

PhoenixTemp56514.tmp.txt
SEQUENCE LISTING

<110> Novozymes A/S
<120> LACCASE FOR DETOXIFICATION OF FEED PRODUCTS
<130> 11338.204-WO
<160> 3
<170> PatentIn version 3.5
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<213> Myceliophthora thermophila

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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
Page 1

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

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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
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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
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Arg Trp Val Glu Glu Gly Glu Trp Leu Val Lys Ala
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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

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Phe Gln Leu Asn Val Ile Asp Asn Leu Thr Asn His Thr Met Val Lys
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 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
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 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
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Asp Ala Leu Asp Pro Ser Asp Gln
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<213> Streptomyces coelicolor

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<221> mat_peptide
<222> (1)..(343)

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Ala Ala Lys Gly Ile Thr Ala Arg Thr Ala Pro Ala Gly Gly Glu Val
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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

PhoenixTemp56514.tmp.txt

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