

# SEQUENCE LISTING

<110> Novozymes A/S

<120> DETOXIFICATION OF FEED PRODUCTS

<130> 11401.204-WO

<160> 7

<170> PatentIn version 3.5

<210> 1

<211> 520

<212> PRT

<213> H. insolens

<220>

<221> mat\_peptide

<222> (1)..(194)

<400> 1

Met	Ser	Arg	Phe	His	Ser	Leu	Leu	Ala	Phe	Val	Val	Ala	Ser	Leu	Thr
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Ala	Val	Ala	His	Ala	Gly	Ile	Gly	Pro	Val	Ala	Asp	Leu	Thr	Ile	Thr
			20					25					30		

Asn	Ala	Ala	Val	Ser	Pro	Asp	Gly	Phe	Ser	Arg	Gln	Ala	Val	Val	Val
		35					40					45			

Asn	Gly	Gly	Thr	Pro	Gly	Pro	Leu	Ile	Thr	Gly	Asn	Met	Gly	Asp	Arg
	50					55					60				

Phe	Gln	Leu	Asn	Val	Ile	Asp	Asn	Leu	Thr	Asn	His	Thr	Met	Val	Lys
65					70					75					80

Ser	Thr	Ser	Ile	His	Trp	His	Gly	Phe	Phe	Gln	Lys	Gly	Thr	Asn	Trp
				85					90					95	

Ala	Asp	Gly	Pro	Ala	Phe	Ile	Asn	Gln	Cys	Pro	Ile	Ser	Ser	Gly	His
			100					105						110	

Ser	Phe	Leu	Tyr	Asp	Phe	Gln	Val	Pro	Asp	Gln	Ala	Gly	Thr	Phe	Trp
		115					120					125			

Tyr	His	Ser	His	Leu	Ser	Thr	Gln	Tyr	Cys	Asp	Gly	Leu	Arg	Gly	Pro
	130					135					140				

Phe	Val	Val	Tyr	Asp	Pro	Asn	Asp	Pro	Ala	Ala	Asp	Leu	Tyr	Asp	Val
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

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

Ile Glu Ile Ser Phe Pro Ala Thr Ala Ala Ala Pro Gly Ala Pro His  
405 410 415

Pro Phe His Leu His Gly His Ala Phe Ala Val Val Arg Ser Ala Gly  
420 425 430

Ser Thr Val Tyr Asn Tyr Asp Asn Pro Ile Phe Arg Asp Val Val Ser  
435 440 445

Thr Gly Thr Pro Ala Ala Gly Asp Asn Val Thr Ile Arg Phe Arg Thr  
450 455 460

Asp Asn Pro Gly Pro Trp Phe Leu His Cys His Ile Asp Phe His Leu  
465 470 475 480

Glu Ala Gly Phe Ala Val Val Phe Ala Glu Asp Ile Pro Asp Val Ala  
485 490 495

Ser Ala Asn Pro Val Pro Gln Ala Trp Ser Asp Leu Cys Pro Thr Tyr  
500 505 510

Asp Ala Leu Asp Pro Ser Asp Gln  
515 520

<210> 2  
<211> 199  
<212> PRT  
<213> Fusarium solani pisi

<220>  
<221> mat\_peptide  
<222> (1)..(199)

<400> 2

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Ala Asp Val Ile Phe Ile Tyr Ala Arg Gly Ser Thr Glu Thr Gly Asn  
20 25 30

Leu Gly Thr Leu Gly Pro Ser Ile Ala Ser Asn Leu Glu Ser Ala Phe  
35 40 45

Gly Lys Asp Gly Val Trp Ile Gln Gly Val Gly Gly Ala Tyr Arg Ala  
50 55 60

Thr Leu Gly Asp Asn Ala Leu Pro Arg Gly Thr Ser Ser Ala Ala Ile  
65 70 75 80

Arg Glu Met Leu Gly Leu Phe Gln Gln Ala Asn Thr Lys Cys Pro Asp  
85 90 95

Ala Thr Leu Ile Ala Gly Gly Tyr Ser Gln Gly Ala Ala Leu Ala Ala  
100 105 110

Ala Ser Ile Glu Asp Leu Asp Ser Ala Ile Arg Asp Lys Ile Ala Gly  
115 120 125

Thr Val Leu Phe Gly Tyr Thr Lys Asn Leu Gln Asn Arg Gly Arg Ile  
130 135 140

Pro Asn Tyr Pro Ala Asp Arg Thr Lys Val Phe Cys Asn Thr Gly Asp  
145 150 155 160

Leu Val Cys Thr Gly Ser Leu Ile Val Ala Ala Pro His Leu Ala Tyr  
165 170 175

Gly Pro Asp Ala Arg Gly Pro Ala Pro Glu Phe Leu Ile Glu Lys Val  
180 185 190

Arg Ala Val Arg Gly Ser Ala  
195

<210> 3  
<211> 620  
<212> PRT  
<213> Myceliophthora thermophila

<400> 3

Met Lys Ser Phe Ile Ser Ala Ala Thr Leu Leu Val Gly Ile Leu Thr  
1 5 10 15

Pro Ser Val Ala Ala Ala Pro Pro Ser Thr Pro Glu Gln Arg Asp Leu  
20 25 30

Leu Val Pro Ile Thr Glu Arg Glu Glu Ala Ala Val Lys Ala Arg Gln  
35 40 45

Gln Ser Cys Asn Thr Pro Ser Asn Arg Ala Cys Trp Thr Asp Gly Tyr  
50 55 60

Asp Ile Asn Thr Asp Tyr Glu Val Asp Ser Pro Asp Thr Gly Val Val

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

Asp Val Val Ile Glu Ala Asn Arg Thr Pro Gly Asn Tyr Trp Phe Asn  
325 330 335

Val Thr Phe Gly Gly Gly Leu Leu Cys Gly Gly Ser Arg Asn Pro Tyr  
340 345 350

Pro Ala Ala Ile Phe His Tyr Ala Gly Ala Pro Gly Gly Pro Pro Thr  
355 360 365

Asp Glu Gly Lys Ala Pro Val Asp His Asn Cys Leu Asp Leu Pro Asn  
370 375 380

Leu Lys Pro Val Val Ala Arg Asp Val Pro Leu Ser Gly Phe Ala Lys  
385 390 395 400

Arg Ala Asp Asn Thr Leu Asp Val Thr Leu Asp Thr Thr Gly Thr Pro  
405 410 415

Leu Phe Val Trp Lys Val Asn Gly Ser Ala Ile Asn Ile Asp Trp Gly  
420 425 430

Arg Ala Val Val Asp Tyr Val Leu Thr Gln Asn Thr Ser Phe Pro Pro  
435 440 445

Gly Tyr Asn Ile Val Glu Val Asn Gly Ala Asp Gln Trp Ser Tyr Trp  
450 455 460

Leu Ile Glu Asn Asp Pro Gly Ala Pro Phe Thr Leu Pro His Pro Met  
465 470 475 480

His Leu His Gly His Asp Phe Tyr Val Leu Gly Arg Ser Pro Asp Glu  
485 490 495

Ser Pro Ala Ser Asn Glu Arg His Val Phe Asp Pro Ala Arg Asp Ala  
500 505 510

Gly Leu Leu Ser Gly Ala Asn Pro Val Arg Arg Asp Val Ser Met Leu  
515 520 525

Pro Ala Phe Gly Trp Val Val Leu Ser Phe Arg Ala Asp Asn Pro Gly  
530 535 540

Ala Trp Leu Phe His Cys His Ile Ala Trp His Val Ser Gly Gly Leu  
545 550 555 560

Gly Val Val Tyr Leu Glu Arg Ala Asp Asp Leu Arg Gly Ala Val Ser  
565 570 575

Asp Ala Asp Ala Asp Asp Leu Asp Arg Leu Cys Ala Asp Trp Arg Arg  
580 585 590

Tyr Trp Pro Thr Asn Pro Tyr Pro Lys Ser Asp Ser Gly Leu Lys His  
595 600 605

Arg Trp Val Glu Glu Gly Glu Trp Leu Val Lys Ala  
610 615 620

<210> 4

<211> 520

<212> PRT

<213> Polyporus pinsitus

<400> 4

Met Ser Arg Phe His Ser Leu Leu Ala Phe Val Val Ala Ser Leu Thr  
1 5 10 15

Ala Val Ala His Ala Gly Ile Gly Pro Val Ala Asp Leu Thr Ile Thr  
20 25 30

Asn Ala Ala Val Ser Pro Asp Gly Phe Ser Arg Gln Ala Val Val Val  
35 40 45

Asn Gly Gly Thr Pro Gly Pro Leu Ile Thr Gly Asn Met Gly Asp Arg  
50 55 60

Phe Gln Leu Asn Val Ile Asp Asn Leu Thr Asn His Thr Met Val Lys  
65 70 75 80

Ser Thr Ser Ile His Trp His Gly Phe Phe Gln Lys Gly Thr Asn Trp  
85 90 95

Ala Asp Gly Pro Ala Phe Ile Asn Gln Cys Pro Ile Ser Ser Gly His  
100 105 110

Ser Phe Leu Tyr Asp Phe Gln Val Pro Asp Gln Ala Gly Thr Phe Trp  
115 120 125

Tyr His Ser His Leu Ser Thr Gln Tyr Cys Asp Gly Leu Arg Gly Pro  
130 135 140

Phe Val Val Tyr Asp Pro Asn Asp Pro Ala Ala Asp Leu Tyr Asp Val

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

Ile Glu Ile Ser Phe Pro Ala Thr Ala Ala Ala Pro Gly Ala Pro His  
405 410 415

Pro Phe His Leu His Gly His Ala Phe Ala Val Val Arg Ser Ala Gly  
420 425 430

Ser Thr Val Tyr Asn Tyr Asp Asn Pro Ile Phe Arg Asp Val Val Ser  
435 440 445

Thr Gly Thr Pro Ala Ala Gly Asp Asn Val Thr Ile Arg Phe Arg Thr  
450 455 460

Asp Asn Pro Gly Pro Trp Phe Leu His Cys His Ile Asp Phe His Leu  
465 470 475 480

Glu Ala Gly Phe Ala Val Val Phe Ala Glu Asp Ile Pro Asp Val Ala  
485 490 495

Ser Ala Asn Pro Val Pro Gln Ala Trp Ser Asp Leu Cys Pro Thr Tyr  
500 505 510

Asp Ala Leu Asp Pro Ser Asp Gln  
515 520

<210> 5  
<211> 343  
<212> PRT  
<213> Streptomyces coelicolor

<400> 5

Met Asp Arg Arg Gly Phe Asn Arg Arg Val Leu Leu Gly Gly Ala Ala  
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Ala Ala Thr Ser Leu Ser Ile Ala Pro Glu Val Ala Gly Ala Ala Pro  
20 25 30

Ala Ala Lys Gly Ile Thr Ala Arg Thr Ala Pro Ala Gly Gly Glu Val  
35 40 45

Arg His Leu Lys Met Tyr Ala Glu Lys Leu Ala Asp Gly Gln Met Gly  
50 55 60

Tyr Gly Phe Glu Lys Gly Lys Ala Ser Val Pro Gly Pro Leu Ile Glu  
65 70 75 80

Val Asn Glu Gly Asp Thr Leu His Ile Glu Phe Thr Asn Thr Met Asp  
85 90 95

Val Arg Ala Ser Leu His Val His Gly Leu Asp Tyr Glu Ile Ser Ser  
100 105 110

Asp Gly Thr Ala Met Asn Lys Ser Asp Val Glu Pro Gly Gly Thr Arg  
115 120 125

Thr Tyr Thr Trp Arg Thr His Lys Pro Gly Arg Arg Asp Asp Gly Thr  
130 135 140

Trp Arg Pro Gly Ser Ala Gly Tyr Trp His Tyr His Asp His Val Val  
145 150 155 160

Gly Thr Glu His Gly Thr Gly Gly Ile Arg Asn Gly Leu Tyr Gly Pro  
165 170 175

Val Ile Val Arg Arg Lys Gly Asp Val Leu Pro Asp Ala Thr His Thr  
180 185 190

Ile Val Phe Asn Asp Met Thr Ile Asn Asn Arg Lys Pro His Thr Gly  
195 200 205

Pro Asp Phe Glu Ala Thr Val Gly Asp Arg Val Glu Ile Val Met Ile  
210 215 220

Thr His Gly Glu Tyr Tyr His Thr Phe His Met His Gly His Arg Trp  
225 230 235 240

Ala Asp Asn Arg Thr Gly Ile Leu Thr Gly Pro Asp Asp Pro Ser Arg  
245 250 255

Val Ile Asp Asn Lys Ile Thr Gly Pro Ala Asp Ser Phe Gly Phe Gln  
260 265 270

Ile Ile Ala Gly Glu Gly Val Gly Ala Gly Ala Trp Met Tyr His Cys  
275 280 285

His Val Gln Ser His Ser Asp Met Gly Met Val Gly Leu Phe Leu Val  
290 295 300

Lys Lys Pro Asp Gly Thr Ile Pro Gly Tyr Glu Pro His Glu His Gly  
305 310 315 320

Gly Ala Thr Ala Lys Ser Gly Glu Ser Gly Glu Pro Thr Gly Gly Ala

325

330

335

Ala Ala His Glu His Glu His  
340

&lt;210&gt; 6

&lt;211&gt; 555

&lt;212&gt; PRT

<213> *Aspergillus oryzae*

&lt;400&gt; 6

Met Arg Gly Tyr Glu Phe Leu Ser Val Leu Pro Leu Val Ala Ala Ser  
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Trp Ala Leu Pro Gly Ser Thr Pro Ala Ser Val Gly Arg Arg Gln Leu  
20 25 30

Pro Lys Asn Pro Thr Gly Val Lys Thr Leu Thr Thr Ala Asn Asn Val  
35 40 45

Thr Ile Arg Tyr Lys Glu Pro Gly Ala Glu Gly Val Cys Glu Thr Thr  
50 55 60

Pro Gly Val Lys Ser Tyr Ser Gly Tyr Val Asp Thr Ser Pro Glu Ser  
65 70 75 80

His Thr Phe Phe Trp Phe Phe Glu Ala Arg His Asn Pro Glu Thr Ala  
85 90 95

Pro Ile Thr Leu Trp Leu Asn Gly Gly Pro Gly Ser Asp Ser Leu Ile  
100 105 110

Gly Leu Phe Glu Glu Leu Gly Pro Cys His Val Asn Ser Thr Phe Asp  
115 120 125

Asp Tyr Ile Asn Pro His Ser Trp Asn Glu Val Ser Asn Leu Leu Phe  
130 135 140

Leu Ser Gln Pro Leu Gly Val Gly Phe Ser Tyr Ser Asp Thr Val Asp  
145 150 155 160

Gly Ser Ile Asn Pro Val Thr Gly Val Val Glu Asn Ser Ser Phe Ala  
165 170 175

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

Thr Asn Leu Ala Ala Glu Ala Ala Trp Glu Ile Leu Gln Gly Phe Leu  
195 200 205

Ser Gly Leu Pro Ser Leu Asp Ser Arg Val Gln Ser Lys Asp Phe Ser  
210 215 220

Leu Trp Thr Glu Ser Tyr Gly Gly His Tyr Gly Pro Ala Phe Phe Asn  
225 230 235 240

His Phe Tyr Glu Gln Asn Glu Arg Ile Ala Asn Gly Ser Val Asn Gly  
245 250 255

Val Gln Leu Asn Phe Asn Ser Leu Gly Ile Ile Asn Gly Ile Ile Asp  
260 265 270

Glu Ala Ile Gln Ala Pro Tyr Tyr Pro Glu Phe Ala Val Asn Asn Thr  
275 280 285

Tyr Gly Ile Lys Ala Val Asn Glu Thr Val Tyr Asn Tyr Met Lys Phe  
290 295 300

Ala Asn Gln Met Pro Asn Gly Cys Gln Asp Leu Ile Ser Thr Cys Lys  
305 310 315 320

Gln Thr Asn Arg Thr Ala Leu Ala Asp Tyr Ala Leu Cys Ala Glu Ala  
325 330 335

Thr Asn Met Cys Arg Asp Asn Val Glu Gly Pro Tyr Tyr Ala Phe Ala  
340 345 350

Gly Arg Gly Val Tyr Asp Ile Arg His Pro Tyr Asp Asp Pro Thr Pro  
355 360 365

Pro Ser Tyr Tyr Asn Lys Phe Leu Ala Lys Asp Ser Val Met Asp Ala  
370 375 380

Ile Gly Val Asn Ile Asn Tyr Thr Gln Ser Asn Asn Asp Val Tyr Tyr  
385 390 395 400

Ala Phe Gln Gln Thr Gly Asp Phe Val Trp Pro Asn Phe Ile Glu Asp  
405 410 415

Leu Glu Glu Ile Leu Ala Leu Pro Val Arg Val Ser Leu Ile Tyr Gly  
420 425 430

Asp Ala Asp Tyr Ile Cys Asn Trp Phe Gly Gly Gln Ala Val Ser Leu  
435 440 445

Ala Ala Asn Tyr Ser Gln Ala Ala Gln Phe Arg Ser Ala Gly Tyr Thr  
450 455 460

Pro Leu Lys Val Asn Gly Val Glu Tyr Gly Glu Thr Arg Glu Tyr Gly  
465 470 475 480

Asn Phe Ser Phe Thr Arg Val Tyr Glu Ala Gly His Glu Val Pro Tyr  
485 490 495

Tyr Gln Pro Ile Ala Ser Leu Gln Leu Phe Asn Arg Thr Ile Phe Gly  
500 505 510

Trp Asp Ile Ala Glu Gly Gln Lys Lys Ile Trp Pro Ser Tyr Lys Thr  
515 520 525

Asn Gly Thr Ala Thr Ala Thr His Thr Gln Ser Ser Val Pro Leu Pro  
530 535 540

Thr Ala Thr Ser Met Ser Ser Val Gly Met Ala  
545 550 555

<210> 7  
<211> 542  
<212> PRT  
<213> Aspegillus oryzae

<400> 7

Met Arg Val Leu Pro Ala Thr Leu Leu Val Gly Ala Ala Ser Ala Ala  
1 5 10 15

Val Pro Pro Leu Gln Gln Val Leu Gly Arg Pro Glu Glu Gly Met Ser  
20 25 30

Phe Ser Lys Pro Leu His Ala Phe Gln Glu Gln Leu Lys Thr Leu Ser  
35 40 45

Glu Asp Ala Arg Lys Leu Trp Asp Glu Val Ala Asn Tyr Phe Pro Asp  
50 55 60

Ser Met Asp His Ser Pro Ile Phe Ser Leu Pro Lys Lys His Thr Arg  
65 70 75 80

Arg Pro Asp Ser His Trp Asp His Ile Val Arg Gly Ser Asp Val Gln  
85 90 95

Lys Ile Trp Val Asn Asn Ala Asp Gly Glu Lys Glu Arg Glu Ile Asp  
100 105 110

Gly Lys Leu Glu Ala Tyr Asp Leu Arg Ile Lys Lys Ala Asp Pro Ser  
115 120 125

Ala Leu Gly Ile Asp Pro Asn Val Lys Gln Tyr Thr Gly Tyr Leu Asp  
130 135 140

Asp Asn Gly Asn Asp Lys His Leu Phe Tyr Trp Phe Phe Glu Ser Arg  
145 150 155 160

Asn Asp Pro Lys Asn Asp Pro Val Val Leu Trp Leu Asn Gly Gly Pro  
165 170 175

Gly Cys Ser Ser Leu Thr Gly Leu Phe Met Glu Leu Gly Pro Ser Ser  
180 185 190

Ile Asp Glu Asn Ile Lys Pro Val Tyr Asn Asp Phe Ser Trp Asn Ser  
195 200 205

Asn Ala Ser Val Ile Phe Leu Asp Gln Pro Val Asn Val Gly Tyr Ser  
210 215 220

Tyr Ser Gly Ser Ala Val Ser Asp Thr Val Ala Ala Gly Lys Asp Val  
225 230 235 240

Tyr Ala Leu Leu Ser Leu Phe Phe Lys Gln Phe Pro Glu Tyr Ala Glu  
245 250 255

Gln Asp Phe His Ile Ala Gly Glu Ser Tyr Ala Gly His Tyr Ile Pro  
260 265 270

Val Phe Ala Ser Glu Ile Leu Ala His Lys Asn Arg Asn Ile Asn Leu  
275 280 285

Lys Ser Val Leu Ile Gly Asn Gly Leu Thr Asp Gly Leu Thr Gln Tyr  
290 295 300

Gly Tyr Tyr Arg Pro Met Gly Cys Gly Glu Gly Gly Tyr Lys Ala Val  
305 310 315 320

Leu Asp Glu Ala Thr Cys Glu Ser Met Asp Asn Ala Leu Pro Arg Cys  
325 330 335

Arg Ser Met Ile Glu Ser Cys Tyr Asn Ser Glu Ser Ala Trp Val Cys  
340 345 350

Val Pro Ala Ser Ile Tyr Cys Asn Asn Ala Leu Ile Gly Pro Tyr Gln  
355 360 365

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

Ser Asn Leu Cys Tyr Lys Gly Met Gly Tyr Val Ser Glu Tyr Leu Asn  
385 390 395 400

Lys Ala Glu Val Arg Glu Ala Val Gly Ala Glu Val Gly Gly Tyr Asp  
405 410 415

Ser Cys Asn Phe Asp Ile Asn Arg Asn Phe Leu Phe His Gly Asp Trp  
420 425 430

Met Lys Pro Tyr His Arg Leu Val Pro Gly Leu Leu Glu Gln Ile Pro  
435 440 445

Val Leu Ile Tyr Ala Gly Asp Ala Asp Tyr Ile Cys Asn Trp Leu Gly  
450 455 460

Asn Lys Ala Trp Thr Glu Ala Leu Glu Trp Pro Gly Gln Lys Glu Tyr  
465 470 475 480

Ala Ser Ala Glu Leu Glu Asp Leu Lys Ile Glu Gln Asn Glu His Thr  
485 490 495

Gly Lys Lys Ile Gly Gln Val Lys Ser His Gly Asn Phe Thr Phe Met  
500 505 510

Arg Leu Tyr Gly Gly Gly His Met Val Pro Met Asp Gln Pro Glu Ala  
515 520 525

Ser Leu Glu Phe Phe Asn Arg Trp Leu Gly Gly Glu Trp Phe  
530 535 540