ala	Lys	Ile	His	Lys	His	Ile	Gly	Asp	Ser	Leu
	1820					1825					1830			
Asp	Gly	Val	Val	His	Asn	Leu	Phe	Gln	Pro	Ile	Asn	Thr	Thr	Asn
	1835					1840					1845			
Asn	Asp	Thr	Gly	Ser	Gln	Met	Ser	Thr	Tyr	Gln	Ser	His	Tyr	Tyr
	1850					1855					1860			
Thr	His	Thr	Pro	Ser	Leu	Lys	Thr	Trp	Ser	Thr	Ile	Lys		
	1865					1870					1875			