

SEQUENCE LISTING

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<120> Polypeptides having phytase activity and nucleic acids encoding same

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<160> 26

<170> PatentIn version 3.5

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cgc tgg acg cta cca ggg caa ccc gat aac acc cct ccg ggc ggc gct 1104
Arg Trp Thr Leu Pro Gly Gln Pro Asp Asn Thr Pro Pro Gly Gly Ala
320 325 330 335

tta gtc ttt gag cgt ttg gcc gat aag tca ggg aaa caa tat gtt agc 1152
Leu Val Phe Glu Arg Leu Ala Asp Lys Ser Gly Lys Gln Tyr Val Ser
340 345 350

gtg agc atg gtg tat cag act ctc gag cag ttg cga tcc caa aca cca 1200
Val Ser Met Val Tyr Gln Thr Leu Glu Gln Leu Arg Ser Gln Thr Pro
355 360 365

ctt agc ctt aat caa cct gcg gga agc gtt cag cta aaa att cct ggc 1248
Leu Ser Leu Asn Gln Pro Ala Gly Ser Val Gln Leu Lys Ile Pro Gly
370 375 380

tgt aac gac cag acg gct gaa gga tac tgc cca ctg tcg aca ttc aca 1296
Cys Asn Asp Gln Thr Ala Glu Gly Tyr Cys Pro Leu Ser Thr Phe Thr
385 390 395

cgc gtg gtt agc caa agc gtg gaa ccc ggc tgc cag cta cag taa 1341
Arg Val Val Ser Gln Ser Val Glu Pro Gly Cys Gln Leu Gln
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<400> 6

Met Thr Phe Ser Ala Phe Asn Arg Lys Lys Leu Thr Leu His Pro Gly
-30 -25 -20

Leu Phe Val Ala Leu Ser Ala Ile Phe Ser Leu Gly Ser Thr Ala Tyr
-15 -10 -5

Ala Asn Asp Thr Pro Ala Ser Gly Tyr Gln Val Glu Lys Val Val Ile
-1 1 5 10 15

Leu Ser Arg His Gly Val Arg Ala Pro Thr Lys Met Thr Gln Thr Met
20 25 30

Arg Asp Val Thr Pro Asn Thr Trp Pro Glu Trp Pro Val Lys Leu Gly
35 40 45

Tyr Ile Thr Pro Arg Gly Glu His Leu Ile Ser Leu Met Gly Gly Phe
50 55 60

Tyr Arg Glu Lys Phe Gln Gln Gln Gly Ile Leu Ser Gln Gly Ser Cys

65

70

75

Pro Ala Pro Asn Ser Ile Tyr Val Trp Ala Asp Val Asp Gln Arg Thr
80 85 90 95

Leu Lys Thr Gly Glu Ala Phe Leu Ala Gly Leu Ala Pro Gln Cys Gly
100 105 110

Leu Thr Ile His His Gln Gln Asn Leu Glu Lys Ala Asp Pro Leu Phe
115 120 125

His Pro Val Lys Ala Gly Thr Cys Ser Met Asp Lys Thr Gln Val Gln
130 135 140

Gln Ala Val Glu Lys Glu Ala Gln Thr Pro Ile Asp Asn Leu Asn Gln
145 150 155

His Tyr Ile Pro Ser Leu Ala Leu Met Asn Thr Thr Leu Asn Phe Ser
160 165 170 175

Thr Ser Ala Trp Cys Gln Lys His Ser Ala Asp Lys Ser Cys Asp Leu
180 185 190

Ala Gln Ser Met Pro Ser Lys Leu Ser Ile Lys Asp Asn Gly Asn Lys
195 200 205

Val Ala Leu Asp Gly Ala Ile Gly Leu Ser Ser Thr Leu Ala Glu Ile
210 215 220

Phe Leu Leu Glu Tyr Ala Gln Gly Met Pro Gln Ala Ala Trp Gly Asn
225 230 235

Ile His Ser Glu Gln Glu Trp Ala Ser Leu Leu Lys Leu His Asn Ala
240 245 250 255

Gln Phe Asp Leu Met Ala Arg Thr Pro Tyr Ile Ala Thr His Asn Gly
260 265 270

Thr Pro Leu Leu Gln Thr Ile Ser Asn Ala Leu Glu Pro Lys Ala Asp
275 280 285

Val Ser Lys Leu Pro Gly Ile Ser Pro Asp Asn Lys Ile Leu Phe Leu
290 295 300

Ala Gly His Asp Thr Asn Ile Ala Asn Ile Ala Gly Met Leu Asn Met
305 310 315

Arg Trp Thr Leu Pro Gly Gln Pro Asp Asn Thr Pro Pro Gly Gly Ala
 320 325 330 335

Leu Val Phe Glu Arg Leu Ala Asp Lys Ser Gly Lys Gln Tyr Val Ser
 340 345 350

Val Ser Met Val Tyr Gln Thr Leu Glu Gln Leu Arg Ser Gln Thr Pro
 355 360 365

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

Cys Asn Asp Gln Thr Ala Glu Gly Tyr Cys Pro Leu Ser Thr Phe Thr
 385 390 395

Arg Val Val Ser Gln Ser Val Glu Pro Gly Cys Gln Leu Gln
 400 405 410

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 Met Lys Lys Pro Leu Gly Lys Ile Val Ala Ser Thr Ala Leu Leu Ile
 1 5 10 15
 tct gtt gct ttt agt tca tcg atc gca tcg gct 81
 Ser Val Ala Phe Ser Ser Ser Ile Ala Ser Ala
 20 25

<210> 8
 <211> 27
 <212> PRT
 <213> Bacillus licheniformis

<400> 8
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 1 5 10 15

Ser Val Ala Phe Ser Ser Ser Ile Ala Ser Ala
20 25

<210> 9
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<212> DNA
<213> Artificial

<220>
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<220>
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<223> n is a, c, g, or t

<220>
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<222> (15)..(15)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (18)..(18)
<223> n is a, c, g, or t

<220>
<221> misc_feature
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<223> n is a, c, g, or t

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catggtgtgc gngcncnac naa

23

<210> 10
<211> 27
<212> DNA
<213> Artificial

<220>
<223> Primer 2065

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<223> Y means T or C; R means A or G

<220>
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<223> n is a, c, g, or t

<220>

<221> misc_feature
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cccaccaggn ggngtrttrt cnggytg

27

<210> 11
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<212> DNA
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<220>
<223> Primer 2138

<400> 11
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18

<210> 12
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<220>
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20

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<220>
<223> Primer 2136

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<210> 14
<211> 22
<212> DNA
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22

<210> 15
<211> 29
<212> DNA
<213> Artificial

<220>
<223> Primer 315

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<223> Y means T or C; M means A or C

<220>
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<222> (21)..(21)
<223> n is a, c, g, or t

<220>
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<222> (27)..(27)
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<400> 15
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29

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<220>
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<223> R means A or G

<220>
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28

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ccaggttggt atcatggcc 19

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aagcttcgcc agttttaagc g 21

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<220>
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<400> 21
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<220>
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<400> 22
tcctgctgga atatgcgcaa gg 22

<210> 23
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<220>
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<400> 23
ttcgcccggtt ttaagcgtg 19

<210> 24
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<220>
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<400> 24
actgccctgc gataaaatgc cc 22

<210> 25
<211> 20
<212> DNA
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<220>
<223> Primer 2019

<400> 25
tttcctgctg gaatatgcgc 20

<210> 26
<211> 21
<212> DNA
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<220>
<223> Primer 2020

<400> 26
ttgatggcgc gcacacctta c 21