

G1000PCT.ST25
SEQUENCE LISTING

<110> Gesellschaft für Biotechnologische Forschung mbH
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Chernikova, Tatjana
Golyshin, Peter
Timmis, Kenneth
Yakimov, Michail

<120> Transgenic organisms with lower growth temperatures

<130> G1000PCT

<150> EP 03023032.0

<151> 2003-10-13

<160> 28

<170> PatentIn version 3.1

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<211> 97

<212> PRT

<213> artificial sequence

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35 40 45

Leu Asp Asn Gly Ser Val Gln Ala Leu Ala Val Asn Glu Gly Asp Val
Seite 1

50

55

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35 40 45

Ile Thr Lys Asp Gly Val Ser Val Ala Arg Glu Ile Glu Leu Lys Asp
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Lys Phe Glu Asn Met Gly Ala Gln Met Val Lys Glu Val Ala Ser Gln
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Ala Asn Asp Gln Ala Gly Asp Gly Thr Thr Thr Ala Thr Val Leu Ala
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Gln Ala Ile Ile Ser Glu Gly Leu Lys Ser Val Ala Ala Gly Met Asn
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Pro Met Asp Leu Lys Arg Gly Ile Asp Lys Ala Thr Ala Ala Val Val
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Ala Ala Ile Lys Glu Gln Ala Gln Pro Cys Leu Asp Thr Lys Ala Ile
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Ala Gln Val Gly Thr Ile Ser Ala Asn Ala Asp Glu Thr Val Gly Arg
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 Met Gln Phe Asp Arg Gly Tyr Leu Ser Pro Tyr Phe Ile Asn Asn Gln
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 Glu Lys Met Thr Val Glu Met Glu Asn Pro Leu Ile Leu Leu Val Asp
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 Ala Lys Ser Gly Arg Pro Leu Leu Ile Val Ala Glu Asp Val Glu Gly
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 Val Ala Ala Val Lys Ala Pro Gly Phe Gly Asp Arg Arg Lys Ala Met
 275 280 285
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 Leu Gly Met Ser Leu Glu Thr Ala Asp Pro Ser Ser Leu Gly Thr Ala
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 Val Ala Leu Ile Arg Ala Leu Ser Ser Val Thr Val Val Gly Asp Asn
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Glu Asp Gln Asn Val Gly Ile Ala Leu Ala Leu Arg Ala Met Glu Ala
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Pro Ile Arg Gln Ile Ala Gly Asn Ala Gly Ala Glu Gly Ser Val Val
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Val Asp Lys Val Lys Ser Gly Thr Gly Ser Phe Gly Phe Asn Ala Ser
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Thr Gly Glu Tyr Gly Asp Met Ile Ala Met Gly Ile Leu Asp Pro Ala
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Lys Val Thr Arg Ser Ser Leu Gln Ala Ala Ala Ser Ile Ala Gly Leu
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Pro Gly Met Met
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<212> DNA

<213> Oleispira antarctica

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<211> 333

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<213> oleispira antarctica

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Leu Thr Tyr Met Glu Arg Gln Gly Ser Asp Lys Asp Asn Ala Glu Ser
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Val Ile Leu Leu His Gly Phe Ser Ala Asp Lys Asp Asn Trp Ile Leu
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Phe Thr Lys Glu Phe Asp Glu Lys Tyr His Val Ile Ala Val Asp Leu
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Leu Ala Glu Gly Lys Asn Pro Leu Ile Ala Thr Asp Glu Ala Ser Phe
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Met Thr Asn Phe Gln Gln Lys Ile Glu Val Lys Met Ala Gln His Pro
 260 265 270

Leu Pro Thr Leu Ile Met Trp Gly Lys Glu Asp Arg Val Leu Asp Val
 275 280 285

Ser Ala Ala Ala Ala Phe Lys Lys Ile Ile Pro Gln Ala Thr Val His
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<213> artificial sequence

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 35 40 45

Leu Asp Asn Gly Ser Val Gln Ala Leu Ala Val Asn Glu Gly Asp Val
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35 40 45

Ile Thr Lys Asp Gly Val Ser Val Ala Arg Glu Ile Glu Leu Lys Asp
50 55 60

Lys Phe Glu Asn Met Gly Ala Gln Met Val Lys Glu Val Ala Ser Gln
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Ala Asn Asp Gln Ala Gly Asp Gly Thr Thr Thr Ala Thr Val Leu Ala
85 90 95

Gln Ala Ile Ile Ser Glu Gly Leu Lys Ser Val Ala Ala Gly Met Asn
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Pro Met Asp Leu Lys Arg Gly Ile Asp Lys Ala Thr Ala Ala Val Val
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Ala Ala Ile Lys Glu Gln Ala Gln Pro Cys Leu Asp Thr Lys Ala Ile
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Ala Gln Val Gly Thr Ile Ser Ala Asn Ala Asp Glu Thr Val Gly Arg
145 150 155 160

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 Glu Lys Met Thr Val Glu Met Glu Asn Pro Leu Ile Leu Leu Val Asp
 210 215 220
 Lys Lys Ile Asp Asn Leu Gln Glu Leu Leu Pro Ile Leu Glu Asn Val
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 Ala Lys Ser Gly Arg Pro Leu Leu Ile Val Ala Glu Asp Val Glu Gly
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 260 265 270
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 His Ala Thr Arg Ala Ala Val Glu Glu Gly Val Val Ala Gly Gly Gly
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 420 425 430

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Glu Asp Gln Asn Val Gly Ile Ala Leu Ala Leu Arg Ala Met Glu Ala
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Pro Ile Arg Gln Ile Ala Gly Asn Ala Gly Ala Glu Gly Ser Val Val
450 455 460

Val Asp Lys Val Lys Ser Gly Thr Gly Ser Phe Gly Phe Asn Ala Ser
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Thr Gly Glu Tyr Gly Asp Met Ile Ala Met Gly Ile Leu Asp Pro Ala
485 490 495

Lys Val Thr Arg Ser Ser Leu Gln Ala Ala Ala Ser Ile Ala Gly Leu
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Ala Gly Gly Met Pro Asp Met Gly Gly Met Gly Gly Met Gly Gly Met
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Pro Gly Met Met
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<213> oleispira antarctica

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35 40 45

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

Leu Thr Tyr Met Glu Arg Gln Gly Ser Asp Lys Asp Asn Ala Glu Ser
65 70 75 80

Val Ile Leu Leu His Gly Phe Ser Ala Asp Lys Asp Asn Trp Ile Leu
85 90 95

Phe Thr Lys Glu Phe Asp Glu Lys Tyr His Val Ile Ala Val Asp Leu
Seite 12

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105

110

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 145 150 155 160
 Ile Tyr Ser Leu Ser His Pro Glu Lys Val Lys Ser Leu Thr Leu Ile
 165 170 175
 Asp Ala Ala Gly Val Asp Gly Asp Thr Glu Ser Glu Tyr Tyr Lys Val
 180 185 190
 Leu Ala Glu Gly Lys Asn Pro Leu Ile Ala Thr Asp Glu Ala Ser Phe
 195 200 205
 Glu Tyr Arg Met Gly Phe Thr Met Thr Gln Pro Pro Phe Leu Pro Trp
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<220>

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<400> 9

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Gln Ala Ile Ile Ser Glu Gly Leu Lys Ser Val Ala Ala Gly Met Asn
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Seite 17

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Met Gln Phe Asp Arg Gly Tyr Leu Ser Pro Tyr Phe Ile Asn Asn Gln
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Glu Lys Met Thr Val Glu Met Glu Asn Pro Leu Ile Leu Leu Val Asp
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G1000PCT.ST25

<223> Cpn10, nucleotides 458 - 751

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Glu Lys Pro Asn Gln Gly Val Val Ile Ser Val Gly Thr Gly Arg Ile
          35          40          45

Leu Asp Asn Gly Ser Val Gln Ala Leu Ala Val Asn Glu Gly Asp Val
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Val Val Phe Gly Lys Tyr Ser Gly Gln Asn Thr Ile Asp Ile Asp Gly
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<223> Cpn60, nucleotides 458 - 751

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Pro Lys Gly Arg Asn Val Val Ile Glu Lys Ser Phe Gly Ala Pro Ile
          35          40          45

Ile Thr Lys Asp Gly Val Ser Val Ala Arg Glu Ile Glu Leu Lys Asp
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Lys Phe Glu Asn Met Gly Ala Gln Met Val Lys Glu Val Ala Ser Gln
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 115 120 125
 Ala Ala Ile Lys Glu Gln Ala Gln Pro Cys Leu Asp Thr Lys Ala Ile
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 Ala Gln Val Gly Thr Ile Ser Ala Asn Ala Asp Glu Thr Val Gly Arg
 145 150 155 160
 Leu Ile Ala Glu Ala Met Glu Lys Val Gly Lys Glu Gly Val Ile Thr
 165 170 175
 Val Glu Glu Gly Lys Gly Leu Glu Asp Glu Leu Asp Val Val Glu Gly
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 Met Gln Phe Asp Arg Gly Tyr Leu Ser Pro Tyr Phe Ile Asn Asn Gln
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 Glu Lys Met Thr Val Glu Met Glu Asn Pro Leu Ile Leu Leu Val Asp
 210 215 220
 Lys Lys Ile Asp Asn Leu Gln Glu Leu Leu Pro Ile Leu Glu Asn Val
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 Ala Lys Ser Gly Arg Pro Leu Leu Ile Val Ala Glu Asp Val Glu Gly
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 Gln Ala Leu Ala Thr Leu Val Val Asn Asn Leu Arg Gly Thr Phe Lys
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 Val Ala Ala Val Lys Ala Pro Gly Phe Gly Asp Arg Arg Lys Ala Met
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 Leu Gly Met Ser Leu Glu Thr Ala Asp Pro Ser Ser Leu Gly Thr Ala
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 Ser Lys Val Val Ile Asp Lys Glu Asn Thr Val Ile Val Asp Gly Ala
 325 330 335
 Gly Thr Glu Ala Ser Val Asn Thr Arg Val Asp Gln Ile Arg Ala Glu
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 Ile Glu Ser Ser Thr Ser Asp Tyr Asp Ile Glu Lys Leu Gln Glu Arg
 Seite 25

355

360

365

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 405 410 415
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 420 425 430
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 Val Asp Lys Val Lys Ser Gly Thr Gly Ser Phe Gly Phe Asn Ala Ser
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 Thr Gly Glu Tyr Gly Asp Met Ile Ala Met Gly Ile Leu Asp Pro Ala
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G1000PCT.ST25

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