

504-10 PCT sequence listing ST.txt  
SEQUENCE LISTING

<110> Deutsches Institut für Ernährungsforschung  
Potsdam-Rehbrücke  
Technische Universität München  
Symrise GmbH & Co. KG

<120> Methods for Isolating Agonists and Antagonists of Taste Receptors

<130> 504-10 PCT

<140>

<141> 2010-03-08

<150> US 61/158,145

<151> 2009-03-06

<160> 8

<170> PatentIn version 3.5

<210> 1

<211> 35

<212> PRT

<213> artificial

<220>

<223> Protein Sequence of the Rhodopsin tag

<400> 1

Met Asn Gly Thr Glu Gly Pro Asn Phe Tyr Val Pro Phe Ser Asn Lys  
1 5 10 15

Thr Gly Val Val Arg Ser Pro Phe Glu Ala Pro Gln Tyr Tyr Leu Ala  
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Glu Pro Trp  
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<210> 2

<211> 374

<212> PRT

<213> artificial

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<223> Protein Sequence of G16gust44

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Asp Glu Lys Ala Ala Ala Arg Val Asp Gln Glu Ile Asn Arg Ile Leu  
20 25 30

Leu Glu Gln Lys Lys Gln Asp Arg Gly Glu Leu Lys Leu Leu Leu Leu  
35 40 45

Gly Pro Gly Glu Ser Gly Lys Ser Thr Phe Ile Lys Gln Met Arg Ile  
50 55 60

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Ile His Gly Ala Gly Tyr Ser Glu Glu Glu Arg Lys Gly Phe Arg Pro  
65 70 75 80

Leu Val Tyr Gln Asn Ile Phe Val Ser Met Arg Ala Met Ile Glu Ala  
85 90 95

Met Glu Arg Leu Gln Ile Pro Phe Ser Arg Pro Glu Ser Lys His His  
100 105 110

Ala Ser Leu Val Met Ser Gln Asp Pro Tyr Lys Val Thr Thr Phe Glu  
115 120 125

Lys Arg Tyr Ala Ala Ala Met Gln Trp Leu Trp Arg Asp Ala Gly Ile  
130 135 140

Arg Ala Cys Tyr Glu Arg Arg Arg Glu Phe His Leu Leu Asp Ser Ala  
145 150 155 160

Val Tyr Tyr Leu Ser His Leu Glu Arg Ile Thr Glu Glu Gly Tyr Val  
165 170 175

Pro Thr Ala Gln Asp Val Leu Arg Ser Arg Met Pro Thr Thr Gly Ile  
180 185 190

Asn Glu Tyr Cys Phe Ser Val Gln Lys Thr Asn Leu Arg Ile Val Asp  
195 200 205

Val Gly Gly Gln Lys Ser Glu Arg Lys Lys Trp Ile His Cys Phe Glu  
210 215 220

Asn Val Ile Ala Leu Ile Tyr Leu Ala Ser Leu Ser Glu Tyr Asp Gln  
225 230 235 240

Cys Leu Glu Glu Asn Asn Gln Glu Asn Arg Met Lys Glu Ser Leu Ala  
245 250 255

Leu Phe Gly Thr Ile Leu Glu Leu Pro Trp Phe Lys Ser Thr Ser Val  
260 265 270

Ile Leu Phe Leu Asn Lys Thr Asp Ile Leu Glu Glu Lys Ile Pro Thr  
275 280 285

Ser His Leu Ala Thr Tyr Phe Pro Ser Phe Gln Gly Pro Lys Gln Asp  
290 295 300

Ala Glu Ala Ala Lys Arg Phe Ile Leu Asp Met Tyr Thr Arg Met Tyr  
305 310 315 320

Thr Gly Cys Val Asp Gly Pro Glu Gly Ser Asn Leu Lys Lys Glu Asp  
325 330 335

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Lys Glu Ile Tyr Ser His Met Thr Cys Ala Thr Asp Thr Gln Asn Val  
340 345 350

Lys Phe Val Phe Asp Ala Val Thr Asp Ile Ile Ile Lys Glu Asn Leu  
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Lys Asp Cys Gly Leu Phe  
370

<210> 3  
<211> 669  
<212> PRT  
<213> Homo sapiens

<400> 3

Met Glu Gly Asn Lys Leu Glu Glu Gln Asp Ser Ser Pro Pro Gln Ser  
1 5 10 15

Thr Pro Gly Leu Met Lys Gly Asn Lys Arg Glu Glu Gln Gly Leu Gly  
20 25 30

Pro Glu Pro Ala Ala Pro Gln Gln Pro Thr Ala Glu Glu Glu Ala Leu  
35 40 45

Ile Glu Phe His Arg Ser Tyr Arg Glu Leu Phe Glu Phe Phe Cys Asn  
50 55 60

Asn Thr Thr Ile His Gly Ala Ile Arg Leu Val Cys Ser Gln His Asn  
65 70 75 80

Arg Met Lys Thr Ala Phe Trp Ala Val Leu Trp Leu Cys Thr Phe Gly  
85 90 95

Met Met Tyr Trp Gln Phe Gly Leu Leu Phe Gly Glu Tyr Phe Ser Tyr  
100 105 110

Pro Val Ser Leu Asn Ile Asn Leu Asn Ser Asp Lys Leu Val Phe Pro  
115 120 125

Ala Val Thr Ile Cys Thr Leu Asn Pro Tyr Arg Tyr Pro Glu Ile Lys  
130 135 140

Glu Glu Leu Glu Glu Leu Asp Arg Ile Thr Glu Gln Thr Leu Phe Asp  
145 150 155 160

Leu Tyr Lys Tyr Ser Ser Phe Thr Thr Leu Val Ala Gly Ser Arg Ser  
165 170 175

Arg Arg Asp Leu Arg Gly Thr Leu Pro His Pro Leu Gln Arg Leu Arg  
180 185 190

504-10 PCT sequence listing ST.txt

Val Pro Pro Pro Pro His Gly Ala Arg Arg Ala Arg Ser Val Ala Ser  
195 200 205

Ser Leu Arg Asp Asn Asn Pro Gln Val Asp Trp Lys Asp Trp Lys Ile  
210 215 220

Gly Phe Gln Leu Cys Asn Gln Asn Lys Ser Asp Cys Phe Tyr Gln Thr  
225 230 235 240

Tyr Ser Ser Gly Val Asp Ala Val Arg Glu Trp Tyr Arg Phe His Tyr  
245 250 255

Ile Asn Ile Leu Ser Arg Leu Pro Glu Thr Leu Pro Ser Leu Glu Glu  
260 265 270

Asp Thr Leu Gly Asn Phe Ile Phe Ala Cys Arg Phe Asn Gln Val Ser  
275 280 285

Cys Asn Gln Ala Asn Tyr Ser His Phe His His Pro Met Tyr Gly Asn  
290 295 300

Cys Tyr Thr Phe Asn Asp Lys Asn Asn Ser Asn Leu Trp Met Ser Ser  
305 310 315 320

Met Pro Gly Ile Asn Asn Gly Leu Ser Leu Met Leu Arg Ala Glu Gln  
325 330 335

Asn Asp Phe Ile Pro Leu Leu Ser Thr Val Thr Gly Ala Arg Val Met  
340 345 350

Val His Gly Gln Asp Glu Pro Ala Phe Met Asp Asp Gly Gly Phe Asn  
355 360 365

Leu Arg Pro Gly Val Glu Thr Ser Ile Ser Met Arg Lys Glu Thr Leu  
370 375 380

Asp Arg Leu Gly Gly Asp Tyr Gly Asp Cys Thr Lys Asn Gly Ser Asp  
385 390 395 400

Val Pro Val Glu Asn Leu Tyr Pro Ser Lys Tyr Thr Gln Gln Val Cys  
405 410 415

Ile His Ser Cys Phe Gln Glu Ser Met Ile Lys Glu Cys Gly Cys Ala  
420 425 430

Tyr Ile Phe Tyr Pro Arg Pro Gln Asn Val Glu Tyr Cys Asp Tyr Arg  
435 440 445

Lys His Ser Ser Trp Gly Tyr Cys Tyr Tyr Lys Leu Gln Val Asp Phe  
450 455 460

504-10 PCT sequence listing ST.txt

Ser Ser Asp His Leu Gly Cys Phe Thr Lys Cys Arg Lys Pro Cys Ser  
465 470 475 480

Val Thr Ser Tyr Gln Leu Ser Ala Gly Tyr Ser Arg Trp Pro Ser Val  
485 490 495

Thr Ser Gln Glu Trp Val Phe Gln Met Leu Ser Arg Gln Asn Asn Tyr  
500 505 510

Thr Val Asn Asn Lys Arg Asn Gly Val Ala Lys Val Asn Ile Phe Phe  
515 520 525

Lys Glu Leu Asn Tyr Lys Thr Asn Ser Glu Ser Pro Ser Val Thr Met  
530 535 540

Val Thr Leu Leu Ser Asn Leu Gly Ser Gln Trp Ser Leu Trp Phe Gly  
545 550 555 560

Ser Ser Val Leu Ser Val Val Glu Met Ala Glu Leu Val Phe Asp Leu  
565 570 575

Leu Val Ile Met Phe Leu Met Leu Leu Arg Arg Phe Arg Ser Arg Tyr  
580 585 590

Trp Ser Pro Gly Arg Gly Gly Arg Gly Ala Gln Glu Val Ala Ser Thr  
595 600 605

Leu Ala Ser Ser Pro Pro Ser His Phe Cys Pro His Pro Met Ser Leu  
610 615 620

Ser Leu Ser Gln Pro Gly Pro Ala Pro Ser Pro Ala Leu Thr Ala Pro  
625 630 635 640

Pro Pro Ala Tyr Ala Thr Leu Gly Pro Arg Pro Ser Pro Gly Gly Ser  
645 650 655

Ala Gly Ala Ser Ser Ser Thr Cys Pro Leu Gly Gly Pro  
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<210> 4  
<211> 640  
<212> PRT  
<213> Homo sapiens

<400> 4

Met His Val Lys Lys Tyr Leu Leu Lys Gly Leu His Arg Leu Gln Lys  
1 5 10 15

Gly Pro Gly Tyr Thr Tyr Lys Glu Leu Leu Val Trp Tyr Cys Asp Asn  
20 25 30

504-10 PCT sequence listing ST.txt

Thr Asn Thr His Gly Pro Lys Arg Ile Ile Cys Glu Gly Pro Lys Lys  
35 40 45

Lys Ala Met Trp Phe Leu Leu Thr Leu Leu Phe Ala Ala Leu Val Cys  
50 55 60

Trp Gln Trp Gly Ile Phe Ile Arg Thr Tyr Leu Ser Trp Glu Val Ser  
65 70 75 80

Val Ser Leu Ser Val Gly Phe Lys Thr Met Asp Phe Pro Ala Val Thr  
85 90 95

Ile Cys Asn Ala Ser Pro Phe Lys Tyr Ser Lys Ile Lys His Leu Leu  
100 105 110

Lys Asp Leu Asp Glu Leu Met Glu Ala Val Leu Glu Arg Ile Leu Ala  
115 120 125

Pro Glu Leu Ser His Ala Asn Ala Thr Arg Asn Leu Asn Phe Ser Ile  
130 135 140

Trp Asn His Thr Pro Leu Val Leu Ile Asp Glu Arg Asn Pro His His  
145 150 155 160

Pro Met Val Leu Asp Leu Phe Gly Asp Asn His Asn Gly Leu Thr Ser  
165 170 175

Ser Ser Ala Ser Glu Lys Ile Cys Asn Ala His Gly Cys Lys Met Ala  
180 185 190

Met Arg Leu Cys Ser Leu Asn Arg Thr Gln Cys Thr Phe Arg Asn Phe  
195 200 205

Thr Ser Ala Thr Gln Ala Leu Thr Glu Trp Tyr Ile Leu Gln Ala Thr  
210 215 220

Asn Ile Phe Ala Gln Val Pro Gln Gln Glu Leu Val Glu Met Ser Tyr  
225 230 235 240

Pro Gly Glu Gln Met Ile Leu Ala Cys Leu Phe Gly Ala Glu Pro Cys  
245 250 255

Asn Tyr Arg Asn Phe Thr Ser Ile Phe Tyr Pro His Tyr Gly Asn Cys  
260 265 270

Tyr Ile Phe Asn Trp Gly Met Thr Glu Lys Ala Leu Pro Ser Ala Asn  
275 280 285

Pro Gly Thr Glu Phe Gly Leu Lys Leu Ile Leu Asp Ile Gly Gln Glu  
290 295 300

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Asp Tyr Val Pro Phe Leu Ala Ser Thr Ala Gly Val Arg Leu Met Leu  
 305 310 315 320  
 His Glu Gln Arg Ser Tyr Pro Phe Ile Arg Asp Glu Gly Ile Tyr Ala  
 325 330 335  
 Met Ser Gly Thr Glu Thr Ser Ile Gly Val Leu Val Asp Lys Leu Gln  
 340 345 350  
 Arg Met Gly Glu Pro Tyr Ser Pro Cys Thr Val Asn Gly Ser Glu Val  
 355 360 365  
 Pro Val Gln Asn Phe Tyr Ser Asp Tyr Asn Thr Thr Tyr Ser Ile Gln  
 370 375 380  
 Ala Cys Leu Arg Ser Cys Phe Gln Asp His Met Ile Arg Asn Cys Asn  
 385 390 395 400  
 Cys Gly His Tyr Leu Tyr Pro Leu Pro Arg Gly Glu Lys Tyr Cys Asn  
 405 410 415  
 Asn Arg Asp Phe Pro Asp Trp Ala His Cys Tyr Ser Asp Leu Gln Met  
 420 425 430  
 Ser Val Ala Gln Arg Glu Thr Cys Ile Gly Met Cys Lys Glu Ser Cys  
 435 440 445  
 Asn Asp Thr Gln Tyr Lys Met Thr Ile Ser Met Ala Asp Trp Pro Ser  
 450 455 460  
 Glu Ala Ser Glu Asp Trp Ile Phe His Val Leu Ser Gln Glu Arg Asp  
 465 470 475 480  
 Gln Ser Thr Asn Ile Thr Leu Ser Arg Lys Gly Ile Val Lys Leu Asn  
 485 490 495  
 Ile Tyr Phe Gln Glu Phe Asn Tyr Arg Thr Ile Glu Glu Ser Ala Ala  
 500 505 510  
 Asn Asn Ile Val Trp Leu Leu Ser Asn Leu Gly Gly Gln Phe Gly Phe  
 515 520 525  
 Trp Met Gly Gly Ser Val Leu Cys Leu Ile Glu Phe Gly Glu Ile Ile  
 530 535 540  
 Ile Asp Phe Val Trp Ile Thr Ile Ile Lys Leu Val Ala Leu Ala Lys  
 545 550 555 560  
 Ser Leu Arg Gln Arg Arg Ala Gln Ala Ser Tyr Ala Gly Pro Pro Pro  
 565 570 575

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Thr Val Ala Glu Leu Val Glu Ala His Thr Asn Phe Gly Phe Gln Pro  
580 585 590

Asp Thr Ala Pro Arg Ser Pro Asn Thr Gly Pro Tyr Pro Ser Glu Gln  
595 600 605

Ala Leu Pro Ile Pro Gly Thr Pro Pro Pro Asn Tyr Asp Ser Leu Arg  
610 615 620

Leu Gln Pro Leu Asp Val Ile Glu Ser Asp Ser Glu Gly Asp Ala Ile  
625 630 635 640

<210> 5  
<211> 649  
<212> PRT  
<213> Homo sapiens

<400> 5

Met Ala Pro Gly Glu Lys Ile Lys Ala Lys Ile Lys Lys Asn Leu Pro  
1 5 10 15

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

Cys Leu Asn Thr Asn Thr His Gly Cys Arg Arg Ile Val Val Ser Arg  
35 40 45

Gly Arg Leu Arg Arg Leu Leu Trp Ile Gly Phe Thr Leu Thr Ala Val  
50 55 60

Ala Leu Ile Leu Trp Gln Cys Ala Leu Leu Val Phe Ser Phe Tyr Thr  
65 70 75 80

Val Ser Val Ser Ile Lys Val His Phe Arg Lys Leu Asp Phe Pro Ala  
85 90 95

Val Thr Ile Cys Asn Ile Asn Pro Tyr Lys Tyr Ser Thr Val Arg His  
100 105 110

Leu Leu Ala Asp Leu Glu Gln Glu Thr Arg Glu Ala Leu Lys Ser Leu  
115 120 125

Tyr Gly Phe Pro Glu Ser Arg Lys Arg Arg Glu Ala Glu Ser Trp Asn  
130 135 140

Ser Val Ser Glu Gly Lys Gln Pro Arg Phe Ser His Arg Ile Pro Leu  
145 150 155 160

Leu Ile Phe Asp Gln Asp Glu Lys Gly Lys Ala Arg Asp Phe Phe Thr  
165 170 175

Gly Arg Lys Arg Lys Val Gly Gly Ser Ile Ile His Lys Ala Ser Asn  
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180

185

190

Val Met His Ile Glu Ser Lys Gln Val Val Gly Phe Gln Leu Cys Ser  
195 200 205

Asn Asp Thr Ser Asp Cys Ala Thr Tyr Thr Phe Ser Ser Gly Ile Asn  
210 215 220

Ala Ile Gln Glu Trp Tyr Lys Leu His Tyr Met Asn Ile Met Ala Gln  
225 230 235 240

Val Pro Leu Glu Lys Lys Ile Asn Met Ser Tyr Ser Ala Glu Glu Leu  
245 250 255

Leu Val Thr Cys Phe Phe Asp Gly Val Ser Cys Asp Ala Arg Asn Phe  
260 265 270

Thr Leu Phe His His Pro Met His Gly Asn Cys Tyr Thr Phe Asn Asn  
275 280 285

Arg Glu Asn Glu Thr Ile Leu Ser Thr Ser Met Gly Gly Ser Glu Tyr  
290 295 300

Gly Leu Gln Val Ile Leu Tyr Ile Asn Glu Glu Glu Tyr Asn Pro Phe  
305 310 315 320

Leu Val Ser Ser Thr Gly Ala Lys Val Ile Ile His Arg Gln Asp Glu  
325 330 335

Tyr Pro Phe Val Glu Asp Val Gly Thr Glu Ile Glu Thr Ala Met Val  
340 345 350

Thr Ser Ile Gly Met His Leu Thr Glu Ser Phe Lys Leu Ser Glu Pro  
355 360 365

Tyr Ser Gln Cys Thr Glu Asp Gly Ser Asp Val Pro Ile Arg Asn Ile  
370 375 380

Tyr Asn Ala Ala Tyr Ser Leu Gln Ile Cys Leu His Ser Cys Phe Gln  
385 390 395 400

Thr Lys Met Val Glu Lys Cys Gly Cys Ala Gln Tyr Ser Gln Pro Leu  
405 410 415

Pro Pro Ala Ala Asn Tyr Cys Asn Tyr Gln Gln His Pro Asn Trp Met  
420 425 430

Tyr Cys Tyr Tyr Gln Leu His Arg Ala Phe Val Gln Glu Glu Leu Gly  
435 440 445

Cys Gln Ser Val Cys Lys Glu Ala Cys Ser Phe Lys Glu Trp Thr Leu

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450

455

460

Thr Thr Ser Leu Ala Gln Trp Pro Ser Val Val Ser Glu Lys Trp Leu  
465 470 475 480

Leu Pro Val Leu Thr Trp Asp Gln Gly Arg Gln Val Asn Lys Lys Leu  
485 490 495

Asn Lys Thr Asp Leu Ala Lys Leu Leu Ile Phe Tyr Lys Asp Leu Asn  
500 505 510

Gln Arg Ser Ile Met Glu Ser Pro Ala Asn Ser Ile Glu Met Leu Leu  
515 520 525

Ser Asn Phe Gly Gly Gln Leu Gly Leu Trp Met Ser Cys Ser Val Val  
530 535 540

Cys Val Ile Glu Ile Ile Glu Val Phe Phe Ile Asp Phe Phe Ser Ile  
545 550 555 560

Ile Ala Arg Arg Gln Trp Gln Lys Ala Lys Glu Trp Trp Ala Trp Lys  
565 570 575

Gln Ala Pro Pro Cys Pro Glu Ala Pro Arg Ser Pro Gln Gly Gln Asp  
580 585 590

Asn Pro Ala Leu Asp Ile Asp Asp Asp Leu Pro Thr Phe Asn Ser Ala  
595 600 605

Leu His Leu Pro Pro Ala Leu Gly Thr Gln Val Pro Gly Thr Pro Pro  
610 615 620

Pro Lys Tyr Asn Thr Leu Arg Leu Glu Arg Ala Phe Ser Asn Gln Leu  
625 630 635 640

Thr Asp Thr Gln Met Leu Asp Glu Leu  
645

<210> 6  
<211> 638  
<212> PRT  
<213> Homo sapiens

<400> 6

Met Ala Glu His Arg Ser Met Asp Gly Arg Met Glu Ala Ala Thr Arg  
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Gly Gly Ser His Leu Gln Ala Ala Ala Gln Thr Pro Pro Arg Pro Gly  
20 25 30

Pro Pro Ser Ala Pro Pro Pro Pro Lys Glu Gly His Gln Glu Gly  
35 40 45

504-10 PCT sequence listing ST.txt

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

504-10 PCT sequence listing ST.txt

Thr Leu Ala Gly Ile Arg Val Met Val His Gly Arg Asn His Thr Pro  
325 330 335

Phe Leu Gly His His Ser Phe Ser Val Arg Pro Gly Thr Glu Ala Thr  
340 345 350

Ile Ser Ile Arg Glu Asp Glu Val His Arg Leu Gly Ser Pro Tyr Gly  
355 360 365

His Cys Thr Ala Gly Gly Glu Gly Val Glu Val Glu Leu Leu His Asn  
370 375 380

Thr Ser Tyr Thr Arg Gln Ala Cys Leu Val Ser Cys Phe Gln Gln Leu  
385 390 395 400

Met Val Glu Thr Cys Ser Cys Gly Tyr Tyr Leu His Pro Leu Pro Ala  
405 410 415

Gly Ala Glu Tyr Cys Ser Ser Ala Arg His Pro Ala Trp Gly His Cys  
420 425 430

Phe Tyr Arg Leu Tyr Gln Asp Leu Glu Thr His Arg Leu Pro Cys Thr  
435 440 445

Ser Arg Cys Pro Arg Pro Cys Arg Glu Ser Ala Phe Lys Leu Ser Thr  
450 455 460

Gly Thr Ser Arg Trp Pro Ser Ala Lys Ser Ala Gly Trp Thr Leu Ala  
465 470 475 480

Thr Leu Gly Glu Gln Gly Leu Pro His Gln Ser His Arg Gln Arg Ser  
485 490 495

Ser Leu Ala Lys Ile Asn Ile Val Tyr Gln Glu Leu Asn Tyr Arg Ser  
500 505 510

Val Glu Glu Ala Pro Val Tyr Ser Val Pro Gln Leu Leu Ser Ala Met  
515 520 525

Gly Ser Leu Cys Ser Leu Trp Phe Gly Ala Ser Val Leu Ser Leu Leu  
530 535 540

Glu Leu Leu Glu Leu Leu Leu Asp Ala Ser Ala Leu Thr Leu Val Leu  
545 550 555 560

Gly Gly Arg Arg Leu Arg Arg Ala Trp Phe Ser Trp Pro Arg Ala Ser  
565 570 575

Pro Ala Ser Gly Ala Ser Ser Ile Lys Pro Glu Ala Ser Gln Met Pro  
580 585 590

504-10 PCT sequence listing ST.txt

Pro Pro Ala Gly Gly Thr Ser Asp Asp Pro Glu Pro Ser Gly Pro His  
595 600 605

Leu Pro Arg Val Met Leu Pro Gly Val Leu Ala Gly Val Ser Ala Glu  
610 615 620

Glu Ser Trp Ala Gly Pro Gln Pro Leu Glu Thr Leu Asp Thr  
625 630 635

<210> 7  
<211> 839  
<212> PRT  
<213> Homo sapiens

<400> 7

Met Lys Lys Trp Ser Ser Thr Asp Leu Gly Ala Ala Ala Asp Pro Leu  
1 5 10 15

Gln Lys Asp Thr Cys Pro Asp Pro Leu Asp Gly Asp Pro Asn Ser Arg  
20 25 30

Pro Pro Pro Ala Lys Pro Gln Leu Ser Thr Ala Lys Ser Arg Thr Arg  
35 40 45

Leu Phe Gly Lys Gly Asp Ser Glu Glu Ala Phe Pro Val Asp Cys Pro  
50 55 60

His Glu Glu Gly Glu Leu Asp Ser Cys Pro Thr Ile Thr Val Ser Pro  
65 70 75 80

Val Ile Thr Ile Gln Arg Pro Gly Asp Gly Pro Thr Gly Ala Arg Leu  
85 90 95

Leu Ser Gln Asp Ser Val Ala Ala Ser Thr Glu Lys Thr Leu Arg Leu  
100 105 110

Tyr Asp Arg Arg Ser Ile Phe Glu Ala Val Ala Gln Asn Asn Cys Gln  
115 120 125

Asp Leu Glu Ser Leu Leu Leu Phe Leu Gln Lys Ser Lys Lys His Leu  
130 135 140

Thr Asp Asn Glu Phe Lys Asp Pro Glu Thr Gly Lys Thr Cys Leu Leu  
145 150 155 160

Lys Ala Met Leu Asn Leu His Asp Gly Gln Asn Thr Thr Ile Pro Leu  
165 170 175

Leu Leu Glu Ile Ala Arg Gln Thr Asp Ser Leu Lys Glu Leu Val Asn  
180 185 190

504-10 PCT sequence listing ST.txt

Ala Ser Tyr Thr Asp Ser Tyr Tyr Lys Gly Gln Thr Ala Leu His Ile  
195 200 205

Ala Ile Glu Arg Arg Asn Met Ala Leu Val Thr Leu Leu Val Glu Asn  
210 215 220

Gly Ala Asp Val Gln Ala Ala Ala His Gly Asp Phe Phe Lys Lys Thr  
225 230 235 240

Lys Gly Arg Pro Gly Phe Tyr Phe Gly Glu Leu Pro Leu Ser Leu Ala  
245 250 255

Ala Cys Thr Asn Gln Leu Gly Ile Val Lys Phe Leu Leu Gln Asn Ser  
260 265 270

Trp Gln Thr Ala Asp Ile Ser Ala Arg Asp Ser Val Gly Asn Thr Val  
275 280 285

Leu His Ala Leu Val Glu Val Ala Asp Asn Thr Ala Asp Asn Thr Lys  
290 295 300

Phe Val Thr Ser Met Tyr Asn Glu Ile Leu Met Leu Gly Ala Lys Leu  
305 310 315 320

His Pro Thr Leu Lys Leu Glu Glu Leu Thr Asn Lys Lys Gly Met Thr  
325 330 335

Pro Leu Ala Leu Ala Ala Gly Thr Gly Lys Ile Gly Val Leu Ala Tyr  
340 345 350

Ile Leu Gln Arg Glu Ile Gln Glu Pro Glu Cys Arg His Leu Ser Arg  
355 360 365

Lys Phe Thr Glu Trp Ala Tyr Gly Pro Val His Ser Ser Leu Tyr Asp  
370 375 380

Leu Ser Cys Ile Asp Thr Cys Glu Lys Asn Ser Val Leu Glu Val Ile  
385 390 395 400

Ala Tyr Ser Ser Ser Glu Thr Pro Asn Arg His Asp Met Leu Leu Val  
405 410 415

Glu Pro Leu Asn Arg Leu Leu Gln Asp Lys Trp Asp Arg Phe Val Lys  
420 425 430

Arg Ile Phe Tyr Phe Asn Phe Leu Val Tyr Cys Leu Tyr Met Ile Ile  
435 440 445

Phe Thr Met Ala Ala Tyr Tyr Arg Pro Val Asp Gly Leu Pro Pro Phe  
450 455 460

504-10 PCT sequence listing ST.txt

Lys Met Glu Lys Thr Gly Asp Tyr Phe Arg Val Thr Gly Glu Ile Leu  
 465 470 475 480  
 Ser Val Leu Gly Gly Val Tyr Phe Phe Phe Arg Gly Ile Gln Tyr Phe  
 485 490 495  
 Leu Gln Arg Arg Pro Ser Met Lys Thr Leu Phe Val Asp Ser Tyr Ser  
 500 505 510  
 Glu Met Leu Phe Phe Leu Gln Ser Leu Phe Met Leu Ala Thr Val Val  
 515 520 525  
 Leu Tyr Phe Ser His Leu Lys Glu Tyr Val Ala Ser Met Val Phe Ser  
 530 535 540  
 Leu Ala Leu Gly Trp Thr Asn Met Leu Tyr Tyr Thr Arg Gly Phe Gln  
 545 550 555 560  
 Gln Met Gly Ile Tyr Ala Val Met Ile Glu Lys Met Ile Leu Arg Asp  
 565 570 575  
 Leu Cys Arg Phe Met Phe Val Tyr Ile Val Phe Leu Phe Gly Phe Ser  
 580 585 590  
 Thr Ala Val Val Thr Leu Ile Glu Asp Gly Lys Asn Asp Ser Leu Pro  
 595 600 605  
 Ser Glu Ser Thr Ser His Arg Trp Arg Gly Pro Ala Cys Arg Pro Pro  
 610 615 620  
 Asp Ser Ser Tyr Asn Ser Leu Tyr Ser Thr Cys Leu Glu Leu Phe Lys  
 625 630 635 640  
 Phe Thr Ile Gly Met Gly Asp Leu Glu Phe Thr Glu Asn Tyr Asp Phe  
 645 650 655  
 Lys Ala Val Phe Ile Ile Leu Leu Leu Ala Tyr Val Ile Leu Thr Tyr  
 660 665 670  
 Ile Leu Leu Leu Asn Met Leu Ile Ala Leu Met Gly Glu Thr Val Asn  
 675 680 685  
 Lys Ile Ala Gln Glu Ser Lys Asn Ile Trp Lys Leu Gln Arg Ala Ile  
 690 695 700  
 Thr Ile Leu Asp Thr Glu Lys Ser Phe Leu Lys Cys Met Arg Lys Ala  
 705 710 715 720  
 Phe Arg Ser Gly Lys Leu Leu Gln Val Gly Tyr Thr Pro Asp Gly Lys  
 725 730 735

504-10 PCT sequence listing ST.txt

Asp Asp Tyr Arg Trp Cys Phe Arg Val Asp Glu Val Asn Trp Thr Thr  
740 745 750

Trp Asn Thr Asn Val Gly Ile Ile Asn Glu Asp Pro Gly Asn Cys Glu  
755 760 765

Gly Val Lys Arg Thr Leu Ser Phe Ser Leu Arg Ser Ser Arg Val Ser  
770 775 780

Gly Arg His Trp Lys Asn Phe Ala Leu Val Pro Leu Leu Arg Glu Ala  
785 790 795 800

Ser Ala Arg Asp Arg Gln Ser Ala Gln Pro Glu Glu Val Tyr Leu Arg  
805 810 815

Gln Phe Ser Gly Ser Leu Lys Pro Glu Asp Ala Glu Val Phe Lys Ser  
820 825 830

Pro Ala Ala Ser Gly Glu Lys  
835

<210> 8  
<211> 553  
<212> PRT  
<213> Homo sapiens

<400> 8

Met Ala Asp Pro Glu Val Val Val Ser Ser Cys Ser Ser His Glu Glu  
1 5 10 15

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

Leu Leu Glu Asp Gln Met Arg Arg Lys Leu Lys Phe Phe Phe Met Asn  
35 40 45

Pro Cys Glu Lys Phe Trp Ala Arg Gly Arg Lys Pro Trp Lys Leu Ala  
50 55 60

Ile Gln Ile Leu Lys Ile Ala Met Val Thr Ile Gln Leu Val Leu Phe  
65 70 75 80

Gly Leu Ser Asn Gln Met Val Val Ala Phe Lys Glu Glu Asn Thr Ile  
85 90 95

Ala Phe Lys His Leu Phe Leu Lys Gly Tyr Met Asp Arg Met Asp Asp  
100 105 110

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



504-10 PCT sequence listing ST.txt

Ala Val Asn Gln Tyr Leu Gln Leu Tyr Asn Val Ser Val Gly Asn His  
130 135 140

Ala Tyr Glu Asn Lys Gly Thr Lys Gln Ser Ala Met Ala Ile Cys Gln  
145 150 155 160

His Phe Tyr Lys Arg Gly Asn Ile Tyr Pro Gly Asn Asp Thr Phe Asp  
165 170 175

Ile Asp Pro Glu Ile Glu Thr Glu Cys Phe Phe Val Glu Pro Asp Glu  
180 185 190

Pro Phe His Ile Gly Thr Pro Ala Glu Asn Lys Leu Asn Leu Thr Leu  
195 200 205

Asp Phe His Arg Leu Leu Thr Val Glu Leu Gln Phe Lys Leu Lys Ala  
210 215 220

Ile Asn Leu Gln Thr Val Arg His Gln Glu Leu Pro Asp Cys Tyr Asp  
225 230 235 240

Phe Thr Leu Thr Ile Thr Phe Asp Asn Lys Ala His Ser Gly Arg Ile  
245 250 255

Lys Ile Ser Leu Asp Asn Asp Ile Ser Ile Arg Glu Cys Lys Asp Trp  
260 265 270

His Val Ser Gly Ser Ile Gln Lys Asn Thr His Tyr Met Met Ile Phe  
275 280 285

Asp Ala Phe Val Ile Leu Thr Cys Leu Val Ser Leu Ile Leu Cys Ile  
290 295 300

Arg Ser Val Ile Arg Gly Leu Gln Leu Gln Gln Glu Phe Val Asn Phe  
305 310 315 320

Phe Leu Leu His Tyr Lys Lys Glu Val Ser Val Ser Asp Gln Met Glu  
325 330 335

Phe Val Asn Gly Trp Tyr Ile Met Ile Ile Ile Ser Asp Ile Leu Thr  
340 345 350

Ile Ile Gly Ser Ile Leu Lys Met Glu Ile Gln Ala Lys Ser Leu Thr  
355 360 365

Ser Tyr Asp Val Cys Ser Ile Leu Leu Gly Thr Ser Thr Met Leu Val  
370 375 380

Trp Leu Gly Val Ile Arg Tyr Leu Gly Phe Phe Ala Lys Tyr Asn Leu  
385 390 395 400

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Leu Ile Leu Thr Leu Gln Ala Ala Leu Pro Asn Val Ile Arg Phe Cys  
405 410 415

Cys Cys Ala Ala Met Ile Tyr Leu Gly Tyr Cys Phe Cys Gly Trp Ile  
420 425 430

Val Leu Gly Pro Tyr His Asp Lys Phe Arg Ser Leu Asn Met Val Ser  
435 440 445

Glu Cys Leu Phe Ser Leu Ile Asn Gly Asp Asp Met Phe Ala Thr Phe  
450 455 460

Ala Lys Met Gln Gln Lys Ser Tyr Leu Val Trp Leu Phe Ser Arg Ile  
465 470 475 480

Tyr Leu Tyr Ser Phe Ile Ser Leu Phe Ile Tyr Met Ile Leu Ser Leu  
485 490 495

Phe Ile Ala Leu Ile Thr Asp Thr Tyr Glu Thr Ile Lys Gln Tyr Gln  
500 505 510

Gln Asp Gly Phe Pro Glu Thr Glu Leu Arg Thr Phe Ile Ser Glu Cys  
515 520 525

Lys Asp Leu Pro Asn Ser Gly Lys Tyr Arg Leu Glu Asp Asp Pro Pro  
530 535 540

Val Ser Leu Phe Cys Cys Cys Lys Lys  
545 550