

161102_Sequence listing Nachanmeldung Macadamia_ST25
SEQUENCE LISTING

<110> EUROIMMUN Medizinische Labordiagnostika AG

<120> A novel macadamia allergen

<130> 15PP017EP2

<160> 10

<170> PatentIn version 3.5

<210> 1

<211> 177

<212> PRT

<213> Artificial Sequence

<220>

<223> artificial sequence

<400> 1

Gln Cys Met Gln Leu Glu Thr Ser Gly Gln Met Arg Arg Cys Val Ser
1 5 10 15

Gln Cys Asp Lys Arg Phe Glu Glu Asp Ile Asp Trp Ser Lys Tyr Asp
20 25 30

Asn Gln Glu Asp Pro Gln Thr Glu Cys Gln Gln Cys Gln Arg Arg Cys
35 40 45

Arg Gln Gln Glu Ser Asp Pro Arg Gln Gln Gln Tyr Cys Gln Arg Arg
50 55 60

Cys Lys Glu Ile Cys Glu Glu Glu Glu Glu Tyr Asn Arg Gln Arg Asp
65 70 75 80

Pro Gln Gln Gln Tyr Glu Gln Cys Gln Lys Arg Cys Gln Arg Arg Glu
85 90 95

Thr Glu Pro Arg His Met Gln Ile Cys Gln Gln Arg Cys Glu Arg Arg
100 105 110

Tyr Glu Lys Glu Lys Arg Lys Gln Gln Lys Arg Tyr Glu Glu Gln Gln
115 120 125

Arg Glu Asp Glu Glu Lys Tyr Glu Glu Arg Met Lys Glu Gly Asp Asn
130 135 140

Lys Arg Asp Pro Gln Gln Arg Glu Tyr Glu Asp Cys Arg Arg His Cys
145 150 155 160

Glu Gln Gln Glu Pro Arg Leu Gln Tyr Gln Cys Gln Arg Arg Cys Gln
165 170 175

Glu

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<210> 2
 <211> 645
 <212> PRT
 <213> artificial sequence

<220>
 <223> artificial sequence

<400> 2

Met Ser His His His His His His His Leu Glu Val Leu Phe Gln
 1 5 10 15

Gly Pro Ser Met Gln Cys Met Gln Leu Glu Thr Ser Gly Gln Met Arg
 20 25 30

Arg Cys Val Ser Gln Cys Asp Lys Arg Phe Glu Glu Asp Ile Asp Trp
 35 40 45

Ser Lys Tyr Asp Asn Gln Glu Asp Pro Gln Thr Glu Cys Gln Gln Cys
 50 55 60

Gln Arg Arg Cys Arg Gln Gln Glu Ser Asp Pro Arg Gln Gln Gln Tyr
 65 70 75 80

Cys Gln Arg Arg Cys Lys Glu Ile Cys Glu Glu Glu Glu Glu Tyr Asn
 85 90 95

Arg Gln Arg Asp Pro Gln Gln Gln Tyr Glu Gln Cys Gln Lys Arg Cys
 100 105 110

Gln Arg Arg Glu Thr Glu Pro Arg His Met Gln Ile Cys Gln Gln Arg
 115 120 125

Cys Glu Arg Arg Tyr Glu Lys Glu Lys Arg Lys Gln Gln Lys Arg Tyr
 130 135 140

Glu Glu Gln Gln Arg Glu Asp Glu Glu Lys Tyr Glu Glu Arg Met Lys
 145 150 155 160

Glu Gly Asp Asn Lys Arg Asp Pro Gln Gln Arg Glu Tyr Glu Asp Cys
 165 170 175

Arg Arg His Cys Glu Gln Gln Glu Pro Arg Leu Gln Tyr Gln Cys Gln
 180 185 190

Arg Arg Cys Gln Glu Gln Gln Arg Gln His Gly Arg Gly Gly Asp Leu
 195 200 205

Met Asn Pro Gln Arg Gly Gly Ser Gly Arg Tyr Glu Glu Gly Glu Glu
 210 215 220

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Lys Gln Ser Asp Asn Pro Tyr Tyr Phe Asp Glu Arg Ser Leu Ser Thr
 225 230 235 240
 Arg Phe Arg Thr Glu Glu Gly His Ile Ser Val Leu Glu Asn Phe Tyr
 245 250 255
 Gly Arg Ser Lys Leu Leu Arg Ala Leu Lys Asn Tyr Arg Leu Val Leu
 260 265 270
 Leu Glu Ala Asn Pro Asn Ala Phe Val Leu Pro Thr His Leu Asp Ala
 275 280 285
 Asp Ala Ile Leu Leu Val Ile Gly Gly Arg Gly Ala Leu Lys Met Ile
 290 295 300
 His Arg Asp Asn Arg Glu Ser Tyr Asn Leu Glu Cys Gly Asp Val Ile
 305 310 315 320
 Arg Ile Pro Ala Gly Thr Thr Phe Tyr Leu Ile Asn Arg Asp Asn Asn
 325 330 335
 Glu Arg Leu His Ile Ala Lys Phe Leu Gln Thr Ile Ser Thr Pro Gly
 340 345 350
 Gln Tyr Lys Glu Phe Phe Pro Ala Gly Gly Gln Asn Pro Glu Pro Tyr
 355 360 365
 Leu Ser Thr Phe Ser Lys Glu Ile Leu Glu Ala Ala Leu Asn Thr Gln
 370 375 380
 Thr Glu Arg Leu Arg Gly Val Leu Gly Gln Gln Arg Glu Gly Val Ile
 385 390 395 400
 Ile Arg Ala Ser Gln Glu Gln Ile Arg Glu Leu Thr Arg Asp Asp Ser
 405 410 415
 Glu Ser Arg Arg Trp His Ile Arg Arg Gly Gly Glu Ser Ser Arg Gly
 420 425 430
 Pro Tyr Asn Leu Phe Asn Lys Arg Pro Leu Tyr Ser Asn Lys Tyr Gly
 435 440 445
 Gln Ala Tyr Glu Val Lys Pro Glu Asp Tyr Arg Gln Leu Gln Asp Met
 450 455 460
 Asp Val Ser Val Phe Ile Ala Asn Ile Thr Gln Gly Ser Met Met Gly
 465 470 475 480
 Pro Phe Phe Asn Thr Arg Ser Thr Lys Val Val Val Val Ala Ser Gly
 485 490 495

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Glu Ala Asp Val Glu Met Ala Cys Pro His Leu Ser Gly Arg His Gly
500 505 510

Gly Arg Gly Gly Gly Lys Arg His Glu Glu Glu Glu Glu Val His Tyr
515 520 525

Glu Gln Val Arg Ala Arg Leu Ser Lys Arg Glu Ala Ile Val Val Leu
530 535 540

Ala Gly His Pro Val Val Phe Val Ser Ser Gly Asn Glu Asn Leu Leu
545 550 555 560

Leu Phe Ala Phe Gly Ile Asn Ala Gln Asn Asn His Glu Asn Phe Leu
565 570 575

Ala Gly Arg Glu Arg Asn Val Leu Gln Gln Ile Glu Pro Gln Ala Met
580 585 590

Glu Leu Ala Phe Ala Ala Ser Arg Lys Glu Val Glu Glu Leu Phe Asn
595 600 605

Ser Gln Asp Glu Ser Ile Phe Phe Pro Gly Pro Arg Gln His Gln Gln
610 615 620

Gln Ser Pro Arg Ser Thr Lys Gln Gln Gln Pro Leu Val Ser Ile Leu
625 630 635 640

Asp Phe Val Gly Phe
645

<210> 3
<211> 448
<212> PRT
<213> Hazelnut

<400> 3

Met Leu Pro Lys Glu Asp Pro Glu Leu Lys Lys Cys Lys His Lys Cys
1 5 10 15

Arg Asp Glu Arg Gln Phe Asp Glu Gln Gln Arg Arg Asp Gly Lys Gln
20 25 30

Ile Cys Glu Glu Lys Ala Arg Glu Arg Gln Gln Glu Glu Gly Asn Ser
35 40 45

Ser Glu Glu Ser Tyr Gly Lys Glu Gln Glu Glu Asn Pro Tyr Val Phe
50 55 60

Gln Asp Glu His Phe Glu Ser Arg Val Lys Thr Glu Glu Gly Arg Val
65 70 75 80

Gln Val Leu Glu Asn Phe Thr Lys Arg Ser Arg Leu Leu Ser Gly Ile

Glu Asn Phe Arg Leu Ala Ile Leu Glu Ala Asn Pro His Thr Phe Ile
100 105 110

Ser Pro Ala His Phe Asp Ala Glu Leu Val Leu Phe Val Ala Lys Gly
115 120 125

Arg Ala Thr Ile Thr Met Val Arg Glu Glu Lys Arg Glu Ser Phe Asn
130 135 140

Val Glu His Gly Asp Ile Ile Arg Ile Pro Ala Gly Thr Pro Val Tyr
145 150 155 160

Met Ile Asn Arg Asp Glu Asn Glu Lys Leu Phe Ile Val Lys Ile Leu
165 170 175

Gln Pro Val Ser Ala Pro Gly His Phe Glu Ala Phe Tyr Gly Ala Gly
180 185 190

Gly Glu Asp Pro Glu Ser Phe Tyr Arg Ala Phe Ser Trp Glu Val Leu
195 200 205

Glu Ala Ala Leu Lys Val Arg Arg Glu Gln Leu Glu Lys Val Phe Gly
210 215 220

Glu Gln Ser Lys Gly Ser Ile Val Lys Ala Ser Arg Glu Lys Ile Arg
225 230 235 240

Ala Leu Ser Gln His Glu Glu Gly Pro Pro Arg Ile Trp Pro Phe Gly
245 250 255

Gly Glu Ser Ser Gly Pro Ile Asn Leu Leu His Lys His Pro Ser Gln
260 265 270

Ser Asn Gln Phe Gly Arg Leu Tyr Glu Ala His Pro Asp Asp His Lys
275 280 285

Gln Leu Gln Asp Leu Asp Leu Met Val Ser Phe Ala Asn Ile Thr Lys
290 295 300

Gly Ser Met Ala Gly Pro Tyr Tyr Asn Ser Arg Ala Thr Lys Ile Ser
305 310 315 320

Val Val Val Glu Gly Glu Gly Phe Phe Glu Met Ala Cys Pro His Leu
325 330 335

Ser Ser Ser Ser Gly Ser Tyr Gln Lys Ile Ser Ala Arg Leu Arg Arg
340 345 350

Gly Val Val Phe Val Ala Pro Ala Gly His Pro Val Ala Val Ile Ala

Ser Gln Asn Asn Asn Leu Gln Val Leu Cys Phe Glu Val Asn Ala His
370 375 380

Gly Asn Ser Arg Phe Pro Leu Ala Gly Lys Gly Asn Ile Val Asn Glu
385 390 395 400

Phe Glu Arg Asp Ala Lys Glu Leu Ala Phe Asn Leu Pro Ser Arg Glu
405 410 415

Val Glu Arg Ile Phe Lys Asn Gln Asp Gln Ala Phe Phe Phe Pro Gly
420 425 430

Pro Asn Lys Gln Gln Glu Glu Gly Gly Arg Gly Gly Arg Ala Phe Glu
435 440 445

<210> 4
<211> 562
<212> PRT
<213> sesame

<400> 4

Glu Ser Lys Asp Pro Glu Leu Lys Gln Cys Lys His Gln Cys Lys Ala
1 5 10 15

Gln Gln Gln Ile Ser Lys Glu Gln Lys Glu Ala Cys Ile Gln Ala Cys
20 25 30

Lys Glu Tyr Ile Arg Gln Lys His Gln Gly Glu His Gly Arg Gly Gly
35 40 45

Gly Asp Ile Leu Glu Glu Glu Val Trp Asn Arg Lys Ser Pro Ile Glu
50 55 60

Arg Leu Arg Glu Cys Ser Arg Gly Cys Glu Gln Gln His Gly Glu Gln
65 70 75 80

Arg Glu Glu Cys Leu Arg Arg Cys Gln Glu Glu Tyr Gln Arg Glu Lys
85 90 95

Gly Arg Gln Asp Asp Asp Asn Pro Thr Asp Pro Glu Lys Gln Tyr Gln
100 105 110

Gln Cys Arg Leu Gln Cys Arg Arg Gln Gly Glu Gly Gly Phe Ser
115 120 125

Arg Glu His Cys Glu Arg Arg Arg Glu Glu Lys Tyr Arg Glu Gln Gln
130 135 140

Gly Arg Glu Gly Gly Arg Gly Glu Met Tyr Glu Gly Arg Glu Arg Glu
145 150 155 160

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Glu Glu Gln Glu Glu Gln Gly Arg Gly Arg Ile Pro Tyr Val Phe Glu
165 170 175

Asp Gln His Phe Ile Thr Gly Phe Arg Thr Gln His Gly Arg Met Arg
180 185 190

Val Leu Gln Lys Phe Thr Asp Arg Ser Glu Leu Leu Arg Gly Ile Glu
195 200 205

Asn Tyr Arg Val Ala Ile Leu Glu Ala Glu Pro Gln Thr Phe Ile Val
210 215 220

Pro Asn His Trp Asp Ala Glu Ser Val Val Phe Val Ala Lys Gly Arg
225 230 235 240

Gly Thr Ile Ser Leu Val Arg Gln Asp Arg Arg Glu Ser Leu Asn Ile
245 250 255

Lys Gln Gly Asp Ile Leu Lys Ile Asn Ala Gly Thr Thr Ala Tyr Leu
260 265 270

Ile Asn Arg Asp Asn Asn Glu Arg Leu Val Leu Ala Lys Leu Leu Gln
275 280 285

Pro Val Ser Thr Pro Gly Glu Phe Glu Leu Phe Phe Gly Ala Gly Gly
290 295 300

Glu Asn Pro Glu Ser Phe Phe Lys Ser Phe Ser Asp Glu Ile Leu Glu
305 310 315 320

Ala Ala Phe Asn Thr Arg Arg Asp Arg Leu Gln Arg Ile Phe Gly Gln
325 330 335

Gln Arg Gln Gly Val Ile Val Lys Ala Ser Glu Glu Gln Val Arg Ala
340 345 350

Met Ser Arg His Glu Glu Gly Gly Ile Trp Pro Phe Gly Gly Glu Ser
355 360 365

Lys Gly Thr Ile Asn Ile Tyr Gln Gln Arg Pro Thr His Ser Asn Gln
370 375 380

Tyr Gly Gln Leu His Glu Val Asp Ala Ser Gln Tyr Arg Gln Leu Arg
385 390 395 400

Asp Leu Asp Leu Thr Val Ser Leu Ala Asn Ile Thr Gln Gly Ala Met
405 410 415

Thr Ala Pro His Tyr Asn Ser Lys Ala Thr Lys Ile Ala Leu Val Val
420 425 430

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Asp Gly Glu Gly Tyr Phe Glu Met Ala Cys Pro His Met Ser Arg Ser
435 440 445

Arg Gly Ser Tyr Gln Gly Glu Thr Arg Gly Arg Pro Ser Tyr Gln Arg
450 455 460

Val Ala Ser Arg Leu Thr Arg Gly Thr Val Val Ile Ile Pro Ala Gly
465 470 475 480

His Pro Phe Val Ala Val Ala Ser Ser Asn Gln Asn Leu Gln Val Leu
485 490 495

Cys Phe Glu Val Asn Ala Asn Asn Asn Glu Lys Phe Pro Leu Ala Gly
500 505 510

Arg Arg Asn Val Met Asn Gln Leu Glu Arg Glu Ala Lys Glu Leu Ala
515 520 525

Phe Gly Met Pro Ala Arg Glu Val Glu Glu Val Ser Arg Ser Gln Gln
530 535 540

Glu Glu Phe Phe Phe Lys Gly Pro Arg Gln Gln Gln Gln Gly Arg Ala
545 550 555 560

Asp Ala

<210> 5
<211> 626
<212> PRT
<213> peanut

<400> 5

Met Arg Gly Arg Val Ser Pro Leu Met Leu Leu Leu Gly Ile Leu Val
1 5 10 15

Leu Ala Ser Val Ser Ala Thr His Ala Lys Ser Ser Pro Tyr Gln Lys
20 25 30

Lys Thr Glu Asn Pro Cys Ala Gln Arg Cys Leu Gln Ser Cys Gln Gln
35 40 45

Glu Pro Asp Asp Leu Lys Gln Lys Ala Cys Glu Ser Arg Cys Thr Lys
50 55 60

Leu Glu Tyr Asp Pro Arg Cys Val Tyr Asp Pro Arg Gly His Thr Gly
65 70 75 80

Thr Thr Asn Gln Arg Ser Pro Pro Gly Glu Arg Thr Arg Gly Arg Gln
85 90 95

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Pro Gly Asp Tyr Asp Asp Asp Arg Arg Gln Pro Arg Arg Glu Glu Gly
100 105 110
Gly Arg Trp Gly Pro Ala Gly Pro Arg Glu Arg Glu Arg Glu Glu Asp
115 120 125
Trp Arg Gln Pro Arg Glu Asp Trp Arg Arg Pro Ser His Gln Gln Pro
130 135 140
Arg Lys Ile Arg Pro Glu Gly Arg Glu Gly Glu Gln Glu Trp Gly Thr
145 150 155 160
Pro Gly Ser His Val Arg Glu Glu Thr Ser Arg Asn Asn Pro Phe Tyr
165 170 175
Phe Pro Ser Arg Arg Phe Ser Thr Arg Tyr Gly Asn Gln Asn Gly Arg
180 185 190
Ile Arg Val Leu Gln Arg Phe Asp Gln Arg Ser Arg Gln Phe Gln Asn
195 200 205
Leu Gln Asn His Arg Ile Val Gln Ile Glu Ala Lys Pro Asn Thr Leu
210 215 220
Val Leu Pro Lys His Ala Asp Ala Asp Asn Ile Leu Val Ile Gln Gln
225 230 235 240
Gly Gln Ala Thr Val Thr Val Ala Asn Gly Asn Asn Arg Lys Ser Phe
245 250 255
Asn Leu Asp Glu Gly His Ala Leu Arg Ile Pro Ser Gly Phe Ile Ser
260 265 270
Tyr Ile Leu Asn Arg His Asp Asn Gln Asn Leu Arg Val Ala Lys Ile
275 280 285
Ser Met Pro Val Asn Thr Pro Gly Gln Phe Glu Asp Phe Phe Pro Ala
290 295 300
Ser Ser Arg Asp Gln Ser Ser Tyr Leu Gln Gly Phe Ser Arg Asn Thr
305 310 315 320
Leu Glu Ala Ala Phe Asn Ala Glu Phe Asn Glu Ile Arg Arg Val Leu
325 330 335
Leu Glu Glu Asn Ala Gly Gly Glu Gln Glu Glu Arg Gly Gln Arg Arg
340 345 350
Trp Ser Thr Arg Ser Ser Glu Asn Asn Glu Gly Val Ile Val Lys Val
355 360 365

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Ser Lys Glu His Val Glu Glu Leu Thr Lys His Ala Lys Ser Val Ser
370 375 380

Lys Lys Gly Ser Glu Glu Glu Gly Asp Ile Thr Asn Pro Ile Asn Leu
385 390 395 400

Arg Glu Gly Glu Pro Asp Leu Ser Asn Asn Phe Gly Lys Leu Phe Glu
405 410 415

Val Lys Pro Asp Lys Lys Asn Pro Gln Leu Gln Asp Leu Asp Met Met
420 425 430

Leu Thr Cys Val Glu Ile Lys Glu Gly Ala Leu Met Leu Pro His Phe
435 440 445

Asn Ser Lys Ala Met Val Ile Val Val Val Asn Lys Gly Thr Gly Asn
450 455 460

Leu Glu Leu Val Ala Val Arg Lys Glu Gln Gln Gln Arg Gly Arg Arg
465 470 475 480

Glu Glu Glu Glu Asp Glu Asp Glu Glu Glu Glu Gly Ser Asn Arg Glu
485 490 495

Val Arg Arg Tyr Thr Ala Arg Leu Lys Glu Gly Asp Val Phe Ile Met
500 505 510

Pro Ala Ala His Pro Val Ala Ile Asn Ala Ser Ser Glu Leu His Leu
515 520 525

Leu Gly Phe Gly Ile Asn Ala Glu Asn Asn His Arg Ile Phe Leu Ala
530 535 540

Gly Asp Lys Asp Asn Val Ile Asp Gln Ile Glu Lys Gln Ala Lys Asp
545 550 555 560

Leu Ala Phe Pro Gly Ser Gly Glu Gln Val Glu Lys Leu Ile Lys Asn
565 570 575

Gln Lys Glu Ser His Phe Val Ser Ala Arg Pro Gln Ser Gln Ser Gln
580 585 590

Ser Pro Ser Ser Pro Glu Lys Glu Ser Pro Glu Lys Glu Asp Gln Glu
595 600 605

Glu Glu Asn Gln Gly Gly Lys Gly Pro Leu Leu Ser Ile Leu Lys Ala
610 615 620

Phe Asn
625

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<210> 6
 <211> 519
 <212> PRT
 <213> pistachio

<400> 6

Lys Thr Asp Pro Glu Leu Lys Gln Cys Lys His Gln Cys Lys Val Gln
 1 5 10 15

Arg Gln Tyr Asp Glu Glu Gln Lys Glu Gln Cys Ala Lys Gly Cys Glu
 20 25 30

Lys Tyr Tyr Lys Glu Lys Lys Gly Arg Glu Gln Glu Glu Glu Glu
 35 40 45

Glu Glu Trp Gly Ser Gly Arg Gly Arg Gly Asp Glu Phe Ser Thr His
 50 55 60

Glu Pro Gly Glu Lys Arg Leu Ser Gln Cys Met Lys Gln Cys Glu Arg
 65 70 75 80

Gln Asp Gly Gly Gln Gln Lys Gln Leu Cys Arg Phe Arg Cys Gln Glu
 85 90 95

Lys Tyr Lys Lys Glu Arg Arg Glu His Ser Tyr Ser Arg Asp Glu Glu
 100 105 110

Glu Glu Glu Glu Gly Asp Glu Glu Gln Glu Glu Glu Asp Glu Asn Pro
 115 120 125

Tyr Val Phe Glu Asp Glu His Phe Thr Thr Arg Val Lys Thr Glu Gln
 130 135 140

Gly Lys Val Val Val Leu Pro Lys Phe Thr Lys Arg Ser Lys Leu Leu
 145 150 155 160

Arg Gly Leu Glu Lys Tyr Arg Leu Ala Phe Leu Val Ala Asn Pro Gln
 165 170 175

Ala Phe Val Val Pro Asn His Met Asp Ala Asp Ser Ile Phe Phe Val
 180 185 190

Ser Trp Gly Arg Gly Thr Ile Thr Lys Ile Arg Glu Asn Lys Arg Glu
 195 200 205

Ser Met Asn Val Lys Gln Gly Asp Ile Ile Arg Ile Arg Ala Gly Thr
 210 215 220

Pro Phe Tyr Ile Val Asn Thr Asp Glu Asn Glu Lys Leu Tyr Ile Val
 225 230 235 240

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Lys Leu Leu Gln Pro Val Asn Leu Pro Gly His Tyr Glu Val Phe His
245 250 255

Gly Pro Gly Gly Glu Asn Pro Glu Ser Phe Tyr Arg Ala Phe Ser Arg
260 265 270

Glu Val Leu Glu Ala Ala Leu Lys Thr Pro Arg Asp Lys Leu Glu Lys
275 280 285

Leu Phe Glu Lys Gln Asp Glu Gly Ala Ile Val Lys Ala Ser Lys Glu
290 295 300

Gln Ile Arg Ala Met Ser Arg Arg Gly Glu Gly Pro Ser Ile Trp Pro
305 310 315 320

Phe Thr Gly Lys Ser Thr Gly Thr Phe Asn Leu Phe Lys Lys Asp Pro
325 330 335

Ser Gln Ser Asn Asn Tyr Gly Gln Leu Phe Glu Ser Glu Phe Lys Asp
340 345 350

Tyr Pro Pro Leu Gln Glu Leu Asp Ile Met Val Ser Tyr Val Asn Ile
355 360 365

Thr Lys Gly Gly Met Ser Gly Pro Phe Tyr Asn Ser Arg Ala Thr Lys
370 375 380

Ile Ala Ile Val Val Ser Gly Glu Gly Arg Leu Glu Ile Ala Cys Pro
385 390 395 400

His Leu Ser Ser Ser Lys Asn Ser Gly Gln Glu Lys Ser Gly Pro Ser
405 410 415

Tyr Lys Lys Leu Ser Ser Ser Ile Arg Thr Asp Ser Val Phe Val Val
420 425 430

Pro Ala Gly His Pro Phe Val Thr Val Ala Ser Gly Asn Gln Asn Leu
435 440 445

Glu Ile Leu Cys Phe Glu Val Asn Ala Glu Gly Asn Ile Arg Tyr Thr
450 455 460

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

Glu Leu Ala Phe Lys Thr Lys Gly Glu Glu Val Asp Lys Val Phe Gly
485 490 495

Lys Gln Asp Glu Glu Phe Phe Phe Gln Gly Pro Lys Trp Arg Gln His
500 505 510

161102_Sequence listing Nachanmeldung Macadamia_ST25
 Gln Gln Gly Arg Ala Asp Glu
 515

<210> 7
 <211> 512
 <212> PRT
 <213> cashew

<400> 7

Lys Ile Asp Pro Glu Leu Lys Gln Cys Lys His Gln Cys Lys Val Gln
 1 5 10 15

Arg Gln Tyr Asp Glu Gln Gln Lys Glu Gln Cys Val Lys Glu Cys Glu
 20 25 30

Lys Tyr Tyr Lys Glu Lys Lys Gly Arg Glu Arg Glu His Glu Glu Glu
 35 40 45

Glu Glu Glu Trp Gly Thr Gly Gly Val Asp Glu Pro Ser Thr His Glu
 50 55 60

Pro Ala Glu Lys His Leu Ser Gln Cys Met Arg Gln Cys Glu Arg Gln
 65 70 75 80

Glu Gly Gly Gln Gln Lys Gln Leu Cys Arg Phe Arg Cys Gln Glu Arg
 85 90 95

Tyr Lys Lys Glu Arg Gly Gln His Asn Tyr Lys Arg Glu Asp Asp Glu
 100 105 110

Asp Glu Asp Glu Asp Glu Ala Glu Glu Glu Asp Glu Asn Pro Tyr Val
 115 120 125

Phe Glu Asp Glu Asp Phe Thr Thr Lys Val Lys Thr Glu Gln Gly Lys
 130 135 140

Val Val Leu Leu Pro Lys Phe Thr Gln Lys Ser Lys Leu Leu His Ala
 145 150 155 160

Leu Glu Lys Tyr Arg Leu Ala Val Leu Val Ala Asn Pro Gln Ala Phe
 165 170 175

Val Val Pro Ser His Met Asp Ala Asp Ser Ile Phe Phe Val Ser Trp
 180 185 190

Gly Arg Gly Thr Ile Thr Lys Ile Leu Glu Asn Lys Arg Glu Ser Ile
 195 200 205

Asn Val Arg Gln Gly Asp Ile Val Ser Ile Ser Ser Gly Thr Pro Phe
 210 215 220

Tyr Ile Ala Asn Asn Asp Glu Asn Glu Lys Leu Tyr Leu Val Gln Phe

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225 230 235 240
 Leu Arg Pro Val Asn Leu Pro Gly His Phe Glu Val Phe His Gly Pro
 245 250 255
 Gly Gly Glu Asn Pro Glu Ser Phe Tyr Arg Ala Phe Ser Trp Glu Ile
 260 265 270
 Leu Glu Ala Ala Leu Lys Thr Ser Lys Asp Thr Leu Glu Lys Leu Phe
 275 280 285
 Glu Lys Gln Asp Gln Gly Thr Ile Met Lys Ala Ser Lys Glu Gln Ile
 290 295 300
 Arg Ala Met Ser Arg Arg Gly Glu Gly Pro Lys Ile Trp Pro Phe Thr
 305 310 315
 Glu Glu Ser Thr Gly Ser Phe Lys Leu Phe Lys Lys Asp Pro Ser Gln
 325 330 335
 Ser Asn Lys Tyr Gly Gln Leu Phe Glu Ala Glu Arg Ile Asp Tyr Pro
 340 345 350
 Pro Leu Glu Lys Leu Asp Met Val Val Ser Tyr Ala Asn Ile Thr Lys
 355 360 365
 Gly Gly Met Ser Val Pro Phe Tyr Asn Ser Arg Ala Thr Lys Ile Ala
 370 375 380
 Ile Val Val Ser Gly Glu Gly Cys Val Glu Ile Ala Cys Pro His Leu
 385 390 395
 Ser Ser Ser Lys Ser Ser His Pro Ser Tyr Lys Lys Leu Arg Ala Arg
 405 410 415
 Ile Arg Lys Asp Thr Val Phe Ile Val Pro Ala Gly His Pro Phe Ala
 420 425 430
 Thr Val Ala Ser Gly Asn Glu Asn Leu Glu Ile Val Cys Phe Glu Val
 435 440 445
 Asn Ala Glu Gly Asn Ile Arg Tyr Thr Leu Ala Gly Lys Lys Asn Ile
 450 455 460
 Ile Lys Val Met Glu Lys Glu Ala Lys Glu Leu Ala Phe Lys Met Glu
 465 470 475 480
 Gly Glu Glu Val Asp Lys Val Phe Gly Lys Gln Asp Glu Glu Phe Phe
 485 490 495
 Phe Gln Gly Pro Glu Trp Arg Lys Glu Lys Glu Gly Arg Ala Asp Glu

<210> 8
<211> 766
<212> PRT
<213> pecan

<400> 8

Leu Glu Thr Glu Asp Leu Ser Asn Glu Leu Asn Pro His His Asp Pro
1 5 10 15

Glu Ser His Arg Trp Glu Phe Gln Gln Cys Gln Glu Arg Cys Gln His
20 25 30

Glu Glu Arg Gly Gln Arg Gln Ala Gln Gln Cys Gln Arg Arg Cys Glu
35 40 45

Glu Gln Leu Arg Glu Arg Glu Arg Glu Arg Glu Arg Glu Glu Ile Val
50 55 60

Asp Pro Arg Glu Pro Arg Lys Gln Tyr Glu Gln Cys Arg Glu Thr Cys
65 70 75 80

Glu Lys Gln Asp Pro Arg Gln Gln Pro Gln Cys Glu Arg Arg Cys Glu
85 90 95

Arg Gln Phe Gln Glu Gln Gln Glu Arg Glu Arg Arg Glu Arg Arg Arg
100 105 110

Gly Arg Asp Asp Asp Asp Lys Glu Asn Pro Arg Asp Pro Arg Glu Gln
115 120 125

Tyr Arg Gln Cys Glu Glu His Cys Arg Arg Gln Gly Gln Gly Gln Arg
130 135 140

Gln Gln Gln Gln Cys Gln Ser Arg Cys Glu Glu Arg Phe Glu Glu Glu
145 150 155 160

Gln Arg Arg Gln Glu Glu Arg Glu Arg Arg Arg Gly Arg Asp Asn Asp
165 170 175

Asp Glu Glu Asn Pro Arg Asp Pro Arg Glu Gln Tyr Arg Gln Cys Gln
180 185 190

Glu His Cys Arg Arg Gln Gly Gln Gly Gln Arg Gln Gln Gln Cys
195 200 205

Gln Ser Arg Cys Glu Glu Arg Leu Glu Glu Glu Gln Arg Lys Gln Glu
210 215 220

Glu Arg Glu Arg Arg Arg Gly Arg Asp Glu Asp Asp Gln Asn Pro Arg
225 230 235 240

161102_Sequence listing Nachanmeldung Macadamia_ST25

Asp Pro Glu Gln Arg Tyr Glu Gln Cys Gln Gln Gln Cys Glu Arg Gln
 245 250 255
 Arg Arg Gly Gln Glu Gln Gln Leu Cys Arg Arg Arg Cys Glu Gln Gln
 260 265 270
 Arg Gln Gln Glu Glu Arg Glu Arg Gln Arg Gly Arg Asp Arg Gln Asp
 275 280 285
 Pro Gln Gln Gln Tyr His Arg Cys Gln Arg Arg Cys Gln Thr Gln Glu
 290 295 300
 Gln Ser Pro Glu Arg Gln Arg Gln Cys Gln Gln Arg Cys Glu Arg Gln
 305 310 315 320
 Tyr Lys Glu Gln Gln Gly Arg Glu Trp Gly Pro Asp Gln Ala Ser Pro
 325 330 335
 Arg Arg Glu Ser Arg Gly Arg Glu Glu Glu Gln Gln Arg His Asn Pro
 340 345 350
 Tyr Tyr Phe His Ser Gln Gly Leu Arg Ser Arg His Glu Ser Gly Glu
 355 360 365
 Gly Glu Val Lys Tyr Leu Glu Arg Phe Thr Glu Arg Thr Glu Leu Leu
 370 375 380
 Arg Gly Ile Glu Asn Tyr Arg Val Val Ile Leu Glu Ala Asn Pro Asn
 385 390 395 400
 Thr Phe Val Leu Pro Tyr His Lys Asp Ala Glu Ser Val Ile Val Val
 405 410 415
 Thr Arg Gly Arg Ala Thr Leu Thr Phe Val Ser Gln Glu Arg Arg Glu
 420 425 430
 Ser Phe Asn Leu Glu Tyr Gly Asp Val Ile Arg Val Pro Ala Gly Ala
 435 440 445
 Thr Glu Tyr Val Ile Asn Gln Asp Ser Asn Glu Arg Leu Glu Met Val
 450 455 460
 Lys Leu Leu Gln Pro Val Asn Asn Pro Gly Gln Phe Arg Glu Tyr Tyr
 465 470 475 480
 Ala Ala Gly Ala Gln Ser Thr Glu Ser Tyr Leu Arg Val Phe Ser Asn
 485 490 495
 Asp Ile Leu Val Ala Ala Leu Asn Thr Pro Arg Asp Arg Leu Glu Arg
 500 505 510

161102_Sequence listing Nachanmeldung Macadamia_ST25

Phe Phe Asp Gln Gln Glu Gln Arg Glu Gly Val Ile Ile Arg Ala Ser
 515 520 525
 Gln Glu Lys Leu Arg Ala Leu Ser Gln His Ala Met Ser Ala Gly Gln
 530 535 540
 Arg Pro Trp Gly Arg Arg Ser Ser Gly Gly Pro Ile Ser Leu Lys Ser
 545 550 555
 Gln Arg Ser Ser Tyr Ser Asn Gln Phe Gly Gln Phe Phe Glu Ala Cys
 565 570 575
 Pro Glu Glu His Arg Gln Leu Gln Glu Met Asp Val Leu Val Asn Tyr
 580 585 590
 Ala Glu Ile Lys Arg Gly Ala Met Met Val Pro His Tyr Asn Ser Lys
 595 600 605
 Ala Thr Val Val Val Tyr Val Val Glu Gly Thr Gly Arg Phe Glu Met
 610 615 620
 Ala Cys Pro His Asp Val Ser Ser Gln Ser Tyr Glu Tyr Lys Gly Arg
 625 630 635 640
 Arg Glu Gln Glu Glu Glu Glu Ser Ser Thr Gly Gln Phe Gln Lys Val
 645 650 655
 Thr Ala Arg Leu Ala Arg Gly Asp Ile Phe Val Ile Pro Ala Gly His
 660 665 670
 Pro Ile Ala Ile Thr Ala Ser Gln Asn Glu Asn Leu Arg Leu Val Gly
 675 680 685
 Phe Gly Ile Asn Gly Lys Asn Asn Gln Arg Asn Phe Leu Ala Gly Gln
 690 695 700
 Asn Asn Ile Ile Asn Gln Leu Glu Arg Glu Ala Lys Glu Leu Ser Phe
 705 710 715 720
 Asn Met Pro Arg Glu Glu Ile Glu Glu Ile Phe Glu Arg Gln Val Glu
 725 730 735
 Ser Tyr Phe Val Pro Met Glu Arg Gln Ser Arg Arg Gly Gln Gly Arg
 740 745 750
 Asp His Pro Leu Ala Ser Ile Leu Asp Phe Ala Gly Phe Phe
 755 760 765

<210> 9
 <211> 593

161102_Sequence listing Nachanmeldung Macadamia_ST25

<212> PRT
<213> walnut

<400> 9

Arg Gly Arg Asp Asp Asp Asp Glu Glu Asn Pro Arg Asp Pro Arg Glu
1 5 10 15

Gln Tyr Arg Gln Cys Gln Glu Tyr Cys Arg Arg Gln Gly Gln Gly Gln
20 25 30

Arg Gln Gln Gln Gln Cys Gln Ile Arg Cys Glu Glu Arg Leu Glu Glu
35 40 45

Asp Gln Arg Ser Gln Glu Glu Arg Glu Arg Arg Arg Gly Arg Asp Val
50 55 60

Asp Asp Gln Asn Pro Arg Asp Pro Glu Gln Arg Tyr Glu Gln Cys Gln
65 70 75 80

Gln Gln Cys Glu Arg Gln Arg Arg Gly Gln Glu Gln Thr Leu Cys Arg
85 90 95

Arg Arg Cys Glu Gln Arg Arg Gln Gln Glu Glu Arg Glu Arg Gln Arg
100 105 110

Gly Arg Asp Arg Gln Asp Pro Gln Gln Gln Tyr His Arg Cys Gln Arg
115 120 125

Arg Cys Gln Ile Gln Glu Gln Ser Pro Glu Arg Gln Arg Gln Cys Gln
130 135 140

Gln Arg Cys Glu Arg Gln Tyr Lys Glu Gln Gln Gly Arg Glu Arg Gly
145 150 155 160

Pro Glu Ala Ser Pro Arg Arg Glu Ser Arg Gly Arg Glu Glu Glu Gln
165 170 175

Gln Arg His Asn Pro Tyr Tyr Phe His Ser Gln Ser Ile Arg Ser Arg
180 185 190

His Glu Ser Glu Glu Gly Glu Val Lys Tyr Leu Glu Arg Phe Thr Glu
195 200 205

Arg Thr Glu Leu Leu Arg Gly Ile Glu Asn Tyr Arg Val Val Ile Leu
210 215 220

Asp Ala Asn Pro Asn Thr Ser Met Leu Pro His His Lys Asp Ala Glu
225 230 235 240

Ser Val Ala Val Val Thr Arg Gly Arg Ala Thr Leu Thr Leu Val Ser
245 250 255

161102_Sequence listing Nachanmeldung Macadamia_ST25

Gln Glu Thr Arg Glu Ser Phe Asn Leu Glu Cys Gly Asp Val Ile Arg
260 265 270

Val Pro Ala Gly Ala Thr Val Tyr Val Ile Asn Gln Asp Ser Asn Glu
275 280 285

Arg Leu Glu Met Val Lys Leu Leu Gln Pro Val Asn Asn Pro Gly Gln
290 295 300

Phe Arg Glu Tyr Tyr Ala Ala Gly Ala Lys Ser Pro Asp Gln Ser Tyr
305 310 315 320

Leu Arg Val Phe Ser Asn Asp Ile Leu Val Ala Ala Leu Asn Thr Pro
325 330 335

Arg Asp Arg Leu Glu Arg Phe Phe Asp Gln Gln Glu Gln Arg Glu Gly
340 345 350

Val Ile Ile Arg Ala Ser Gln Glu Lys Leu Arg Ala Leu Ser Gln His
355 360 365

Ala Met Ser Ala Gly Gln Arg Pro Trp Gly Arg Arg Ser Ser Gly Gly
370 375 380

Pro Ile Ser Leu Lys Ser Glu Ser Pro Ser Tyr Ser Asn Gln Phe Gly
385 390 395 400

Gln Phe Phe Glu Ala Cys Pro Glu Glu His Arg Gln Leu Gln Glu Met
405 410 415

Asp Val Leu Val Asn Tyr Ala Glu Ile Lys Arg Gly Ala Met Met Val
420 425 430

Pro His Tyr Asn Ser Lys Ala Thr Val Val Val Tyr Val Val Glu Gly
435 440 445

Thr Gly Arg Tyr Glu Met Ala Cys Pro His Val Ser Ser Gln Ser Tyr
450 455 460

Glu Gly Gln Gly Arg Arg Glu Gln Glu Glu Glu Ser Thr Gly Arg
465 470 475 480

Phe Gln Lys Val Thr Ala Arg Leu Ala Arg Gly Asp Ile Phe Val Ile
485 490 495

Pro Ala Gly His Pro Ile Ala Ile Thr Ala Ser Gln Asn Glu Asn Leu
500 505 510

Arg Leu Leu Gly Phe Asp Ile Asn Gly Glu Asn Asn Gln Arg Asp Phe
515 520 525

161102_Sequence listing Nachanmeldung Macadamia_ST25

Leu Ala Gly Gln Asn Asn Ile Ile Asn Gln Leu Glu Arg Glu Ala Lys
530 535 540

Glu Leu Ser Phe Asn Met Pro Arg Glu Glu Ile Glu Glu Ile Phe Glu
545 550 555 560

Ser Gln Met Glu Ser Tyr Phe Val Pro Thr Glu Arg Gln Ser Arg Arg
565 570 575

Gly Gln Gly Arg Asp His Pro Leu Ala Ser Ile Leu Asp Phe Ala Phe
580 585 590

Phe

<210> 10
<211> 625
<212> PRT
<213> Macadamia

<400> 10

Gln Cys Met Gln Leu Glu Thr Ser Gly Gln Met Arg Arg Cys Val Ser
1 5 10 15

Gln Cys Asp Lys Arg Phe Glu Glu Asp Ile Asp Trp Ser Lys Tyr Asp
20 25 30

Asn Gln Glu Asp Pro Gln Thr Glu Cys Gln Gln Cys Gln Arg Arg Cys
35 40 45

Arg Gln Gln Glu Ser Asp Pro Arg Gln Gln Gln Tyr Cys Gln Arg Arg
50 55 60

Cys Lys Glu Ile Cys Glu Glu Glu Glu Glu Tyr Asn Arg Gln Arg Asp
65 70 75 80

Pro Gln Gln Gln Tyr Glu Gln Cys Gln Lys Arg Cys Gln Arg Arg Glu
85 90 95

Thr Glu Pro Arg His Met Gln Ile Cys Gln Gln Arg Cys Glu Arg Arg
100 105 110

Tyr Glu Lys Glu Lys Arg Lys Gln Gln Lys Arg Tyr Glu Glu Gln Gln
115 120 125

Arg Glu Asp Glu Glu Lys Tyr Glu Glu Arg Met Lys Glu Gly Asp Asn
130 135 140

Lys Arg Asp Pro Gln Gln Arg Glu Tyr Glu Asp Cys Arg Arg His Cys
145 150 155 160

161102_Sequence listing Nachanmeldung Macadamia_ST25

Glu Gln Gln Glu Pro Arg Leu Gln Tyr Gln Cys Gln Arg Arg Cys Gln
165 170 175

Glu Gln Gln Arg Gln His Gly Arg Gly Gly Asp Leu Met Asn Pro Gln
180 185 190

Arg Gly Gly Ser Gly Arg Tyr Glu Glu Gly Glu Glu Lys Gln Ser Asp
195 200 205

Asn Pro Tyr Tyr Phe Asp Glu Arg Ser Leu Ser Thr Arg Phe Arg Thr
210 215 220

Glu Glu Gly His Ile Ser Val Leu Glu Asn Phe Tyr Gly Arg Ser Lys
225 230 235 240

Leu Leu Arg Ala Leu Lys Asn Tyr Arg Leu Val Leu Leu Glu Ala Asn
245 250 255

Pro Asn Ala Phe Val Leu Pro Thr His Leu Asp Ala Asp Ala Ile Leu
260 265 270

Leu Val Ile Gly Gly Arg Gly Ala Leu Lys Met Ile His Arg Asp Asn
275 280 285

Arg Glu Ser Tyr Asn Leu Glu Cys Gly Asp Val Ile Arg Ile Pro Ala
290 295 300

Gly Thr Thr Phe Tyr Leu Ile Asn Arg Asp Asn Asn Glu Arg Leu His
305 310 315 320

Ile Ala Lys Phe Leu Gln Thr Ile Ser Thr Pro Gly Gln Tyr Lys Glu
325 330 335

Phe Phe Pro Ala Gly Gly Gln Asn Pro Glu Pro Tyr Leu Ser Thr Phe
340 345 350

Ser Lys Glu Ile Leu Glu Ala Ala Leu Asn Thr Gln Thr Glu Arg Leu
355 360 365

Arg Gly Val Leu Gly Gln Gln Arg Glu Gly Val Ile Ile Arg Ala Ser
370 375 380

Gln Glu Gln Ile Arg Glu Leu Thr Arg Asp Asp Ser Glu Ser Arg Arg
385 390 395 400

Trp His Ile Arg Arg Gly Gly Glu Ser Ser Arg Gly Pro Tyr Asn Leu
405 410 415

Phe Asn Lys Arg Pro Leu Tyr Ser Asn Lys Tyr Gly Gln Ala Tyr Glu
420 425 430

161102_Sequence listing Nachanmeldung Macadamia_ST25

Val Lys Pro Glu Asp Tyr Arg Gln Leu Gln Asp Met Asp Val Ser Val
435 440 445

Phe Ile Ala Asn Ile Thr Gln Gly Ser Met Met Gly Pro Phe Phe Asn
450 455 460

Thr Arg Ser Thr Lys Val Val Val Val Ala Ser Gly Glu Ala Asp Val
465 470 475 480

Glu Met Ala Cys Pro His Leu Ser Gly Arg His Gly Gly Arg Gly Gly
485 490 495

Gly Lys Arg His Glu Glu Glu Glu Glu Val His Tyr Glu Gln Val Arg
500 505 510

Ala Arg Leu Ser Lys Arg Glu Ala Ile Val Val Leu Ala Gly His Pro
515 520 525

Val Val Phe Val Ser Ser Gly Asn Glu Asn Leu Leu Leu Phe Ala Phe
530 535 540

Gly Ile Asn Ala Gln Asn Asn His Glu Asn Phe Leu Ala Gly Arg Glu
545 550 555 560

Arg Asn Val Leu Gln Gln Ile Glu Pro Gln Ala Met Glu Leu Ala Phe
565 570 575

Ala Ala Ser Arg Lys Glu Val Glu Glu Leu Phe Asn Ser Gln Asp Glu
580 585 590

Ser Ile Phe Phe Pro Gly Pro Arg Gln His Gln Gln Gln Ser Pro Arg
595 600 605

Ser Thr Lys Gln Gln Gln Pro Leu Val Ser Ile Leu Asp Phe Val Gly
610 615 620

Phe
625