

SEQUENCE SL
LISTING

<110> XYLECO, INC.

<120> COMPOSITIONS FOR ENHANCED ENZYME PRODUCTION

<130> X2002-7002W0

<140>

<141>

<150> 62/140,785

<151> 2015-03-31

<160> 15

<170> PatentIn version 3.5

<210> 1

<211> 800

<212> PRT

<213> Podospora anserina

<400> 1

Met	Lys	Ser	Ser	Val	Phe	Trp	Gly	Ala	Ser	Leu	Thr	Ser	Ala	Val	Val
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Arg	Ala	Ile	Asp	Leu	Pro	Phe	Gln	Phe	Tyr	Pro	Asn	Cys	Val	Asp	Asp
			20					25					30		

Leu	Leu	Ser	Thr	Asn	Gln	Val	Cys	Asn	Thr	Thr	Leu	Ser	Pro	Pro	Glu
		35					40					45			

Arg	Ala	Ala	Ala	Leu	Val	Ala	Ala	Leu	Thr	Pro	Glu	Glu	Lys	Leu	Gln
	50					55					60				

Asn	Ile	Val	Ser	Lys	Ser	Leu	Gly	Ala	Pro	Arg	Ile	Gly	Leu	Pro	Ala
65					70					75					80

Tyr	Asn	Trp	Trp	Ser	Glu	Ala	Leu	His	Gly	Val	Ala	Tyr	Ala	Pro	Gly
				85					90					95	

Thr	Gln	Phe	Trp	Gln	Gly	Asp	Gly	Pro	Phe	Asn	Ser	Ser	Thr	Ser	Phe
			100					105		SL			110		
Pro	Met	Pro	Leu	Leu	Met	Ala	Ala	Thr	Phe	Asp	Asp	Glu	Leu	Leu	Glu
		115					120					125			
Lys	Ile	Ala	Glu	Val	Ile	Gly	Ile	Glu	Gly	Arg	Ala	Phe	Gly	Asn	Ala
	130					135					140				
Gly	Phe	Ser	Gly	Leu	Asp	Tyr	Trp	Thr	Pro	Asn	Val	Asn	Pro	Phe	Lys
145					150					155					160
Asp	Pro	Arg	Trp	Gly	Arg	Gly	Ser	Glu	Thr	Pro	Gly	Glu	Asp	Val	Leu
				165					170					175	
Leu	Val	Lys	Arg	Tyr	Ala	Ala	Ala	Met	Ile	Lys	Gly	Leu	Glu	Gly	Pro
			180					185					190		
Val	Pro	Glu	Lys	Glu	Arg	Arg	Val	Val	Ala	Thr	Cys	Lys	His	Tyr	Ala
		195					200					205			
Ala	Asn	Asp	Phe	Glu	Asp	Trp	Asn	Gly	Ala	Thr	Arg	His	Asn	Phe	Asn
	210					215					220				
Ala	Lys	Ile	Ser	Leu	Gln	Asp	Met	Ala	Glu	Tyr	Tyr	Phe	Met	Pro	Phe
225					230					235					240
Gln	Gln	Cys	Val	Arg	Asp	Ser	Arg	Val	Gly	Ser	Ile	Met	Cys	Ala	Tyr
				245					250					255	
Asn	Ala	Val	Asn	Gly	Val	Pro	Ser	Cys	Ala	Ser	Pro	Tyr	Leu	Leu	Gln
		260						265					270		
Thr	Ile	Leu	Arg	Glu	His	Trp	Asn	Trp	Thr	Glu	His	Asn	Asn	Tyr	Ile
		275					280					285			

Thr	Ser	Asp	Cys	Glu	Ala	Val	Leu	Asp	Val	^{SL} Ser	Leu	Asn	His	Lys	Tyr
290						295					300				
Ala	Ala	Thr	Asn	Ala	Glu	Gly	Thr	Ala	Ile	Ser	Phe	Glu	Ala	Gly	Met
305					310					315					320
Asp	Thr	Ser	Cys	Glu	Tyr	Glu	Gly	Ser	Ser	Asp	Ile	Pro	Gly	Ala	Trp
				325					330					335	
Ser	Gln	Gly	Leu	Leu	Lys	Glu	Ser	Thr	Val	Asp	Arg	Ala	Leu	Leu	Arg
			340					345					350		
Leu	Tyr	Glu	Gly	Ile	Val	Arg	Ala	Gly	Tyr	Phe	Asp	Gly	Lys	Gln	Ser
		355					360					365			
Leu	Tyr	Ser	Ser	Leu	Gly	Trp	Ala	Asp	Val	Asn	Lys	Pro	Ser	Ala	Gln
	370					375					380				
Lys	Leu	Ser	Leu	Gln	Ala	Ala	Val	Asp	Gly	Thr	Val	Leu	Leu	Lys	Asn
385					390					395					400
Asp	Gly	Thr	Leu	Pro	Leu	Ser	Asp	Leu	Leu	Asp	Lys	Ser	Arg	Pro	Lys
			405						410					415	
Lys	Val	Ala	Met	Ile	Gly	Phe	Trp	Ser	Asp	Ala	Lys	Asp	Lys	Leu	Arg
		420						425					430		
Gly	Gly	Tyr	Ser	Gly	Thr	Ala	Ala	Tyr	Leu	His	Thr	Pro	Ala	Tyr	Ala
		435					440					445			
Ala	Ser	Gln	Leu	Gly	Ile	Pro	Phe	Ser	Thr	Ala	Ser	Gly	Pro	Ile	Leu
	450					455					460				
His	Ser	Asp	Leu	Ala	Ser	Asn	Gln	Ser	Trp	Thr	Asp	Asn	Ala	Met	Ala
465					470					475					480

Ala Ala Lys Asp Ala Asp Tyr Ile Leu Tyr ^{SL}Phe Gly Gly Ile Asp Thr
 485 490 495

Ser Ala Ala Gly Glu Thr Lys Asp Arg Tyr Asp Leu Asp Trp Pro Gly
 500 505 510

Ala Gln Leu Ser Leu Ile Asn Leu Leu Thr Thr Leu Ser Lys Pro Leu
 515 520 525

Ile Val Leu Gln Met Gly Asp Gln Leu Asp Asn Thr Pro Leu Leu Ser
 530 535 540

Asn Pro Lys Ile Asn Ala Ile Leu Trp Ala Asn Trp Pro Gly Gln Asp
 545 550 555 560

Gly Gly Thr Ala Val Met Glu Leu Val Thr Gly Leu Lys Ser Pro Ala
 565 570 575

Gly Arg Leu Pro Val Thr Gln Tyr Pro Ser Asn Phe Thr Glu Leu Val
 580 585 590

Pro Met Thr Asp Met Ala Leu Arg Pro Ser Ala Gly Asn Ser Gln Leu
 595 600 605

Gly Arg Thr Tyr Arg Trp Tyr Lys Thr Pro Val Gln Ala Phe Gly Phe
 610 615 620

Gly Leu His Tyr Thr Thr Phe Ser Pro Lys Phe Gly Lys Lys Phe Pro
 625 630 635 640

Ala Val Ile Asp Val Asp Glu Val Leu Glu Gly Cys Asp Asp Lys Tyr
 645 650 655

Leu Asp Thr Cys Pro Leu Pro Asp Leu Pro Val Val Val Glu Asn Arg
 660 665 670

Gly Asn Arg Thr Ser Asp Tyr Val Ala Leu ^{_SL}Ala Phe Val Ser Ala Pro
675 680 685

Gly Val Gly Pro Gly Pro Trp Pro Ile Lys Thr Leu Gly Ala Phe Thr
690 695 700

Arg Leu Arg Gly Val Lys Gly Gly Glu Lys Arg Glu Gly Gly Leu Lys
705 710 715 720

Trp Asn Leu Gly Asn Leu Ala Arg His Asp Glu Glu Gly Asn Thr Val
725 730 735

Val Tyr Pro Gly Lys Tyr Glu Val Ser Leu Asp Glu Pro Pro Lys Ala
740 745 750

Arg Leu Arg Phe Glu Ile Val Arg Gly Gly Lys Gly Lys Gly Lys Val
755 760 765

Lys Gly Lys Gly Lys Ala Ala Gln Lys Gly Gly Val Val Leu Asp Arg
770 775 780

Trp Pro Lys Pro Pro Lys Gly Gln Glu Pro Pro Ala Ile Glu Arg Val
785 790 795 800

<210> 2

<211> 316

<212> PRT

<213> Trichoderma reesei

<400> 2

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

Ser Met Ala Gln Ile Ser Asp Asp Phe Glu Ser Gly Trp Asp Gln Thr
20 25 30

Lys Trp Pro Ile Ser Ala Pro Asp Cys Asn Gln Gly Gly Thr Val Ser
35 40 45

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Leu Asp Thr Thr Val Ala His Ser Gly Ser Asn Ser Met Lys Val Val
50 55 60

Gly Gly Pro Asn Gly Tyr Cys Gly His Ile Phe Phe Gly Thr Thr Gln
65 70 75 80

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

Ala Leu Gly Ser Asn His Val Thr Phe Ile Ile Met Pro Asp Thr Ala
100 105 110

Gln Gly Gly Lys His Leu Arg Ile Gly Gly Gln Ser Gln Val Leu Asp
115 120 125

Tyr Asn Arg Glu Ser Asp Asp Ala Thr Leu Pro Asp Leu Ser Pro Asn
130 135 140

Gly Ile Ala Ser Thr Val Thr Leu Pro Thr Gly Ala Phe Gln Cys Phe
145 150 155 160

Glu Tyr His Leu Gly Thr Asp Gly Thr Ile Glu Thr Trp Leu Asn Gly
165 170 175

Ser Leu Ile Pro Gly Met Thr Val Gly Pro Gly Val Asp Asn Pro Asn
180 185 190

Asp Ala Gly Trp Thr Arg Ala Ser Tyr Ile Pro Glu Ile Thr Gly Val
195 200 205

Asn Phe Gly Trp Glu Ala Tyr Ser Gly Asp Val Asn Thr Val Trp Phe
210 215 220

Asp Asp Ile Ser Ile Ala Ser Thr Arg Val Gly Cys Gly Pro Gly Ser
225 230 235 240

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Pro Gly Gly Pro Gly Ser Ser Thr Thr Gly Arg Ser Ser Thr Ser Gly
245 250 255

Pro Thr Ser Thr Ser Arg Pro Ser Thr Thr Ile Pro Pro Pro Thr Ser
260 265 270

Arg Thr Thr Thr Ala Thr Gly Pro Thr Gln Thr His Tyr Gly Gln Cys
275 280 285

Gly Gly Ile Gly Tyr Ser Gly Pro Thr Val Cys Ala Ser Gly Thr Thr
290 295 300

Cys Gln Val Leu Asn Pro Tyr Tyr Ser Gln Cys Leu
305 310 315

<210> 3
<211> 460
<212> PRT
<213> Trichoderma reesei

<400> 3
Met Ala Ser Arg Phe Phe Ala Leu Leu Leu Leu Ala Ile Pro Ile Gln
1 5 10 15

Ala Gln Ser Pro Val Trp Gly Gln Cys Gly Gly Ile Gly Trp Ser Gly
20 25 30

Pro Thr Thr Cys Val Gly Gly Ala Thr Cys Val Ser Tyr Asn Pro Tyr
35 40 45

Tyr Ser Gln Cys Ile Pro Ser Thr Gln Ala Ser Ser Ser Ile Ala Ser
50 55 60

Thr Thr Leu Val Thr Ser Phe Thr Thr Thr Thr Ala Thr Arg Thr Ser
65 70 75 80

Ala Ser Thr Pro Pro Ala Ser Ser Thr Gly ^{SL}Ala Gly Gly Ala Thr Cys
 85 90 95

Ser Ala Leu Pro Gly Ser Ile Thr Leu Arg Ser Asn Ala Lys Leu Asn
 100 105 110

Asp Leu Phe Thr Met Phe Asn Gly Asp Lys Val Thr Thr Lys Asp Lys
 115 120 125

Phe Ser Cys Arg Gln Ala Glu Met Ser Glu Leu Ile Gln Arg Tyr Glu
 130 135 140

Leu Gly Thr Leu Pro Gly Arg Pro Ser Thr Leu Thr Ala Ser Phe Ser
 145 150 155 160

Gly Asn Thr Leu Thr Ile Asn Cys Gly Glu Ala Gly Lys Ser Ile Ser
 165 170 175

Phe Thr Val Thr Ile Thr Tyr Pro Ser Ser Gly Thr Ala Pro Tyr Pro
 180 185 190

Ala Ile Ile Gly Tyr Gly Gly Gly Ser Leu Pro Ala Pro Ala Gly Val
 195 200 205

Ala Met Ile Asn Phe Asn Asn Asp Asn Ile Ala Ala Gln Val Asn Thr
 210 215 220

Gly Ser Arg Gly Gln Gly Lys Phe Tyr Asp Leu Tyr Gly Ser Ser His
 225 230 235 240

Ser Ala Gly Ala Met Thr Ala Trp Ala Trp Gly Val Ser Arg Val Ile
 245 250 255

Asp Ala Leu Glu Leu Val Pro Gly Ala Arg Ile Asp Thr Thr Lys Ile
 260 265 270

Gly Val Thr Gly Cys Ser Arg Asn Gly Lys ^{SL}Gly Ala Met Val Ala Gly
 275 280 285

Ala Phe Glu Lys Arg Ile Val Leu Thr Leu Pro Gln Glu Ser Gly Ala
 290 295 300

Gly Gly Ser Ala Cys Trp Arg Ile Ser Asp Tyr Leu Lys Ser Gln Gly
 305 310 315 320

Ala Asn Ile Gln Thr Ala Ser Glu Ile Ile Gly Glu Asp Pro Trp Phe
 325 330 335

Ser Thr Thr Phe Asn Ser Tyr Val Asn Gln Val Pro Val Leu Pro Phe
 340 345 350

Asp His His Ser Leu Ala Ala Leu Ile Ala Pro Arg Gly Leu Phe Val
 355 360 365

Ile Asp Asn Asn Ile Asp Trp Leu Gly Pro Gln Ser Cys Phe Gly Cys
 370 375 380

Met Thr Ala Ala His Met Ala Trp Gln Ala Leu Gly Val Ser Asp His
 385 390 395 400

Met Gly Tyr Ser Gln Ile Gly Ala His Ala His Cys Ala Phe Pro Ser
 405 410 415

Asn Gln Gln Ser Gln Leu Thr Ala Phe Val Gln Lys Phe Leu Leu Gly
 420 425 430

Gln Ser Thr Asn Thr Ala Ile Phe Gln Ser Asp Phe Ser Ala Asn Gln
 435 440 445

Ser Gln Trp Ile Asp Trp Thr Thr Pro Thr Leu Ser
 450 455 460

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<210> 4

<211> 466

<212> PRT

<213> Trichoderma reesei

<400> 4

Met Leu Pro Lys Asp Phe Gln Trp Gly Phe Ala Thr Ala Ala Tyr Gln
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20 25 30

Thr Phe Cys Ala Gln Pro Gly Lys Ile Ala Asp Gly Ser Ser Gly Val
35 40 45

Thr Ala Cys Asp Ser Tyr Asn Arg Thr Ala Glu Asp Ile Ala Leu Leu
50 55 60

Lys Ser Leu Gly Ala Lys Ser Tyr Arg Phe Ser Ile Ser Trp Ser Arg
65 70 75 80

Ile Ile Pro Glu Gly Gly Arg Gly Asp Ala Val Asn Gln Ala Gly Ile
85 90 95

Asp His Tyr Val Lys Phe Val Asp Asp Leu Leu Asp Ala Gly Ile Thr
100 105 110

Pro Phe Ile Thr Leu Phe His Trp Asp Leu Pro Glu Gly Leu His Gln
115 120 125

Arg Tyr Gly Gly Leu Leu Asn Arg Thr Glu Phe Pro Leu Asp Phe Glu
130 135 140

Asn Tyr Ala Arg Val Met Phe Arg Ala Leu Pro Lys Val Arg Asn Trp
145 150 155 160

Ile Thr Phe Asn Glu Pro Leu Cys Ser Ala Ile Pro Gly Tyr Gly Ser
165 170 175

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Gly Thr Phe Ala Pro Gly Arg Gln Ser Thr Ser Glu Pro Trp Thr Val
180 185 190

Gly His Asn Ile Leu Val Ala His Gly Arg Ala Val Lys Ala Tyr Arg
195 200 205

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

Asn Gly Asp Phe Thr Tyr Pro Trp Asp Ala Ala Asp Pro Ala Asp Lys
225 230 235 240

Glu Ala Ala Glu Arg Arg Leu Glu Phe Phe Thr Ala Trp Phe Ala Asp
245 250 255

Pro Ile Tyr Leu Gly Asp Tyr Pro Ala Ser Met Arg Lys Gln Leu Gly
260 265 270

Asp Arg Leu Pro Thr Phe Thr Pro Glu Glu Arg Ala Leu Val His Gly
275 280 285

Ser Asn Asp Phe Tyr Gly Met Asn His Tyr Thr Ser Asn Tyr Ile Arg
290 295 300

His Arg Ser Ser Pro Ala Ser Ala Asp Asp Thr Val Gly Asn Val Asp
305 310 315 320

Val Leu Phe Thr Asn Lys Gln Gly Asn Cys Ile Gly Pro Glu Thr Gln
325 330 335

Ser Pro Trp Leu Arg Pro Cys Ala Ala Gly Phe Arg Asp Phe Leu Val
340 345 350

Trp Ile Ser Lys Arg Tyr Gly Tyr Pro Pro Ile Tyr Val Thr Glu Asn
355 360 365

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Gly Thr Ser Ile Lys Gly Glu Ser Asp Leu Pro Lys Glu Lys Ile Leu
370 375 380

Glu Asp Asp Phe Arg Val Lys Tyr Tyr Asn Glu Tyr Ile Arg Ala Met
385 390 395 400

Val Thr Ala Val Glu Leu Asp Gly Val Asn Val Lys Gly Tyr Phe Ala
405 410 415

Trp Ser Leu Met Asp Asn Phe Glu Trp Ala Asp Gly Tyr Val Thr Arg
420 425 430

Phe Gly Val Thr Tyr Val Asp Tyr Glu Asn Gly Gln Lys Arg Phe Pro
435 440 445

Lys Lys Ser Ala Lys Ser Leu Lys Pro Leu Phe Asp Glu Leu Ile Ala
450 455 460

Ala Ala
465

<210> 5
<211> 744
<212> PRT
<213> Trichoderma reesei

<400> 5
Met Arg Tyr Arg Thr Ala Ala Ala Leu Ala Leu Ala Thr Gly Pro Phe
1 5 10 15

Ala Arg Ala Asp Ser His Ser Thr Ser Gly Ala Ser Ala Glu Ala Val
20 25 30

Val Pro Pro Ala Gly Thr Pro Trp Gly Thr Ala Tyr Asp Lys Ala Lys
35 40 45

Ala Ala Leu Ala Lys Leu Asn Leu Gln Asp ^{SL}Lys Val Gly Ile Val Ser
 50 55 60

Gly Val Gly Trp Asn Gly Gly Pro Cys Val Gly Asn Thr Ser Pro Ala
 65 70 75 80

Ser Lys Ile Ser Tyr Pro Ser Leu Cys Leu Gln Asp Gly Pro Leu Gly
 85 90 95

Val Arg Tyr Ser Thr Gly Ser Thr Ala Phe Thr Pro Gly Val Gln Ala
 100 105 110

Ala Ser Thr Trp Asp Val Asn Leu Ile Arg Glu Arg Gly Gln Phe Ile
 115 120 125

Gly Glu Glu Val Lys Ala Ser Gly Ile His Val Ile Leu Gly Pro Val
 130 135 140

Ala Gly Pro Leu Gly Lys Thr Pro Gln Gly Gly Arg Asn Trp Glu Gly
 145 150 155 160

Phe Gly Val Asp Pro Tyr Leu Thr Gly Ile Ala Met Gly Gln Thr Ile
 165 170 175

Asn Gly Ile Gln Ser Val Gly Val Gln Ala Thr Ala Lys His Tyr Ile
 180 185 190

Leu Asn Glu Gln Glu Leu Asn Arg Glu Thr Ile Ser Ser Asn Pro Asp
 195 200 205

Asp Arg Thr Leu His Glu Leu Tyr Thr Trp Pro Phe Ala Asp Ala Val
 210 215 220

Gln Ala Asn Val Ala Ser Val Met Cys Ser Tyr Asn Lys Val Asn Thr
 225 230 235 240

Thr Trp Ala Cys Glu Asp Gln Tyr Thr Leu ^{SL}Gln Thr Val Leu Lys Asp
 245 250 255

Gln Leu Gly Phe Pro Gly Tyr Val Met Thr Asp Trp Asn Ala Gln His
 260 265 270

Thr Thr Val Gln Ser Ala Asn Ser Gly Leu Asp Met Ser Met Pro Gly
 275 280 285

Thr Asp Phe Asn Gly Asn Asn Arg Leu Trp Gly Pro Ala Leu Thr Asn
 290 295 300

Ala Val Asn Ser Asn Gln Val Pro Thr Ser Arg Val Asp Asp Met Val
 305 310 315 320

Thr Arg Ile Leu Ala Ala Trp Tyr Leu Thr Gly Gln Asp Gln Ala Gly
 325 330 335

Tyr Pro Ser Phe Asn Ile Ser Arg Asn Val Gln Gly Asn His Lys Thr
 340 345 350

Asn Val Arg Ala Ile Ala Arg Asp Gly Ile Val Leu Leu Lys Asn Asp
 355 360 365

Ala Asn Ile Leu Pro Leu Lys Lys Pro Ala Ser Ile Ala Val Val Gly
 370 375 380

Ser Ala Ala Ile Ile Gly Asn His Ala Arg Asn Ser Pro Ser Cys Asn
 385 390 395 400

Asp Lys Gly Cys Asp Asp Gly Ala Leu Gly Met Gly Trp Gly Ser Gly
 405 410 415

Ala Val Asn Tyr Pro Tyr Phe Val Ala Pro Tyr Asp Ala Ile Asn Thr
 420 425 430

Arg Ala Ser Ser Gln Gly Thr Gln Val Thr ^{SL}Leu Ser Asn Thr Asp Asn
 435 440 445

Thr Ser Ser Gly Ala Ser Ala Ala Arg Gly Lys Asp Val Ala Ile Val
 450 455 460

Phe Ile Thr Ala Asp Ser Gly Glu Gly Tyr Ile Thr Val Glu Gly Asn
 465 470 475 480

Ala Gly Asp Arg Asn Asn Leu Asp Pro Trp His Asn Gly Asn Ala Leu
 485 490 495

Val Gln Ala Val Ala Gly Ala Asn Ser Asn Val Ile Val Val Val His
 500 505 510

Ser Val Gly Ala Ile Ile Leu Glu Gln Ile Leu Ala Leu Pro Gln Val
 515 520 525

Lys Ala Val Val Trp Ala Gly Leu Pro Ser Gln Glu Ser Gly Asn Ala
 530 535 540

Leu Val Asp Val Leu Trp Gly Asp Val Ser Pro Ser Gly Lys Leu Val
 545 550 555 560

Tyr Thr Ile Ala Lys Ser Pro Asn Asp Tyr Asn Thr Arg Ile Val Ser
 565 570 575

Gly Gly Ser Asp Ser Phe Ser Glu Gly Leu Phe Ile Asp Tyr Lys His
 580 585 590

Phe Asp Asp Ala Asn Ile Thr Pro Arg Tyr Glu Phe Gly Tyr Gly Leu
 595 600 605

Ser Tyr Thr Lys Phe Asn Tyr Ser Arg Leu Ser Val Leu Ser Thr Ala
 610 615 620

Lys Ser Gly Pro Ala Thr Gly Ala Val Val ^{_SL}Pro Gly Gly Pro Ser Asp
625 630 635 640

Leu Phe Gln Asn Val Ala Thr Val Thr Val Asp Ile Ala Asn Ser Gly
645 650 655

Gln Val Thr Gly Ala Glu Val Ala Gln Leu Tyr Ile Thr Tyr Pro Ser
660 665 670

Ser Ala Pro Arg Thr Pro Pro Lys Gln Leu Arg Gly Phe Ala Lys Leu
675 680 685

Asn Leu Thr Pro Gly Gln Ser Gly Thr Ala Thr Phe Asn Ile Arg Arg
690 695 700

Arg Asp Leu Ser Tyr Trp Asp Thr Ala Ser Gln Lys Trp Val Val Pro
705 710 715 720

Ser Gly Ser Phe Gly Ile Ser Val Gly Ala Ser Ser Arg Asp Ile Arg
725 730 735

Leu Thr Ser Thr Leu Ser Val Ala
740

<210> 6
<211> 418
<212> PRT
<213> Trichoderma reesei

<400> 6
Met Asn Lys Ser Val Ala Pro Leu Leu Leu Ala Ala Ser Ile Leu Tyr
1 5 10 15

Gly Gly Ala Ala Ala Gln Gln Thr Val Trp Gly Gln Cys Gly Gly Ile
20 25 30

Gly Trp Ser Gly Pro Thr Asn Cys Ala Pro Gly Ser Ala Cys Ser Thr
35 40 45

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Leu Asn Pro Tyr Tyr Ala Gln Cys Ile Pro Gly Ala Thr Thr Ile Thr
50 55 60

Thr Ser Thr Arg Pro Pro Ser Gly Pro Thr Thr Thr Thr Arg Ala Thr
65 70 75 80

Ser Thr Ser Ser Ser Thr Pro Pro Thr Ser Ser Gly Val Arg Phe Ala
85 90 95

Gly Val Asn Ile Ala Gly Phe Asp Phe Gly Cys Thr Thr Asp Gly Thr
100 105 110

Cys Val Thr Ser Lys Val Tyr Pro Pro Leu Lys Asn Phe Thr Gly Ser
115 120 125

Asn Asn Tyr Pro Asp Gly Ile Gly Gln Met Gln His Phe Val Asn Asp
130 135 140

Asp Gly Met Thr Ile Phe Arg Leu Pro Val Gly Trp Gln Tyr Leu Val
145 150 155 160

Asn Asn Asn Leu Gly Gly Asn Leu Asp Ser Thr Ser Ile Ser Lys Tyr
165 170 175

Asp Gln Leu Val Gln Gly Cys Leu Ser Leu Gly Ala Tyr Cys Ile Val
180 185 190

Asp Ile His Asn Tyr Ala Arg Trp Asn Gly Gly Ile Ile Gly Gln Gly
195 200 205

Gly Pro Thr Asn Ala Gln Phe Thr Ser Leu Trp Ser Gln Leu Ala Ser
210 215 220

Lys Tyr Ala Ser Gln Ser Arg Val Trp Phe Gly Ile Met Asn Glu Pro
225 230 235 240

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His Asp Val Asn Ile Asn Thr Trp Ala Ala Thr Val Gln Glu Val Val
245 250 255

Thr Ala Ile Arg Asn Ala Gly Ala Thr Ser Gln Phe Ile Ser Leu Pro
260 265 270

Gly Asn Asp Trp Gln Ser Ala Gly Ala Phe Ile Ser Asp Gly Ser Ala
275 280 285

Ala Ala Leu Ser Gln Val Thr Asn Pro Asp Gly Ser Thr Thr Asn Leu
290 295 300

Ile Phe Asp Val His Lys Tyr Leu Asp Ser Asp Asn Ser Gly Thr His
305 310 315 320

Ala Glu Cys Thr Thr Asn Asn Ile Asp Gly Ala Phe Ser Pro Leu Ala
325 330 335

Thr Trp Leu Arg Gln Asn Asn Arg Gln Ala Ile Leu Thr Glu Thr Gly
340 345 350

Gly Gly Asn Val Gln Ser Cys Ile Gln Asp Met Cys Gln Gln Ile Gln
355 360 365

Tyr Leu Asn Gln Asn Ser Asp Val Tyr Leu Gly Tyr Val Gly Trp Gly
370 375 380

Ala Gly Ser Phe Asp Ser Thr Tyr Val Leu Thr Glu Thr Pro Thr Gly
385 390 395 400

Ser Gly Asn Ser Trp Thr Asp Thr Ser Leu Val Ser Ser Cys Leu Ala
405 410 415

Arg Lys

_SL

<210> 7

<211> 471

<212> PRT

<213> Trichoderma reesei

<400> 7

Met Ile Val Gly Ile Leu Thr Thr Leu Ala Thr Leu Ala Thr Leu Ala
1 5 10 15

Ala Ser Val Pro Leu Glu Glu Arg Gln Ala Cys Ser Ser Val Trp Gly
20 25 30

Gln Cys Gly Gly Gln Asn Trp Ser Gly Pro Thr Cys Cys Ala Ser Gly
35 40 45

Ser Thr Cys Val Tyr Ser Asn Asp Tyr Tyr Ser Gln Cys Leu Pro Gly
50 55 60

Ala Ala Ser Ser Ser Ser Ser Thr Arg Ala Ala Ser Thr Thr Ser Arg
65 70 75 80

Val Ser Pro Thr Thr Ser Arg Ser Ser Ser Ala Thr Pro Pro Pro Gly
85 90 95

Ser Thr Thr Thr Arg Val Pro Pro Val Gly Ser Gly Thr Ala Thr Tyr
100 105 110

Ser Gly Asn Pro Phe Val Gly Val Thr Pro Trp Ala Asn Ala Tyr Tyr
115 120 125

Ala Ser Glu Val Ser Ser Leu Ala Ile Pro Ser Leu Thr Gly Ala Met
130 135 140

Ala Thr Ala Ala Ala Ala Val Ala Lys Val Pro Ser Phe Met Trp Leu
145 150 155 160

Asp Thr Leu Asp Lys Thr Pro Leu Met Glu ^{SL}Gln Thr Leu Ala Asp Ile
 165 170 175

Arg Thr Ala Asn Lys Asn Gly Gly Asn Tyr Ala Gly Gln Phe Val Val
 180 185 190

Tyr Asp Leu Pro Asp Arg Asp Cys Ala Ala Leu Ala Ser Asn Gly Glu
 195 200 205

Tyr Ser Ile Ala Asp Gly Gly Val Ala Lys Tyr Lys Asn Tyr Ile Asp
 210 215 220

Thr Ile Arg Gln Ile Val Val Glu Tyr Ser Asp Ile Arg Thr Leu Leu
 225 230 235 240

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

Pro Lys Cys Ala Asn Ala Gln Ser Ala Tyr Leu Glu Cys Ile Asn Tyr
 260 265 270

Ala Val Thr Gln Leu Asn Leu Pro Asn Val Ala Met Tyr Leu Asp Ala
 275 280 285

Gly His Ala Gly Trp Leu Gly Trp Pro Ala Asn Gln Asp Pro Ala Ala
 290 295 300

Gln Leu Phe Ala Asn Val Tyr Lys Asn Ala Ser Ser Pro Arg Ala Leu
 305 310 315 320

Arg Gly Leu Ala Thr Asn Val Ala Asn Tyr Asn Gly Trp Asn Ile Thr
 325 330 335

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

Tyr Ile His Ala Ile Gly Pro Leu Leu Ala ^{_SL}Asn His Gly Trp Ser Asn
 355 360 365

Ala Phe Phe Ile Thr Asp Gln Gly Arg Ser Gly Lys Gln Pro Thr Gly
 370 375 380

Gln Gln Gln Trp Gly Asp Trp Cys Asn Val Ile Gly Thr Gly Phe Gly
 385 390 395 400

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

Trp Val Lys Pro Gly Gly Glu Cys Asp Gly Thr Ser Asp Ser Ser Ala
 420 425 430

Pro Arg Phe Asp Ser His Cys Ala Leu Pro Asp Ala Leu Gln Pro Ala
 435 440 445

Pro Gln Ala Gly Ala Trp Phe Gln Ala Tyr Phe Val Gln Leu Leu Thr
 450 455 460

Asn Ala Asn Pro Ser Phe Leu
 465 470

<210> 8

<211> 514

<212> PRT

<213> Trichoderma reesei

<400> 8

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

Ala Gln Ser Ala Cys Thr Leu Gln Ser Glu Thr His Pro Pro Leu Thr
 20 25 30

Trp Gln Lys Cys Ser Ser Gly Gly Thr Cys Thr Gln Gln Thr Gly Ser
 35 40 45

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Val Val Ile Asp Ala Asn Trp Arg Trp Thr His Ala Thr Asn Ser Ser
50 55 60

Thr Asn Cys Tyr Asp Gly Asn Thr Trp Ser Ser Thr Leu Cys Pro Asp
65 70 75 80

Asn Glu Thr Cys Ala Lys Asn Cys Cys Leu Asp Gly Ala Ala Tyr Ala
85 90 95

Ser Thr Tyr Gly Val Thr Thr Ser Gly Asn Ser Leu Ser Ile Gly Phe
100 105 110

Val Thr Gln Ser Ala Gln Lys Asn Val Gly Ala Arg Leu Tyr Leu Met
115 120 125

Ala Ser Asp Thr Thr Tyr Gln Glu Phe Thr Leu Leu Gly Asn Glu Phe
130 135 140

Ser Phe Asp Val Asp Val Ser Gln Leu Pro Cys Gly Leu Asn Gly Ala
145 150 155 160

Leu Tyr Phe Val Ser Met Asp Ala Asp Gly Gly Val Ser Lys Tyr Pro
165 170 175

Thr Asn Thr Ala Gly Ala Lys Tyr Gly Thr Gly Tyr Cys Asp Ser Gln
180 185 190

Cys Pro Arg Asp Leu Lys Phe Ile Asn Gly Gln Ala Asn Val Glu Gly
195 200 205

Trp Glu Pro Ser Ser Asn Asn Ala Asn Thr Gly Ile Gly Gly His Gly
210 215 220

Ser Cys Cys Ser Glu Met Asp Ile Trp Glu Ala Asn Ser Ile Ser Glu
225 230 235 240

_SL

Ala Leu Thr Pro His Pro Cys Thr Thr Val Gly Gln Glu Ile Cys Glu
245 250 255

Gly Asp Gly Cys Gly Gly Thr Tyr Ser Asp Asn Arg Tyr Gly Gly Thr
260 265 270

Cys Asp Pro Asp Gly Cys Asp Trp Asn Pro Tyr Arg Leu Gly Asn Thr
275 280 285

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

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

Tyr Val Gln Asn Gly Val Thr Phe Gln Gln Pro Asn Ala Glu Leu Gly
325 330 335

Ser Tyr Ser Gly Asn Glu Leu Asn Asp Asp Tyr Cys Thr Ala Glu Glu
340 345 350

Ala Glu Phe Gly Gly Ser Ser Phe Ser Asp Lys Gly Gly Leu Thr Gln
355 360 365

Phe Lys Lys Ala Thr Ser Gly Gly Met Val Leu Val Met Ser Leu Trp
370 375 380

Asp Asp Tyr Tyr Ala Asn Met Leu Trp Leu Asp Ser Thr Tyr Pro Thr
385 390 395 400

Asn Glu Thr Ser Ser Thr Pro Gly Ala Val Arg Gly Ser Cys Ser Thr
405 410 415

Ser Ser Gly Val Pro Ala Gln Val Glu Ser Gln Ser Pro Asn Ala Lys
420 425 430

_SL

Val Thr Phe Ser Asn Ile Lys Phe Gly Pro Ile Gly Ser Thr Gly Asn
435 440 445

Pro Ser Gly Gly Asn Pro Pro Gly Gly Asn Pro Pro Gly Thr Thr Thr
450 455 460

Thr Arg Arg Pro Ala Thr Thr Thr Gly Ser Ser Pro Gly Pro Thr Gln
465 470 475 480

Ser His Tyr Gly Gln Cys Gly Gly Ile Gly Tyr Ser Gly Pro Thr Val
485 490 495

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

Cys Leu

<210> 9

<211> 459

<212> PRT

<213> Trichoderma reesei

<400> 9

Met Ala Pro Ser Val Thr Leu Pro Leu Thr Thr Ala Ile Leu Ala Ile
1 5 10 15

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

His Pro Lys Leu Thr Thr Tyr Lys Cys Thr Lys Ser Gly Gly Cys Val
35 40 45

Ala Gln Asp Thr Ser Val Val Leu Asp Trp Asn Tyr Arg Trp Met His
50 55 60

Asp	Ala	Asn	Tyr	Asn	Ser	Cys	Thr	Val	Asn	^{SL} Gly	Gly	Val	Asn	Thr	Thr
65					70					75					80
Leu	Cys	Pro	Asp	Glu	Ala	Thr	Cys	Gly	Lys	Asn	Cys	Phe	Ile	Glu	Gly
				85					90					95	
Val	Asp	Tyr	Ala	Ala	Ser	Gly	Val	Thr	Thr	Ser	Gly	Ser	Ser	Leu	Thr
			100					105						110	
Met	Asn	Gln	Tyr	Met	Pro	Ser	Ser	Ser	Gly	Gly	Tyr	Ser	Ser	Val	Ser
		115					120					125			
Pro	Arg	Leu	Tyr	Leu	Leu	Asp	Ser	Asp	Gly	Glu	Tyr	Val	Met	Leu	Lys
	130					135					140				
Leu	Asn	Gly	Gln	Glu	Leu	Ser	Phe	Asp	Val	Asp	Leu	Ser	Ala	Leu	Pro
145					150					155					160
Cys	Gly	Glu	Asn	Gly	Ser	Leu	Tyr	Leu	Ser	Gln	Met	Asp	Glu	Asn	Gly
				165					170					175	
Gly	Ala	Asn	Gln	Tyr	Asn	Thr	Ala	Gly	Ala	Asn	Tyr	Gly	Ser	Gly	Tyr
			180					185					190		
Cys	Asp	Ala	Gln	Cys	Pro	Val	Gln	Thr	Trp	Arg	Asn	Gly	Thr	Leu	Asn
		195					200					205			
Thr	Ser	His	Gln	Gly	Phe	Cys	Cys	Asn	Glu	Met	Asp	Ile	Leu	Glu	Gly
	210					215					220				
Asn	Ser	Arg	Ala	Asn	Ala	Leu	Thr	Pro	His	Ser	Cys	Thr	Ala	Thr	Ala
225					230					235					240
Cys	Asp	Ser	Ala	Gly	Cys	Gly	Phe	Asn	Pro	Tyr	Gly	Ser	Gly	Tyr	Lys
				245					250					255	

Ser Tyr Tyr Gly Pro Gly Asp Thr Val Asp Thr Ser Lys Thr Phe Thr
 260 265 270

Ile Ile Thr Gln Phe Asn Thr Asp Asn Gly Ser Pro Ser Gly Asn Leu
 275 280 285

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

Ala Gln Pro Gly Gly Asp Thr Ile Ser Ser Cys Pro Ser Ala Ser Ala
 305 310 315 320

Tyr Gly Gly Leu Ala Thr Met Gly Lys Ala Leu Ser Ser Gly Met Val
 325 330 335

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

Asp Ser Gly Asn Ala Gly Pro Cys Ser Ser Thr Glu Gly Asn Pro Ser
 355 360 365

Asn Ile Leu Ala Asn Asn Pro Asn Thr His Val Val Phe Ser Asn Ile
 370 375 380

Arg Trp Gly Asp Ile Gly Ser Thr Thr Asn Ser Thr Ala Pro Pro Pro
 385 390 395 400

Pro Pro Ala Ser Ser Thr Thr Phe Ser Thr Thr Arg Arg Ser Ser Thr
 405 410 415

Thr Ser Ser Ser Pro Ser Cys Thr Gln Thr His Trp Gly Gln Cys Gly
 420 425 430

Gly Ile Gly Tyr Ser Gly Cys Lys Thr Cys Thr Ser Gly Thr Thr Cys
 435 440 445

Gln Tyr Ser Asn Asp Tyr Tyr Ser Gln Cys SL
 450 455 Leu

<210> 10
 <211> 234
 <212> PRT
 <213> Trichoderma reesei

<400> 10
 Met Lys Phe Leu Gln Val Leu Pro Ala Leu Ile Pro Ala Ala Leu Ala
 1 5 10 15

Gln Thr Ser Cys Asp Gln Trp Ala Thr Phe Thr Gly Asn Gly Tyr Thr
 20 25 30

Val Ser Asn Asn Leu Trp Gly Ala Ser Ala Gly Ser Gly Phe Gly Cys
 35 40 45

Val Thr Ala Val Ser Leu Ser Gly Gly Ala Ser Trp His Ala Asp Trp
 50 55 60

Gln Trp Ser Gly Gly Gln Asn Asn Val Lys Ser Tyr Gln Asn Ser Gln
 65 70 75 80

Ile Ala Ile Pro Gln Lys Arg Thr Val Asn Ser Ile Ser Ser Met Pro
 85 90 95

Thr Thr Ala Ser Trp Ser Tyr Ser Gly Ser Asn Ile Arg Ala Asn Val
 100 105 110

Ala Tyr Asp Leu Phe Thr Ala Ala Asn Pro Asn His Val Thr Tyr Ser
 115 120 125

Gly Asp Tyr Glu Leu Met Ile Trp Leu Gly Lys Tyr Gly Asp Ile Gly
 130 135 140

Pro Ile Gly Ser Ser Gln Gly Thr Val Asn Val Gly Gly Gln Ser Trp
 145 150 155 160

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Thr Leu Tyr Tyr Gly Tyr Asn Gly Ala Met Gln Val Tyr Ser Phe Val
165 170 175

Ala Gln Thr Asn Thr Thr Asn Tyr Ser Gly Asp Val Lys Asn Phe Phe
180 185 190

Asn Tyr Leu Arg Asp Asn Lys Gly Tyr Asn Ala Ala Gly Gln Tyr Val
195 200 205

Leu Ser Tyr Gln Phe Gly Thr Glu Pro Phe Thr Gly Ser Gly Thr Leu
210 215 220

Asn Val Ala Ser Trp Thr Ala Ser Ile Asn
225 230

<210> 11
<211> 242
<212> PRT
<213> Trichoderma reesei

<400> 11
Met Lys Ala Thr Leu Val Leu Gly Ser Leu Ile Val Gly Ala Val Ser
1 5 10 15

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

Cys Gly Cys Gly Ser Ser Ser Gly Ala Phe Pro Trp Gln Leu Gly Ile
35 40 45

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

Ala Gly Ala Ser Trp Cys Gly Ala Gly Cys Gly Lys Cys Tyr Gln Leu
65 70 75 80

Thr Ser Thr Gly Gln Ala Pro Cys Ser Ser ^{SL}Cys Gly Thr Gly Gly Ala
85 90 95

Ala Gly Gln Ser Ile Ile Val Met Val Thr Asn Leu Cys Pro Asn Asn
100 105 110

Gly Asn Ala Gln Trp Cys Pro Val Val Gly Gly Thr Asn Gln Tyr Gly
115 120 125

Tyr Ser Tyr His Phe Asp Ile Met Ala Gln Asn Glu Ile Phe Gly Asp
130 135 140

Asn Val Val Val Asp Phe Glu Pro Ile Ala Cys Pro Gly Gln Ala Ala
145 150 155 160

Ser Asp Trp Gly Thr Cys Leu Cys Val Gly Gln Gln Glu Thr Asp Pro
165 170 175

Thr Pro Val Leu Gly Asn Asp Thr Gly Ser Thr Pro Pro Gly Ser Ser
180 185 190

Pro Pro Ala Thr Ser Ser Ser Pro Pro Ser Gly Gly Gly Gln Gln Thr
195 200 205

Leu Tyr Gly Gln Cys Gly Gly Ala Gly Trp Thr Gly Pro Thr Thr Cys
210 215 220

Gln Ala Pro Gly Thr Cys Lys Val Gln Asn Gln Trp Tyr Ser Gln Cys
225 230 235 240

Leu Pro

<210> 12

<211> 838

<212> PRT

<213> Trichoderma reesei

_SL

<400> 12

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

Ala His Ala Ala Phe Ser Trp Lys Asn Val Lys Leu Gly Gly Gly Gly
20 25 30

Gly Phe Val Pro Gly Ile Ile Phe His Pro Lys Thr Lys Gly Val Ala
35 40 45

Tyr Ala Arg Thr Asp Ile Gly Gly Leu Tyr Arg Leu Asn Ala Asp Asp
50 55 60

Ser Trp Thr Ala Val Thr Asp Gly Ile Ala Asp Asn Ala Gly Trp His
65 70 75 80

Asn Trp Gly Ile Asp Ala Val Ala Leu Asp Pro Gln Asp Asp Gln Lys
85 90 95

Val Tyr Ala Ala Val Gly Met Tyr Thr Asn Ser Trp Asp Pro Ser Asn
100 105 110

Gly Ala Ile Ile Arg Ser Ser Asp Arg Gly Ala Thr Trp Ser Phe Thr
115 120 125

Asn Leu Pro Phe Lys Val Gly Gly Asn Met Pro Gly Arg Gly Ala Gly
130 135 140

Glu Arg Leu Ala Val Asp Pro Ala Asn Ser Asn Ile Ile Tyr Phe Gly
145 150 155 160

Ala Arg Ser Gly Asn Gly Leu Trp Lys Ser Thr Asp Gly Gly Val Thr
165 170 175

Phe Ser Lys Val Ser Ser Phe Thr Ala Thr Gly Thr Tyr Ile Pro Asp
180 185 190

_SL

Pro Ser Asp Ser Asn Gly Tyr Asn Ser Asp Lys Gln Gly Leu Met Trp
195 200 205

Val Thr Phe Asp Ser Thr Ser Ser Thr Thr Gly Gly Ala Thr Ser Arg
210 215 220

Ile Phe Val Gly Thr Ala Asp Asn Ile Thr Ala Ser Val Tyr Val Ser
225 230 235 240

Thr Asn Ala Gly Ser Thr Trp Ser Ala Val Pro Gly Gln Pro Gly Lys
245 250 255

Tyr Phe Pro His Lys Ala Lys Leu Gln Pro Ala Glu Lys Ala Leu Tyr
260 265 270

Leu Thr Tyr Ser Asp Gly Thr Gly Pro Tyr Asp Gly Thr Leu Gly Ser
275 280 285

Val Trp Arg Tyr Asp Ile Ala Gly Gly Thr Trp Lys Asp Ile Thr Pro
290 295 300

Val Ser Gly Ser Asp Leu Tyr Phe Gly Phe Gly Gly Leu Gly Leu Asp
305 310 315 320

Leu Gln Lys Pro Gly Thr Leu Val Val Ala Ser Leu Asn Ser Trp Trp
325 330 335

Pro Asp Ala Gln Leu Phe Arg Ser Thr Asp Ser Gly Thr Thr Trp Ser
340 345 350

Pro Ile Trp Ala Trp Ala Ser Tyr Pro Thr Glu Thr Tyr Tyr Tyr Ser
355 360 365

Ile Ser Thr Pro Lys Ala Pro Trp Ile Lys Asn Asn Phe Ile Asp Val
370 375 380

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Thr Ser Glu Ser Pro Ser Asp Gly Leu Ile Lys Arg Leu Gly Trp Met
385 390 395 400

Ile Glu Ser Leu Glu Ile Asp Pro Thr Asp Ser Asn His Trp Leu Tyr
405 410 415

Gly Thr Gly Met Thr Ile Phe Gly Gly His Asp Leu Thr Asn Trp Asp
420 425 430

Thr Arg His Asn Val Ser Ile Gln Ser Leu Ala Asp Gly Ile Glu Glu
435 440 445

Phe Ser Val Gln Asp Leu Ala Ser Ala Pro Gly Gly Ser Glu Leu Leu
450 455 460

Ala Ala Val Gly Asp Asp Asn Gly Phe Thr Phe Ala Ser Arg Asn Asp
465 470 475 480

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

Ser Thr Ser Val Asp Tyr Ala Gly Asn Ser Val Lys Ser Val Val Arg
500 505 510

Val Gly Asn Thr Ala Gly Thr Gln Gln Val Ala Ile Ser Ser Asp Gly
515 520 525

Gly Ala Thr Trp Ser Ile Asp Tyr Ala Ala Asp Thr Ser Met Asn Gly
530 535 540

Gly Thr Val Ala Tyr Ser Ala Asp Gly Asp Thr Ile Leu Trp Ser Thr
545 550 555 560

Ala Ser Ser Gly Val Gln Arg Ser Gln Phe Gln Gly Ser Phe Ala Ser
565 570 575

_SL

Val Ser Ser Leu Pro Ala Gly Ala Val Ile Ala Ser Asp Lys Lys Thr
580 585 590

Asn Ser Val Phe Tyr Ala Gly Ser Gly Ser Thr Phe Tyr Val Ser Lys
595 600 605

Asp Thr Gly Ser Ser Phe Thr Arg Gly Pro Lys Leu Gly Ser Ala Gly
610 615 620

Thr Ile Arg Asp Ile Ala Ala His Pro Thr Thr Ala Gly Thr Leu Tyr
625 630 635 640

Val Ser Thr Asp Val Gly Ile Phe Arg Ser Thr Asp Ser Gly Thr Thr
645 650 655

Phe Gly Gln Val Ser Thr Ala Leu Thr Asn Thr Tyr Gln Ile Ala Leu
660 665 670

Gly Val Gly Ser Gly Ser Asn Trp Asn Leu Tyr Ala Phe Gly Thr Gly
675 680 685

Pro Ser Gly Ala Arg Leu Tyr Ala Ser Gly Asp Ser Gly Ala Ser Trp
690 695 700

Thr Asp Ile Gln Gly Ser Gln Gly Phe Gly Ser Ile Asp Ser Thr Lys
705 710 715 720

Val Ala Gly Ser Gly Ser Thr Ala Gly Gln Val Tyr Val Gly Thr Asn
725 730 735

Gly Arg Gly Val Phe Tyr Ala Gln Gly Thr Val Gly Gly Gly Thr Gly
740 745 750

Gly Thr Ser Ser Ser Thr Lys Gln Ser Ser Ser Ser Thr Ser Ser Ala
755 760 765

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Ser Ser Ser Thr Thr Leu Arg Ser Ser Val Val Ser Thr Thr Arg Ala
770 775 780

Ser Thr Val Thr Ser Ser Arg Thr Ser Ser Ala Ala Gly Pro Thr Gly
785 790 795 800

Ser Gly Val Ala Gly His Tyr Ala Gln Cys Gly Gly Ile Gly Trp Thr
805 810 815

Gly Pro Thr Gln Cys Val Ala Pro Tyr Val Cys Gln Lys Gln Asn Asp
820 825 830

Tyr Tyr Tyr Gln Cys Val
835

<210> 13
<211> 373
<212> PRT
<213> Podospora anserina

<400> 13
Met Lys Gly Leu Phe Ala Phe Gly Leu Gly Leu Leu Ser Leu Val Asn
1 5 10 15

Ala Leu Pro Gln Ala Gln Gly Gly Gly Ala Ala Ala Ser Ala Lys Val
20 25 30

Ser Gly Thr Arg Phe Val Ile Asp Gly Lys Thr Gly Tyr Phe Ala Gly
35 40 45

Thr Asn Ser Tyr Trp Ile Gly Phe Leu Thr Asn Asn Arg Asp Val Asp
50 55 60

Thr Thr Leu Asp His Ile Ala Ser Ser Gly Leu Lys Ile Leu Arg Val
65 70 75 80

Trp Gly Phe Asn Asp Val Asn Asn Gln Pro ^{SL}Ser Gly Asn Thr Val Trp
 85 90 95

Phe Gln Arg Leu Ala Ser Ser Gly Ser Gln Ile Asn Thr Gly Pro Asn
 100 105 110

Gly Leu Gln Arg Leu Asp Tyr Leu Val Arg Ser Ala Glu Thr Arg Gly
 115 120 125

Ile Lys Leu Ile Ile Ala Leu Val Asn Tyr Trp Asp Asp Phe Gly Gly
 130 135 140

Met Lys Ala Tyr Val Asn Ala Phe Gly Gly Thr Lys Glu Ser Trp Tyr
 145 150 155 160

Thr Asn Ala Arg Ala Gln Glu Gln Tyr Lys Arg Tyr Ile Gln Ala Val
 165 170 175

Val Ser Arg Tyr Val Asn Ser Pro Ala Ile Phe Ala Trp Glu Leu Ala
 180 185 190

Asn Glu Pro Arg Cys Lys Gly Cys Asn Thr Asn Val Ile Phe Asn Trp
 195 200 205

Ala Thr Gln Ile Ser Asp Tyr Ile Arg Ser Leu Asp Lys Asp His Leu
 210 215 220

Ile Thr Leu Gly Asp Glu Gly Phe Gly Leu Pro Gly Gln Thr Thr Tyr
 225 230 235 240

Pro Tyr Gln Tyr Gly Glu Gly Thr Asp Phe Val Lys Asn Leu Gln Ile
 245 250 255

Lys Asn Leu Asp Phe Gly Thr Phe His Met Tyr Pro Gly His Trp Gly
 260 265 270

Val Pro Thr Ser Phe Gly Pro Gly Trp Ile ^{SL}Lys Asp His Ala Ala Ala
 275 280 285

Cys Arg Ala Ala Gly Lys Pro Cys Leu Leu Glu Glu Tyr Gly Tyr Glu
 290 295 300

Ser Asp Arg Cys Asn Val Gln Lys Gly Trp Gln Gln Ala Ser Arg Glu
 305 310 315 320

Leu Ser Arg Asp Gly Met Ser Gly Asp Leu Phe Trp Gln Trp Gly Asp
 325 330 335

Gln Leu Ser Thr Gly Gln Thr His Asn Asp Gly Phe Thr Ile Tyr Tyr
 340 345 350

Gly Ser Ser Leu Ala Thr Cys Leu Val Thr Asp His Val Arg Ala Ile
 355 360 365

Asn Ala Leu Pro Ala
 370

<210> 14
 <211> 469
 <212> PRT
 <213> Podospora anserina

<400> 14
 Met Val Lys Leu Leu Asp Ile Gly Leu Phe Ala Leu Ala Leu Ala Ser
 1 5 10 15

Ser Ala Val Ala Lys Pro Cys Lys Pro Arg Asp Gly Pro Val Thr Tyr
 20 25 30

Glu Ala Glu Asp Ala Ile Leu Thr Gly Thr Thr Val Asp Thr Ala Gln
 35 40 45

Val Gly Tyr Thr Gly Arg Gly Tyr Val Thr Gly Phe Asp Glu Gly Ser
 50 55 60

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Asp Lys Ile Thr Phe Gln Ile Ser Ser Ala Thr Thr Lys Leu Tyr Asp
65 70 75 80

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

Val Leu Asn Asn Gly Ala Val Ser Glu Val Phe Phe Pro Ala Gly Asp
100 105 110

Ser Phe Thr Ser Val Ala Ala Gly Gln Val Leu Leu Asn Ala Gly Gln
115 120 125

Asn Thr Ile Asp Ile Val Asn Asn Trp Gly Trp Tyr Leu Ile Asp Ser
130 135 140

Ile Thr Leu Thr Pro Ser Ala Pro Arg Pro Pro His Asp Ile Asn Pro
145 150 155 160

Asn Leu Asn Asn Pro Asn Ala Asp Thr Asn Ala Lys Lys Leu Tyr Ser
165 170 175

Tyr Leu Arg Ser Val Tyr Gly Asn Lys Ile Ile Ser Gly Gln Gln Glu
180 185 190

Leu His His Ala Glu Trp Ile Arg Gln Gln Thr Gly Lys Thr Pro Ala
195 200 205

Leu Val Ala Val Asp Leu Met Asp Tyr Ser Pro Ser Arg Val Glu Arg
210 215 220

Gly Thr Thr Ser His Ala Val Glu Asp Ala Ile Ala His His Asn Ala
225 230 235 240

Gly Gly Ile Val Ser Val Leu Trp His Trp Asn Ala Pro Val Gly Leu
245 250 255

_SL

Tyr Asp Thr Glu Glu Asn Lys Trp Trp Ser Gly Phe Tyr Thr Arg Ala
260 265 270

Thr Asp Phe Asp Ile Ala Ala Thr Leu Ala Asn Pro Gln Gly Ala Asn
275 280 285

Tyr Thr Leu Leu Ile Arg Asp Ile Asp Ala Ile Ala Val Gln Leu Lys
290 295 300

Arg Leu Glu Ala Ala Gly Val Pro Val Leu Trp Arg Pro Leu His Glu
305 310 315 320

Ala Glu Gly Gly Trp Phe Trp Trp Gly Ala Lys Gly Pro Glu Pro Ala
325 330 335

Lys Gln Leu Trp Asp Ile Leu Tyr Glu Arg Leu Thr Val His His Gly
340 345 350

Leu Asp Asn Leu Ile Trp Val Trp Asn Ser Ile Leu Glu Asp Trp Tyr
355 360 365

Pro Gly Asp Asp Thr Val Asp Ile Leu Ser Ala Asp Val Tyr Ala Gln
370 375 380

Gly Asn Gly Pro Met Ser Thr Gln Tyr Asn Glu Leu Ile Ala Leu Gly
385 390 395 400

Arg Asp Lys Lys Met Ile Ala Ala Ala Glu Val Gly Ala Ala Pro Leu
405 410 415

Pro Gly Leu Leu Gln Ala Tyr Gln Ala Asn Trp Leu Trp Phe Ala Val
420 425 430

Trp Gly Asp Asp Phe Ile Asn Asn Pro Ser Trp Asn Thr Val Ala Val
435 440 445

_SL

Leu Asn Glu Ile Tyr Asn Ser Asp Tyr Val Leu Thr Leu Asp Glu Ile
450 455 460

Gln Gly Trp Arg Ser
465

<210> 15
<211> 493
<212> PRT
<213> Trichoderma reesei

<400> 15
Met Ala Gly Lys Leu Ile Leu Val Ala Leu Ala Ser Leu Val Ser Leu
1 5 10 15

Ser Ile Gln Gln Asn Cys Ala Ala Leu Phe Gly Gln Cys Gly Gly Ile
20 25 30

Gly Trp Ser Gly Thr Thr Cys Cys Val Ala Gly Ala Gln Cys Ser Phe
35 40 45

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

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

Ser Ser Ser Val Gly Ser Ser Ser Pro Gly Gly Asn Ser Pro Thr Gly
85 90 95

Ser Ala Ser Thr Tyr Thr Thr Thr Asp Thr Ala Thr Val Ala Pro His
100 105 110

Ser Gln Ser Pro Tyr Pro Ser Ile Ala Ala Ser Ser Cys Gly Ser Trp
115 120 125

Thr Leu Val Asp Asn Val Cys Cys Pro Ser ^{SL}Tyr Cys Ala Asn Asp Asp
 130 135 140

Thr Ser Glu Ser Cys Ser Gly Cys Gly Thr Cys Thr Thr Pro Pro Ser
 145 150 155 160

Ala Asp Cys Lys Ser Gly Thr Met Tyr Pro Glu Val His His Val Ser
 165 170 175

Ser Asn Glu Ser Trp His Tyr Ser Arg Ser Thr His Phe Gly Leu Thr
 180 185 190

Ser Gly Gly Ala Cys Gly Phe Gly Leu Tyr Gly Leu Cys Thr Lys Gly
 195 200 205

Ser Val Thr Ala Ser Trp Thr Asp Pro Met Leu Gly Ala Thr Cys Asp
 210 215 220

Ala Phe Cys Thr Ala Tyr Pro Leu Leu Cys Lys Asp Pro Thr Gly Thr
 225 230 235 240

Thr Leu Arg Gly Asn Phe Ala Ala Pro Asn Gly Asp Tyr Tyr Thr Gln
 245 250 255

Phe Trp Ser Ser Leu Pro Gly Ala Leu Asp Asn Tyr Leu Ser Cys Gly
 260 265 270

Glu Cys Ile Glu Leu Ile Gln Thr Lys Pro Asp Gly Thr Asp Tyr Ala
 275 280 285

Val Gly Glu Ala Gly Tyr Thr Asp Pro Ile Thr Leu Glu Ile Val Asp
 290 295 300

Ser Cys Pro Cys Ser Ala Asn Ser Lys Trp Cys Cys Gly Pro Gly Ala
 305 310 315 320

Asp His Cys Gly Glu Ile Asp Phe Lys Tyr ^{SL}Gly Cys Pro Leu Pro Ala
 325 330 335

Asp Ser Ile His Leu Asp Leu Ser Asp Ile Ala Met Gly Arg Leu Gln
 340 345 350

Gly Asn Gly Ser Leu Thr Asn Gly Val Ile Pro Thr Arg Tyr Arg Arg
 355 360 365

Val Gln Cys Pro Lys Val Gly Asn Ala Tyr Ile Trp Leu Arg Asn Gly
 370 375 380

Gly Gly Pro Tyr Tyr Phe Ala Leu Thr Ala Val Asn Thr Asn Gly Pro
 385 390 395 400

Gly Ser Val Thr Lys Ile Glu Ile Lys Gly Ala Asp Thr Asp Asn Trp
 405 410 415

Val Ala Leu Val His Asp Pro Asn Tyr Thr Ser Ser Arg Pro Gln Glu
 420 425 430

Arg Tyr Gly Ser Trp Val Ile Pro Gln Gly Ser Gly Pro Phe Asn Leu
 435 440 445

Pro Val Gly Ile Arg Leu Thr Ser Pro Thr Gly Glu Gln Ile Val Asn
 450 455 460

Glu Gln Ala Ile Lys Thr Phe Thr Pro Pro Ala Thr Gly Asp Pro Asn
 465 470 475 480

Phe Tyr Tyr Ile Asp Ile Gly Val Gln Phe Ser Gln Asn
 485 490