

PhoenixTemp12226.tmp.txt
SEQUENCE LISTING

<110> Novo Nordisk A/S

<120> Humanized antibodies against human interferon alpha

<130> 7815

<160> 32

<170> PatentIn version 3.5

<210> 1

<211> 119

<212> PRT

<213> mus musculus

<400> 1

Gln Val Gln Leu Gln Gln Pro Gly Ala Glu Leu Val Lys Pro Gly Ala
1 5 10 15

Ser Val Lys Leu Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr
20 25 30

Trp Met His Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile
35 40 45

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

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

Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Phe Cys
85 90 95

Ala Arg Gly Gly Leu Gly Pro Ala Trp Phe Ala Tyr Trp Gly Gln Gly
100 105 110

Thr Leu Val Thr Val Ser Ala
115

<210> 2

<211> 113

<212> PRT

<213> Homo Sapiens

<400> 2

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr
20 25 30

Tyr Met His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
35 40 45

Gly Ile Ile Asn Pro Ser Gly Gly Ser Thr Ser Tyr Ala Gln Lys Phe
50 55 60

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Ser Thr Val Tyr
65 70 75 80

Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Tyr Phe Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser
100 105 110

Ser

<210> 3
<211> 119
<212> PRT
<213> artificial

<220>
<223> Humanized murine sequence

<400> 3

Gln Val Gln Leu Gln Gln Pro Gly Ala Glu Leu Val Lys Pro Gly Ala
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Ser Val Lys Leu Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr
20 25 30

Trp Met His Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile
35 40 45

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

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

Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Phe Cys
85 90 95

Ala Arg Gly Gly Leu Gly Pro Ala Trp Phe Ala Tyr Trp Gly Gln Gly
100 105 110

Thr Leu Val Thr Val Ser Ala
115

<210> 4
<211> 109
<212> PRT
<213> Mus Musculus

<400> 4

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

Glu Lys Val Thr Leu Thr Cys Ser Ala Gly Ser Ser Val Asp Ser Ser
 20 25 30

Tyr Leu Tyr Trp Tyr Gln Gln Lys Pro Gly Ser Ser Pro Lys Leu Trp
 35 40 45

Ile Tyr Ser Thr Ser Asn Leu Ala Ser Gly Val Pro Ala Arg Phe Ser
 50 55 60

Gly Ser Gly Ser Gly Thr Ser Tyr Ser Leu Thr Ile Ser Ser Met Glu
 65 70 75 80

Ala Glu Asp Ala Ala Ser Tyr Phe Cys His Gln Trp Ser Ser Tyr Pro
 85 90 95

Phe Thr Phe Gly Ser Gly Thr Lys Leu Glu Ile Lys Arg
 100 105

<210> 5

<211> 107

<212> PRT

<213> Homo Sapiens

<400> 5

Glu Ile Val Leu Thr Gln Ser Pro Ala Thr Leu Ser Leu Ser Pro Gly
 1 5 10 15

Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Tyr
 20 25 30

Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile
 35 40 45

Tyr Asp Ala Ser Asn Arg Ala Thr Gly Ile Pro Ala Arg Phe Ser Gly
 50 55 60

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Glu Pro
 65 70 75 80

Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln Arg Ser Asn Trp Pro Tyr
 85 90 95

Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys
 100 105

<210> 6

<211> 109

<212> PRT
 <213> artificial

<220>
 <223> Humanized sequence

<400> 6

Glu Ile Val Leu Thr Gln Ser Pro Ala Thr Leu Ser Leu Ser Pro Gly
 1 5 10 15

Glu Arg Ala Thr Leu Ser Cys Ser Ala Gly Ser Ser Val Asp Ser Ser
 20 25 30

Tyr Leu Tyr Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu
 35 40 45

Ile Tyr Ser Thr Ser Asn Leu Ala Ser Gly Ile Pro Ala Arg Phe Ser
 50 55 60

Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Glu
 65 70 75 80

Pro Glu Asp Phe Ala Val Tyr Tyr Cys His Gln Trp Ser Ser Tyr Pro
 85 90 95

Phe Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys Arg
 100 105

<210> 7
 <211> 119
 <212> PRT
 <213> Mus musculus

<400> 7

Gln Val Gln Leu Gln Gln Pro Gly Ala Glu Leu Val Lys Pro Gly Ala
 1 5 10 15

Ser Val Lys Leu Ser Cys Lys Ala Ser Gly Tyr Ser Phe Thr Ser Tyr
 20 25 30

Trp Met His Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile
 35 40 45

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

Lys Ser Lys Ala Thr Leu Thr Val Asp Lys Ser Ser Asn Ile Val Tyr
 65 70 75 80

Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Tyr Cys
 85 90 95

Val Arg Gly Gly Leu Gly Pro Ala Trp Phe Ala Tyr Trp Gly Gln Gly

100

105

110

Thr Leu Val Thr Val Ser Val
115

<210> 8
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<212> PRT
<213> homo sapiens

<400> 8

Gln Val Gln Leu Gln Gln Pro Gly Ala Glu Leu Val Lys Pro Gly Ala
1 5 10 15

Ser Val Lys Leu Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr
20 25 30

Trp Met His Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile
35 40 45

Gly Glu Ile Asn Pro Ser Asn Gly Arg Thr Asn Tyr Asn Glu Lys Phe
50 55 60

Lys Ser Lys Ala Thr Leu Thr Val Asp Lys Ser Ser Ser Thr Ala Tyr
65 70 75 80

Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Ala Trp Phe Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val
100 105 110

Ser

<210> 9
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<212> PRT
<213> mus musculus

<400> 9

Gln Ile Val Leu Thr Gln Ser Pro Ala Ile Met Ser Ala Ser Pro Gly
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Glu Lys Val Thr Leu Thr Cys Ser Ala Gly Ser Ser Val Gly Ser Ser
20 25 30

Tyr Phe Tyr Trp Tyr Gln Gln Lys Pro Gly Ser Ser Pro Lys Leu Trp
35 40 45

Ile Tyr Gly Thr Ser Asn Leu Ala Ser Gly Val Pro Ala Arg Phe Ser
50 55 60

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Gly Ser Gly Ser Gly Thr Ser Tyr Ser Leu Thr Ile Ser Ser Met Glu
65 70 75 80

Ala Glu Asp Ala Ala Ser Tyr Phe Cys His Gln Trp Ser Ser Tyr Pro
85 90 95

Phe Thr Phe Gly Ser Gly Thr Lys Leu Glu Ile Lys Arg
100 105

<210> 10
<211> 109
<212> PRT
<213> homo sapiens

<400> 10

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

Glu Lys Val Thr Leu Thr Cys Ser Ala Ser Ser Ser Val Ser Ser Ser
20 25 30

Tyr Leu Tyr Trp Tyr Gln Gln Lys Pro Gly Ser Ser Pro Lys Leu Trp
35 40 45

Ile Tyr Ser Thr Ser Asn Leu Ala Ser Gly Val Pro Ala Arg Phe Ser
50 55 60

Gly Ser Gly Ser Gly Thr Ser Tyr Ser Leu Thr Ile Ser Ser Met Glu
65 70 75 80

Ala Glu Asp Ala Ala Ser Tyr Phe Cys His Gln Trp Ser Ser Tyr Pro
85 90 95

Phe Thr Phe Gly Ser Gly Thr Lys Leu Glu Ile Lys Arg
100 105

<210> 11
<211> 19
<212> DNA
<213> artificial

<220>
<223> Primer

<400> 11
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19

<210> 12
<211> 25
<212> DNA
<213> artificial

<220>
<223> Primer

<400> 12
ctaactca ttcctgttga agctc 25

<210> 13
<211> 414
<212> DNA
<213> mus musculus

<400> 13
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tgtaaggctt ctggctacac cttcaccaac tactggatgc actgggtgaa gcagaggcct 180
ggacaaggcc ttgagtggat tggagagatt aatcctagcc acggtcgtac tatctacaat 240
gaaaacttca agagcaaggc cacactgact gtagacaaat cctccatcac agccttcattg 300
caactcagca gcctgacatc tgaggactct gcggtctatt tctgtgcaag agggggactg 360
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<210> 14
<211> 393
<212> DNA
<213> mus musculus

<400> 14
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agaggacaaa ttgttctcac ccagtctcca gcaatcatgt ctgcttctcc tggggagaag 120
gtcaccttga cctgcagtgc cggctcaagt gtagattcca gctatttgta ctggtaccag 180
cagaagccag gatcctcccc caaactctgg atttatagca catccaacct ggcttctgga 240
gtccctgctc gcttcagtgg cagtgggtct gggacctctt actctctcac aatcagcagc 300
atggaggctg aagatgctgc ctcttatttc tgccatcagt ggagtagtta cccattcacg 360
ttcggctcgg ggacaaaatt ggaaataaaa cgg 393

<210> 15
<211> 5
<212> PRT
<213> mus musculus

<400> 15
Asn Tyr Trp Met His
1 5

<210> 16
<211> 17
<212> PRT
<213> mus musculus

<400> 16
Glu Ile Asn Pro Ser His Gly Arg Thr Ile Tyr Asn Glu Asn Phe Lys
1 5 10 15

Ser

<210> 17
 <211> 10
 <212> PRT
 <213> mus musculus

<400> 17

Gly Gly Leu Gly Pro Ala Trp Phe Ala Tyr
 1 5 10

<210> 18
 <211> 12
 <212> PRT
 <213> mus musculus

<400> 18

Ser Ala Gly Ser Ser Val Asp Ser Ser Tyr Leu Tyr
 1 5 10

<210> 19
 <211> 7
 <212> PRT
 <213> mus musculus

<400> 19

Ser Thr Ser Asn Leu Ala Ser
 1 5

<210> 20
 <211> 9
 <212> PRT
 <213> mus musculus

<400> 20

His Gln Trp Ser Ser Tyr Pro Phe Thr
 1 5

<210> 21
 <211> 17
 <212> PRT
 <213> artificial

<220>
 <223> Humanized murine sequence

<400> 21

Glu Ile Asn Pro Ser His Gly Arg Thr Ile Tyr Ala Gln Lys Phe Gln
 1 5 10 15

Gly

<210> 22
 <211> 5

<212> PRT
 <213> mus musculus

<400> 22

Ser Tyr Trp Met His
 1 5

<210> 23
 <211> 17
 <212> PRT
 <213> mus musculus

<400> 23

Glu Ile Asn Pro Ser His Gly Arg Thr Ser Tyr Asn Glu Asn Phe Lys
 1 5 10 15

Ser

<210> 24
 <211> 12
 <212> PRT
 <213> mus musculus

<400> 24

Ser Ala Gly Ser Ser Val Gly Ser Ser Tyr Phe Tyr
 1 5 10

<210> 25
 <211> 7
 <212> PRT
 <213> mus musculus

<400> 25

Gly Thr Ser Asn Leu Ala Ser
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<210> 26
 <211> 35
 <212> DNA
 <213> artificial

<220>
 <223> Primer

<400> 26
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35

<210> 27
 <211> 31
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<220>
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<400> 27
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31

<210> 28
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 <212> DNA
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 tgcaaggcct ctgggtacag cttcaccagc tactggatgc actgggtgaa gcagaggcct 180
 ggacaaggcc ttgagtggat tggagagatt aatcctagcc acggtcgtac tagctacaat 240
 gagaacttca agagcaaggc cacactgact gtagacaaat cctccaacat agtctacatg 300
 caactcagca gcctgacatc tgaggactct gcgggtctatt actgtgtaag agggggactg 360
 ggacccgcct ggtttgctta ctggggccaa gggactctgg tcactgtctc tgta 414

<210> 29
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 <213> Mus musculus

<400> 29
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 gtcaccttga cctgcagtgc cggtcgaagt gtaggttcca gctactttta ctggtaccag 180
 cagaagccag gatcctcccc caaactctgg atttatggca catccaacct ggcttctgga 240
 gtccctgctc gcttcagtgg cagtgggtct gggacctctt actctctcac aatcagcagc 300
 atggaggctg aagatgctgc ctcttatttc tgccatcagt ggagtagtta tccattcacg 360
 ttcggctcgg ggacaaaatt ggaaataaaa cgg 393

<210> 30
 <211> 166
 <212> PRT
 <213> homo sapiens

<400> 30

Cys Asp Leu Pro Gln Thr His Ser Leu Gly Asn Arg Arg Ala Leu Ile
 1 5 10 15

Leu Leu Ala Gln Met Arg Arg Ile Ser Pro Phe Ser Cys Leu Lys Asp
 20 25 30

Arg His Asp Phe Glu Phe Pro Gln Glu Glu Phe Asp Asp Lys Gln Phe
 35 40 45

Gln Lys Ala Gln Ala Ile Ser Val Leu His Glu Met Ile Gln Gln Thr
 50 55 60

Phe Asn Leu Phe Ser Thr Lys Asp Ser Ser Ala Ala Leu Asp Glu Thr

65			70			75			80						
Leu	Leu	Asp	Glu	Phe 85	Tyr	Ile	Glu	Leu	Asp 90	Gln	Gln	Leu	Asn	Asp 95	Leu
Glu	Ser	Cys	Val 100	Met	Gln	Glu	Val	Gly 105	Val	Ile	Glu	Ser	Pro 110	Leu	Met
Tyr	Glu	Asp 115	Ser	Ile	Leu	Ala	Val 120	Arg	Lys	Tyr	Phe	Gln 125	Arg	Ile	Thr
Leu	Tyr 130	Leu	Thr	Glu	Lys	Lys 135	Tyr	Ser	Ser	Cys	Ala 140	Trp	Glu	Val	Val
Arg 145	Ala	Glu	Ile	Met	Arg 150	Ser	Phe	Ser	Leu	Ser 155	Ile	Asn	Leu	Gln	Lys 160
Arg	Leu	Lys	Ser	Lys 165	Glu										

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<210> 31
<211> 220
<212> PRT
<213> artificial
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<220>
<223> Humanized sequence
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<400> 31

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
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Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr
20 25 30

Trp Met His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
35 40 45

Gly Glu Ile Asn Pro Ser His Gly Arg Thr Ile Tyr Ala Gln Lys Phe
50 55 60

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Ser Thr Val Tyr
65 70 75 80

Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Gly Gly Leu Gly Pro Ala Trp Phe Ala Tyr Trp Gly Gln Gly
100 105 110

Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe
115 120 125

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Pro Leu Ala Pro Cys Ser Arg Ser Thr Ser Glu Ser Thr Ala Ala Leu
130 135 140

Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp
145 150 155 160

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

Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser
180 185 190

Ser Ser Leu Gly Thr Lys Thr Tyr Thr Cys Asn Val Asp His Lys Pro
195 200 205

Ser Asn Thr Lys Val Asp Lys Arg Val Glu Ser Lys
210 215 220

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<212> PRT
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<220>
<223> Humanized sequence

<400> 32

Glu Ile Val Leu Thr Gln Ser Pro Ala Thr Leu Ser Leu Ser Pro Gly
1 5 10 15

Glu Arg Ala Thr Leu Ser Cys Ser Ala Gly Ser Ser Val Asp Ser Ser
20 25 30

Tyr Leu Tyr Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu
35 40 45

Ile Tyr Ser Thr Ser Asn Leu Ala Ser Gly Ile Pro Ala Arg Phe Ser
50 55 60

Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Glu
65 70 75 80

Pro Glu Asp Phe Ala Val Tyr Tyr Cys His Gln Trp Ser Ser Tyr Pro
85 90 95

Phe Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys Arg Thr Val Ala
100 105 110

Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser
115 120 125

Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu

130

135

140

Ala	Lys	Val	Gln	Trp	Lys	Val	Asp	Asn	Ala	Leu	Gln	Ser	Gly	Asn	Ser
145					150					155					160

Gln	Glu	Ser	Val	Thr	Glu	Gln	Asp	Ser	Lys	Asp	Ser	Thr	Tyr	Ser	Leu
				165					170					175	

Ser	Ser	Thr	Leu	Thr	Leu	Ser	Lys	Ala	Asp	Tyr	Glu	Lys	His	Lys	Val
			180					185					190		

Tyr	Ala	Cys	Glu	Val	Thr	His	Gln	Gly	Leu	Ser	Ser	Pro	Val	Thr	Lys
		195					200					205			

Ser	Phe	Asn	Arg	Gly	Glu	Cys
210						215