

17894PCT00_ST25 (4).txt
SEQUENCE LISTING

<110> Danisco US Inc., Genencor Division
<120> METHODS AND MATERIALS FOR DEGRADING PYRETHROID
<130> 17894PCT00
<160> 4
<170> PatentIn version 3.5
<210> 1
<211> 325
<212> PRT
<213> Pseudomonas diminuta

<400> 1

Met Gln Thr Arg Arg Val Val Leu Lys Ser Ala Ala Ala Arg Thr Leu
1 5 10 15

Leu Gly Gly Leu Ala Gly Cys Ala Thr Trp Leu Asp Arg Ser Ala Gln
20 25 30

Ala Met Arg Ser Ile Arg Ala Arg Pro Ile Thr Ile Ser Glu Ala Gly
35 40 45

Phe Thr Leu Thr His Glu Asp Ile Ser Ala Ala Arg Gln Asp Ser Cys
50 55 60

Val Leu Gly Gln Ser Ser Ser Val Ala Gln Ser Ser Ser Gly Lys Gly
65 70 75 80

Cys Glu Arg Ile Ala Arg Gln Ser Gly Trp Arg Ala Asn Asp Cys Arg
85 90 95

Cys Val Asp Phe Arg Tyr Arg Ser Arg Arg Gln Phe Ile Gly Arg Gly
100 105 110

Phe Ala Gly Cys Arg Arg Ser Tyr Leu Ala Ala Thr Gly Leu Trp Phe
115 120 125

Asp Pro Pro Leu Ser Met Arg Leu Arg Tyr Val Glu Glu Leu Thr Leu
130 135 140

Val Leu Pro Ala Val Arg Phe Asn Met Ala Ser Lys Tyr Thr Gly Ile
145 150 155 160

Arg Ala Gly Ile Ile Lys Val Ala Thr Thr Gly Lys Ala Thr Pro Phe
165 170 175

Gln Glu Leu Val Leu Lys Ala Ala Ala Arg Ala Ser Leu Ala Thr Gly
180 185 190

Val Pro Val Thr Thr His Thr Ala Ala Ser Gln Arg Asp Gly Glu Arg
195 200 205

Side

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Gly Arg Pro Pro Phe Leu Ser Pro Lys Leu Glu Pro Ser Arg Val Cys
210 215 220

Ile Gly His Ser Asp Asp Thr Asp Asp Leu Ser Tyr Leu Thr Ala Leu
225 230 235 240

Leu Arg Gly Tyr Leu Ile Gly Leu Asp His Ile Pro His Ser Ala Ile
245 250 255

Gly Leu Glu Asp Asn Ala Ser Ala Ser Pro Leu Leu Gly Ile Arg Ser
260 265 270

Trp Gln Thr Arg Ala Leu Leu Ile Lys Ala Leu Ile Asp Gln Gly Tyr
275 280 285

Met Lys Gln Ile Leu Val Ser Asn Asp Trp Leu Phe Gly Phe Ser Ser
290 295 300

Tyr Val Thr Asn Ile Met Asp Val Met Asp Arg Val Asn Pro Asp Gly
305 310 315 320

Met Ala Phe Ile His
325

<210> 2
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide

<400> 2

Ser Ile Gly Thr
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<210> 3
<211> 335
<212> PRT
<213> Unknown

<220>
<223> Organophosphorus hydrolase of unknown origin

<400> 3

Met Ile Gly Thr Gly Asp Arg Ile Asn Thr Val Arg Gly Pro Ile Thr
1 5 10 15

Ile Ser Glu Ala Gly Phe Thr Leu Thr His Glu His Ile Cys Gly Ser
20 25 30

Ser Ala Gly Phe Leu Arg Ala Trp Pro Glu Phe Phe Gly Ser Arg Lys
35 40 45

Side

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Ala Leu Ala Glu Lys Ala Val Arg Gly Leu Arg Arg Ala Arg Ala Ala
50 55 60

Gly Val Arg Thr Ile Val Asp Val Ser Thr Phe Asp Ile Gly Arg Asp
65 70 75 80

Val Ser Leu Leu Ala Glu Val Ser Arg Ala Ala Asp Val His Ile Val
85 90 95

Ala Ala Thr Gly Leu Trp Phe Asp Pro Pro Leu Ser Met Arg Leu Arg
100 105 110

Ser Val Gly Glu Leu Thr Gln Phe Phe Leu Arg Glu Ile Gln Tyr Gly
115 120 125

Ile Glu Asp Thr Gly Ile Arg Ala Gly Ile Ile Lys Val Ala Thr Thr
130 135 140

Gly Lys Ala Thr Pro Phe Gln Glu Leu Val Leu Lys Ala Ala Ala Arg
145 150 155 160

Ala Ser Leu Ala Thr Gly Val Pro Val Thr Thr His Thr Ala Ala Ser
165 170 175

Gln Arg Asp Gly Glu Gln Gln Ala Ala Ile Phe Glu Ser Glu Gly Leu
180 185 190

Ser Pro Ser Arg Val Cys Ile Gly His Ser Asp Asp Thr Asp Asp Leu
195 200 205

Ser Tyr Leu Thr Ala Leu Ala Ala Arg Gly Tyr Leu Ile Gly Leu Asp
210 215 220

His Ile Pro His Ser Ala Ile Gly Leu Glu Asp Asn Ala Ser Ala Ser
225 230 235 240

Ala Leu Leu Gly Ile Arg Ser Trp Gln Thr Arg Ala Leu Leu Ile Lys
245 250 255

Ala Leu Ile Asp Gln Gly Tyr Met Lys Gln Ile Leu Val Ser Asn Asp
260 265 270

Trp Leu Phe Gly Phe Ser Ser Tyr Val Thr Asn Ile Met Asp Val Met
275 280 285

Asp Arg Val Asn Pro Asp Gly Met Ala Phe Ile Pro Leu Arg Val Ile
290 295 300

Pro Phe Leu Arg Glu Lys Gly Val Pro Gln Glu Thr Leu Ala Gly Ile
305 310 315 320

Side

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

<210> 4
<211> 336
<212> PRT
<213> Unknown

<220>
<223> Organophosphorus hydrolase of unknown origin
<400> 4

Met Ile Gly Thr Gly Asp Arg Ile Asn Thr Val Arg Gly Pro Ile Thr
1 5 10 15

Ile Ser Glu Ala Gly Phe Thr Leu Thr His Glu His Ile Cys Gly Ser
20 25 30

Ser Ala Gly Phe Leu Arg Ala Trp Pro Glu Phe Phe Gly Ser Arg Lys
35 40 45

Ala Leu Ala Glu Lys Ala Val Arg Gly Leu Arg Arg Ala Arg Ala Ala
50 55 60

Gly Val Arg Thr Ile Val Asp Val Ser Thr Phe Asp Ile Gly Arg Asp
65 70 75 80

Val Ser Leu Leu Ala Glu Val Ser Arg Ala Ala Asp Val His Ile Val
85 90 95

Ala Ala Thr Gly Leu Trp Phe Asp Pro Pro Leu Ser Met Arg Leu Arg
100 105 110

Ser Val Glu Glu Leu Thr Gln Phe Phe Leu Arg Glu Ile Gln Tyr Gly
115 120 125

Ile Lys Asp Thr Gly Ile Arg Ala Gly Ile Ile Lys Val Ala Thr Thr
130 135 140

Gly Lys Ala Thr Pro Phe Gln Glu Leu Val Leu Lys Ala Ala Ala Arg
145 150 155 160

Ala Ser Leu Ala Thr Gly Val Pro Val Thr Thr His Thr Ala Ala Ser
165 170 175

Gln Arg Asp Gly Glu Gln Gln Ala Ala Ile Phe Glu Ser Glu Gly Leu
180 185 190

Ser Pro Ser Arg Val Cys Ile Gly His Ser Asp Asp Thr Asp Asp Leu
195 200 205

Ser Tyr Leu Thr Ala Leu Ala Ala Arg Gly Tyr Leu Ile Gly Leu Asp
210 215 220

Side

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His Ile Pro His Ser Ala Ile Gly Leu Glu Asp Asn Ala Ser Ala Ser
225 230 235 240

Ala Leu Leu Gly Ile Arg Ser Trp Gln Thr Arg Ala Leu Leu Ile Lys
245 250 255

Ala Leu Ile Asp Gln Gly Tyr Met Lys Gln Ile Leu Val Ser Asn Asp
260 265 270

Trp Leu Phe Gly Phe Ser Ser Tyr Val Thr Asn Ile Met Asp Val Met
275 280 285

Asp Arg Val Asn Pro Asp Gly Met Ala Phe Ile Pro Leu Arg Val Ile
290 295 300

Pro Phe Leu Arg Glu Lys Gly Val Pro Gln Glu Thr Leu Ala Gly Ile
305 310 315 320

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