

2014006872
SEQUENCE LISTING

<110> Xigen Inflammation Ltd.

<120> Use of cell-permeable peptide inhibitors of the JNK signal transduction pathway for the treatment of various diseases

<130> CX01P045W02

<160> 105

<170> PatentIn version 3.3

<210> 1

<211> 19

<212> PRT

<213> Artificial

<220>

<223> Description of sequence: Peptide L-IB1(s) (see Table 1)

<400> 1

Arg	Pro	Lys	Arg	Pro	Thr	Thr	Leu	Asn	Leu	Phe	Pro	Gln	Val	Pro	Arg
1				5					10					15	

Ser Gln Asp

<210> 2

<211> 19

<212> PRT

<213> Artificial

<220>

<223> Description of sequence: Peptide D-IB1(s) (see Table 1)

<220>

<221> MUTAGEN

<222> (1)..(19)

<223> all amino acids are D-amino acids

<400> 2

Asp	Gln	Ser	Arg	Pro	Val	Gln	Pro	Phe	Leu	Asn	Leu	Thr	Thr	Pro	Arg
1				5					10					15	

Lys Pro Arg

<210> 3
 <211> 19
 <212> PRT
 <213> Artificial

<220>
 <223> Description of sequence: Peptide L-IB (generic) (s) (see Table 1)

<220>
 <221> misc_feature
 <223> Description of sequence: Description of sequence: general
 formula: NH₂-Xnb-Xna-RPTTLXLLLLXXXXXQD-Xnb-COOH (see Table 1)

<220>
 <221> VARIANT
 <222> (1)..(1)
 <223> Xaa is Xnb as defined in the general formula, wherein Xaa represents an amino acid residue, preferably selected from any (native) amino acid residue;

<220>
 <221> REPEAT
 <222> (1)..(1)
 <223> Xaa is Xnb as defined in the general formula, wherein n is 0-5, 5-10, 10-15, 15-20, 20-30 or more for Xnb

<220>
 <221> VARIANT
 <222> (2)..(2)
 <223> Xaa is Xna as defined in the general formula, wherein Xaa represents an amino acid residue, preferably selected from any (native) amino acid residue except serine and threonine

<220>
 <221> REPEAT
 <222> (2)..(2)
 <223> Xaa is Xna as defined in the general formula, wherein n is 0 or 1

<220>
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 <222> (8)..(8)
 <223> Xaa represents an amino acid residue, preferably selected from any (native) amino acid residue;

<220>
 <221> VARIANT
 <222> (10)..(16)
 <223> Xaa represents an amino acid residue, preferably selected from

any (native) amino acid residue;

<220>

<221> REPEAT

<222> (19)..(19)

<223> Xaa is Xnb as defined in the general formula, wherein n is 0-5, 5-10, 10-15, 15-20, 20-30 or more for Xnb

<220>

<221> VARIANT

<222> (19)..(19)

<223> Xaa is Xnb as defined in the general formula, wherein Xaa represents an amino acid residue, preferably selected from any (native) amino acid residue;

<400> 3

Xaa	Xaa	Arg	Pro	Thr	Thr	Leu	Xaa	Leu	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa
1				5				10					15		

Gln Asp Xaa

<210> 4

<211> 19

<212> PRT

<213> Artificial

<220>

<223> Description of sequence: Peptide D-IB (generic) (s) (see Table 1)

<220>

<221> misc_feature

<223> Description of sequence: general formula:
NH₂-Xnb-DQXXXXXXXXLXLTPR-Xna-Xnb-COOH,

<220>

<221> MUTAGEN

<222> (1)..(19)

<223> all amino acids are D-amino acids

<220>

<221> VARIANT

<222> (1)..(11)

<223> Xaa is Xnb as defined in the general formula, wherein Xaa represents an amino acid residue, preferably selected from any (native) amino acid residue;

<220>

<221> REPEAT
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 <223> Xaa is Xnb as defined in the general formula, wherein n is 0-5, 5-10, 10-15, 15-20, 20-30 or more for Xnb

 <220>
 <221> VARIANT
 <222> (4)..(10)
 <223> Xaa represents an amino acid residue, preferably selected from any (native) amino acid residue;

 <220>
 <221> VARIANT
 <222> (12)..(12)
 <223> Xaa represents an amino acid residue, preferably selected from any (native) amino acid residue;

 <220>
 <221> REPEAT
 <222> (18)..(18)
 <223> Xaa is Xna as defined in the general formula, wherein n is 0 or 1

 <220>
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 <222> (18)..(18)
 <223> Xaa is Xna as defined in the general formula, wherein Xaa represents an amino acid residue, preferably selected from any (native) amino acid residue except serine and Threonine

 <220>
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 <222> (18)..(18)
 <223> Xaa is Xna as defined in the general formula, wherein Xaa represents an amino acid residue, preferably selected from any (native) amino acid residue except serine and threonine

 <220>
 <221> REPEAT
 <222> (19)..(19)
 <223> Xaa is Xnb as defined in the general formula, wherein n is 0-5, 5-10, 10-15, 15-20, 20-30 or more for Xnb

 <220>
 <221> VARIANT
 <222> (19)..(19)
 <223> Xaa is Xnb as defined in the general formula, wherein Xaa represents an amino acid residue, preferably selected from any (native) amino acid residue;

 <400> 4

Xaa Asp Gln Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Leu Xaa Leu Thr Thr Pro

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1 5 10 15

Arg Xaa Xaa

<210> 5
<211> 10
<212> PRT
<213> Artificial

<220>
<223> Description of sequence: Peptide L-TAT (see Table 1)

<400> 5

Gly Arg Lys Lys Arg Arg Gln Arg Arg Arg
1 5 10

<210> 6
<211> 10
<212> PRT
<213> Artificial

<220>
<223> Description of sequence: Peptide D-TAT (see Table 1)

<220>
<221> MUTAGEN
<222> (1)..(10)
<223> all amino acids are D-amino acids

<400> 6

Arg Arg Arg Gln Arg Arg Lys Lys Arg Gly
1 5 10

<210> 7
<211> 11
<212> PRT
<213> Artificial

<220>
<223> Description of sequence: Peptide L-generic-TAT (s) (see Table 1)

<220>
<221> misc_feature

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<223> General formula: NH₂-Xnb-RKKRRQRRR-Xnb-COOH (see Table 1)

<220>

<221> VARIANT

<222> (1)..(1)

<223> Xaa is Xnb as defined in the general formula, wherein Xaa represents an amino acid residue, preferably selected from any (native) amino acid residue;

<220>

<221> REPEAT

<222> (1)..(1)

<223> Xaa is Xnb as defined in the general formula, wherein n is 0-5, 5-10, 10-15, 15-20, 20-30 or more for Xnb

<220>

<221> VARIANT

<222> (11)..(11)

<223> Xaa is Xnb as defined in the general formula, wherein Xaa represents an amino acid residue, preferably selected from any (native) amino acid residue;

<220>

<221> REPEAT

<222> (11)..(11)

<223> Xaa is Xnb as defined in the general formula, wherein n is 0-5, 5-10, 10-15, 15-20, 20-30 or more for Xnb

<400> 7

Xaa Arg Lys Lys Arg Arg Gln Arg Arg Arg Xaa
1 5 10

<210> 8

<211> 11

<212> PRT

<213> Artificial

<220>

<223> Description of sequence: Peptide D-generic-TAT (s) (see Table 1)

<220>

<221> misc_feature

<223> General formula: NH₂-Xnb-RRRQRRKKR-Xnb-COOH

<220>

<221> MUTAGEN

<222> (1)..(10)

<223> all amino acids are D-amino acids

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<220>
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<223> Xaa is Xnb as defined in the general formula, wherein Xaa represents an amino acid residue, preferably selected from any (native) amino acid residue;

<220>
<221> REPEAT
<222> (1)..(1)
<223> Xaa is Xnb as defined in the general formula, wherein n is 0-5, 5-10, 10-15, 15-20, 20-30 or more for Xnb

<220>
<221> VARIANT
<222> (11)..(11)
<223> Xaa is Xnb as defined in the general formula, wherein Xaa represents an amino acid residue, preferably selected from any (native) amino acid residue;

<220>
<221> REPEAT
<222> (11)..(11)
<223> Xaa is Xnb as defined in the general formula, wherein n is 0-5, 5-10, 10-15, 15-20, 20-30 or more for Xnb

<400> 8

Xaa Arg Arg Arg Gln Arg Arg Lys Lys Arg Xaa
1 5 10

<210> 9
<211> 31
<212> PRT
<213> Artificial

<220>
<223> Description of sequence: L-TAT-IB1 (s) (see Table 1)

<400> 9

Gly Arg Lys Lys Arg Arg Gln Arg Arg Arg Pro Pro Arg Pro Lys Arg
1 5 10 15

Pro Thr Thr Leu Asn Leu Phe Pro Gln Val Pro Arg Ser Gln Asp
20 25 30

<210> 10
<211> 29

<212> PRT
 <213> Artificial

<220>
 <223> Description of sequence: Peptide L-TAT (generic) (s) (see Table 1)

<220>
 <221> misc_feature
 <223> Description of sequence: General formula:
 NH₂-Xnb-RKKRRQRRR-Xnb-Xna-RPTTLXLXXXXXXQD-Xnb-COOH

<220>
 <221> VARIANT
 <222> (1)..(1)
 <223> Xaa is Xnb as defined in the general formula, wherein Xaa represents an amino acid residue, preferably selected from any (native) amino acid residue;

<220>
 <221> REPEAT
 <222> (1)..(1)
 <223> Xaa is Xnb as defined in the general formula, wherein n is 0-5, 5-10, 10-15, 15-20, 20-30 or more for Xnb

<220>
 <221> VARIANT
 <222> (11)..(11)
 <223> Xaa is Xnb as defined in the general formula, wherein Xaa represents an amino acid residue, preferably selected from any (native) amino acid residue;

<220>
 <221> REPEAT
 <222> (11)..(11)
 <223> Xaa is Xnb as defined in the general formula, wherein n is 0-5, 5-10, 10-15, 15-20, 20-30 or more for Xnb

<220>
 <221> VARIANT
 <222> (12)..(12)
 <223> Xaa is Xna as defined in the general formula, wherein Xaa represents an amino acid residue, preferably selected from any (native) amino acid residue except serine and Threonine

<220>
 <221> REPEAT
 <222> (12)..(12)
 <223> Xaa is Xna as defined in the general formula, wherein n is 0 or 1

<220>

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<221> VARIANT
<222> (18)..(18)
<223> Xaa represents an amino acid residue, preferably selected from any (native) amino acid residue;

<220>
<221> VARIANT
<222> (20)..(26)
<223> Xaa represents an amino acid residue, preferably selected from any (native) amino acid residue;

<220>
<221> VARIANT
<222> (29)..(29)
<223> Xaa is Xnb as defined in the general formula, wherein Xaa represents an amino acid residue, preferably selected from any (native) amino acid residue;

<220>
<221> REPEAT
<222> (29)..(29)
<223> Xaa is Xnb as defined in the general formula, wherein n is 0-5, 5-10, 10-15, 15-20, 20-30 or more for Xnb

<400> 10

Xaa	Arg	Lys	Lys	Arg	Arg	Gln	Arg	Arg	Arg	Xaa	Xaa	Arg	Pro	Thr	Thr
1			5					10						15	

Leu	Xaa	Leu	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Gln	Asp	Xaa
			20					25				

<210> 11
<211> 31
<212> PRT
<213> Artificial

<220>
<223> Description of sequence: Peptid D-TAT-IB1 (s) (see Table 1)

<220>
<221> MUTAGEN
<222> (1)..(31)
<223> all amino acids are D-amino acids

<400> 11

Asp	Gln	Ser	Arg	Pro	Val	Gln	Pro	Phe	Leu	Asn	Leu	Thr	Thr	Pro	Arg
1				5					10					15	

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Lys Pro Arg Pro Pro Arg Arg Arg Gln Arg Arg Lys Lys Arg Gly
20 25 30

<210> 12

<211> 29

<212> PRT

<213> Artificial

<220>

<223> Description of sequence: Peptid: D-TAT (generic) (s) (see Table 1)

<220>

<221> misc_feature

<223> General formula:

NH₂-Xnb-DQXXXXXXXXLXLTPR-Xna-Xnb-RRRQRRKKR-Xnb-COOH,

<220>

<221> MUTAGEN

<222> (1)..(19)

<223> all amino acids are D-amino acids

<220>

<221> VARIANT

<222> (1)..(1)

<223> Xaa is Xnb as defined in the general formula, wherein Xaa represents an amino acid residue, preferably selected from any (native) amino acid residue;

<220>

<221> REPEAT

<222> (1)..(1)

<223> Xaa is Xnb as defined in the general formula, wherein n is 0-5, 5-10, 10-15, 15-20, 20-30 or more for Xnb

<220>

<221> VARIANT

<222> (4)..(10)

<223> Xaa represents an amino acid residue, preferably selected from any (native) amino acid residue;

<220>

<221> VARIANT

<222> (12)..(12)

<223> Xaa represents an amino acid residue, preferably selected from any (native) amino acid residue;

<220>

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<221> VARIANT
<222> (18)..(18)
<223> Xaa is Xna as defined in the general formula, wherein Xaa represents an amino acid residue, preferably selected from any (native) amino acid residue except serine and threonine

<220>
<221> REPEAT
<222> (18)..(18)
<223> Xaa is Xna as defined in the general formula, wherein n is 0 or 1

<220>
<221> VARIANT
<222> (19)..(19)
<223> Xaa is Xnb as defined in the general formula, wherein Xaa represents an amino acid residue, preferably selected from any (native) amino acid residue;

<220>
<221> REPEAT
<222> (19)..(19)
<223> Xaa is Xnb as defined in the general formula, wherein n is 0-5, 5-10, 10-15, 15-20, 20-30 or more for Xnb

<220>
<221> VARIANT
<222> (29)..(29)
<223> Xaa is Xnb as defined in the general formula, wherein Xaa represents an amino acid residue, preferably selected from any (native) amino acid residue;

<220>
<221> REPEAT
<222> (29)..(29)
<223> Xaa is Xnb as defined in the general formula, wherein n is 0-5, 5-10, 10-15, 15-20, 20-30 or more for Xnb

<400> 12

Xaa Asp Gln Xaa Xaa Xaa Xaa Xaa Xaa Xaa Leu Xaa Leu Thr Thr Pro
1 5 10 15

Arg Xaa Xaa Arg Arg Arg Gln Arg Arg Lys Lys Arg Xaa
20 25

<210> 13
<211> 29
<212> PRT
<213> Artificial

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<220>

<223> Description of sequence: peptide IB1-long (see Table 1)

<400> 13

Pro Gly Thr Gly Cys Gly Asp Thr Tyr Arg Pro Lys Arg Pro Thr Thr
1 5 10 15

Leu Asn Leu Phe Pro Gln Val Pro Arg Ser Gln Asp Thr
20 25

<210> 14

<211> 27

<212> PRT

<213> Artificial

<220>

<223> Description of sequence: Peptide IB2-long (see Table 1)

<400> 14

Ile Pro Ser Pro Ser Val Glu Glu Pro His Lys His Arg Pro Thr Thr
1 5 10 15

Leu Arg Leu Thr Thr Leu Gly Ala Gln Asp Ser
20 25

<210> 15

<211> 29

<212> PRT

<213> Artificial

<220>

<223> Description of sequence: Peptide derived from c-Jun (see Table 1)

<400> 15

Gly Ala Tyr Gly Tyr Ser Asn Pro Lys Ile Leu Lys Gln Ser Met Thr
1 5 10 15

Leu Asn Leu Ala Asp Pro Val Gly Asn Leu Lys Pro His
20 25

<210> 16

<211> 29

<212> PRT

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<213> Artificial

<220>

<223> Description of sequence: Peptide derived from ATF2 (see Table 1)

<400> 16

Thr Asn Glu Asp His Leu Ala Val His Lys His Lys His Glu Met Thr
1 5 10 15

Leu Lys Phe Gly Pro Ala Arg Asn Asp Ser Val Ile Val
20 25

<210> 17

<211> 23

<212> PRT

<213> Artificial

<220>

<223> Description of sequence: Peptide L-IB1 (see Table 1)

<400> 17

Asp Thr Tyr Arg Pro Lys Arg Pro Thr Thr Leu Asn Leu Phe Pro Gln
1 5 10 15

Val Pro Arg Ser Gln Asp Thr
20

<210> 18

<211> 23

<212> PRT

<213> Artificial

<220>

<223> Description of sequence: Peptide D-IB1 (see Table 1)

<220>

<221> MUTAGEN

<222> (1)..(23)

<223> all amino acids are D-amino acids

<400> 18

Thr Asp Gln Ser Arg Pro Val Gln Pro Phe Leu Asn Leu Thr Thr Pro
1 5 10 15

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Arg Lys Pro Arg Tyr Thr Asp
20

<210> 19
<211> 19
<212> PRT
<213> Artificial

<220>
<223> Description of sequence: Peptide L-IB (generic) (see Table 1)

<220>
<221> VARIANT
<222> (1)..(1)
<223> Xaa is selected from any amino acid residue,

<220>
<221> VARIANT
<222> (7)..(7)
<223> Xaa is selected from any amino acid residue,

<220>
<221> VARIANT
<222> (9)..(15)
<223> Xaa is selected from any amino acid residue,

<220>
<221> VARIANT
<222> (18)..(18)
<223> Xaa is selected from serine or threonine,

<220>
<221> VARIANT
<222> (19)..(19)
<223> Xaa is selected from any amino acid residue,

<400> 19

Xaa Arg Pro Thr Thr Leu Xaa Leu Xaa Xaa Xaa Xaa Xaa Xaa Xaa Gln
1 5 10 15

Asp Xaa Xaa

<210> 20
<211> 19
<212> PRT

2014006872

<213> Artificial

<220>

<223> Description of sequence: Peptide D-IB (generic) (see Table 1)

<220>

<221> MUTAGEN

<222> (1)..(19)

<223> all amino acids are D-amino acids

<220>

<221> VARIANT

<222> (1)..(1)

<223> Xaa is selected from any amino acid residue

<220>

<221> VARIANT

<222> (2)..(2)

<223> Xaa is selected from serine or threonine

<220>

<221> VARIANT

<222> (5)..(11)

<223> Xaa is selected from any amino acid residue

<220>

<221> VARIANT

<222> (13)..(13)

<223> Xaa is selected from any amino acid residue

<220>

<221> VARIANT

<222> (19)..(19)

<223> Xaa is selected from any amino acid residue

<400> 20

Xaa	Xaa	Asp	Gln	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Leu	Xaa	Leu	Thr	Thr
1				5				10						15	

Pro Arg Xaa

<210> 21

<211> 17

<212> PRT

<213> Artificial

<220>

2014006872

<223> Description of sequence: Peptide L-generic-TAT (see Table 1)

<220>

<221> VARIANT

<222> (1)..(17)

<223> Xaa is selected from any amino acid residue

<400> 21

Xaa	Xaa	Xaa	Xaa	Arg	Lys	Lys	Arg	Arg	Gln	Arg	Arg	Arg	Xaa	Xaa	Xaa
1				5					10				15		

Xaa

<210> 22

<211> 17

<212> PRT

<213> Artificial

<220>

<223> Description of sequence: Peptide D-generic-TAT (see Table 1)

<220>

<221> MUTAGEN

<222> (1)..(17)

<223> all amino acids are D-amino acids

<220>

<221> VARIANT

<222> (1)..(17)

<223> Xaa is selected from any amino acid residue

<400> 22

Xaa	Xaa	Xaa	Xaa	Arg	Arg	Arg	Gln	Arg	Arg	Lys	Lys	Arg	Xaa	Xaa	Xaa
1				5				10					15		

Xaa

<210> 23

<211> 35

<212> PRT

<213> Artificial

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<220>

<223> Description of sequence: Peptide L-TAT-IB1 (see Table 1)

<400> 23

Gly Arg Lys Lys Arg Arg Gln Arg Arg Arg Pro Pro Asp Thr Tyr Arg
1 5 10 15

Pro Lys Arg Pro Thr Thr Leu Asn Leu Phe Pro Gln Val Pro Arg Ser
20 25 30

Gln Asp Thr
35

<210> 24

<211> 42

<212> PRT

<213> Artificial

<220>

<223> Description of sequence: Peptide L-TAT IB (generic) (see Table 1)

<220>

<221> VARIANT

<222> (1)..(40)

<223> Xaa is selected from any amino acid residue

<220>

<221> VARIANT

<222> (41)..(41)

<223> Xaa is selected from serine or threonine

<220>

<221> VARIANT

<222> (42)..(42)

<223> Xaa is selected from any amino acid residue

<400> 24

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Arg Lys Lys Arg Arg Gln Arg Arg Arg
1 5 10 15

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Arg Pro Thr Thr Leu Xaa Leu Xaa
20 25 30

Xaa Xaa Xaa Xaa Xaa Xaa Gln Asp Xaa Xaa

35

40

<210> 25
 <211> 35
 <212> PRT
 <213> Artificial

<220>
 <223> Description of sequence: Peptide D-TAT-IB1 (see Table 1)

<220>
 <221> MUTAGEN
 <222> (1)..(35)
 <223> all amino acids are D-amino acids

<400> 25

Thr	Asp	Gln	Ser	Arg	Pro	Val	Gln	Pro	Phe	Leu	Asn	Leu	Thr	Thr	Pro
1				5					10					15	

Arg	Lys	Pro	Arg	Tyr	Thr	Asp	Pro	Pro	Arg	Arg	Arg	Gln	Arg	Arg	Lys
			20					25					30		

Lys	Arg	Gly
		35

<210> 26
 <211> 42
 <212> PRT
 <213> Artificial

<220>
 <223> Description of sequence: Peptide D-TAT IB (generic) (see Table 1)

<220>
 <221> MUTAGEN
 <222> (1)..(42)
 <223> all amino acids are D-amino acids

<220>
 <221> VARIANT
 <222> (1)..(1)
 <223> Xaa is selected from any amino acid residue

<220>
 <221> VARIANT

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<222> (2)..(2)
<223> Xaa is selected from serine or threonine

<220>
<221> VARIANT
<222> (3)..(42)
<223> Xaa is selected from any amino acid residue

<400> 26

Xaa	Xaa	Asp	Gln	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Leu	Xaa	Leu	Thr	Thr
1				5						10					15	

Pro	Arg	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Arg	Arg	Arg	Gln	Arg	Arg
			20						25				30		

Lys	Lys	Arg	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa
		35						40		

<210> 27
<211> 30
<212> PRT
<213> Artificial

<220>
<223> Description of sequence: chimeric peptide sequence L-TAT-IB1(s1)
(see Table 1)

<400> 27

Arg	Lys	Lys	Arg	Arg	Gln	Arg	Arg	Arg	Pro	Pro	Arg	Pro	Lys	Arg	Pro
1				5					10					15	

Thr	Thr	Leu	Asn	Leu	Phe	Pro	Gln	Val	Pro	Arg	Ser	Gln	Asp
			20					25					30

<210> 28
<211> 30
<212> PRT
<213> Artificial

<220>
<223> Description of sequence: chimeric peptide sequence L-TAT-IB1(s2)
(see Table 1)

<220>

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<221> VARIANT
<222> (11)..(11)
<223> Xaa is selected from glycine or proline

<220>
<221> REPEAT
<222> (11)..(11)
<223> Xaa is Xnc as defined in the general formula, wherein n is 0-5,
5-10, 10-15, 15-20, 20-30 or more for Xnc

<400> 28

Gly Arg Lys Lys Arg Arg Gln Arg Arg Arg Xaa Arg Pro Lys Arg Pro
1 5 10 15

Thr Thr Leu Asn Leu Phe Pro Gln Val Pro Arg Ser Gln Asp
20 25 30

<210> 29
<211> 29
<212> PRT
<213> Artificial

<220>
<223> Description of sequence: chimeric peptide sequence L-TAT-IB1(s3)
(see Table 1)

<220>
<221> VARIANT
<222> (10)..(10)
<223> Xaa is selected from glycine or proline

<220>
<221> REPEAT
<222> (10)..(10)
<223> Xaa is Xnc as defined in the general formula, wherein n is 0-5,
5-10, 10-15, 15-20, 20-30 or more for Xnc

<400> 29

Arg Lys Lys Arg Arg Gln Arg Arg Arg Xaa Arg Pro Lys Arg Pro Thr
1 5 10 15

Thr Leu Asn Leu Phe Pro Gln Val Pro Arg Ser Gln Asp
20 25

<210> 30

2014006872

<211> 30
<212> PRT
<213> Artificial

<220>
<223> Description of sequence: chimeric peptide sequence D-TAT-IB1(s1)
(see Table 1)

<220>
<221> MUTAGEN
<222> (1)..(30)
<223> all amino acids are D-amino acids

<400> 30

Asp Gln Ser Arg Pro Val Gln Pro Phe Leu Asn Leu Thr Thr Pro Arg
1 5 10 15

Lys Pro Arg Pro Pro Arg Arg Arg Gln Arg Arg Lys Lys Arg
20 25 30

<210> 31
<211> 30
<212> PRT
<213> Artificial

<220>
<223> Description of sequence: chimeric peptide sequence D-TAT-IB1(s2)
(see Table 1)

<220>
<221> MUTAGEN
<222> (1)..(30)
<223> all amino acids are D-amino acids

<220>
<221> VARIANT
<222> (20)..(20)
<223> Xaa is selected from glycine or proline

<220>
<221> REPEAT
<222> (20)..(20)
<223> Xaa is Xnc as defined in the general formula, wherein n is 0-5,
5-10, 10-15, 15-20, 20-30 or more for Xnc

<400> 31

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Asp Gln Ser Arg Pro Val Gln Pro Phe Leu Asn Leu Thr Thr Pro Arg
1 5 10 15

Lys Pro Arg Xaa Arg Arg Arg Gln Arg Arg Lys Lys Arg Gly
20 25 30

<210> 32

<211> 29

<212> PRT

<213> Artificial

<220>

<223> Description of sequence: chimeric peptide sequence D-TAT-IB1(s3)
(see Table 1)

<220>

<221> MUTAGEN

<222> (1)..(29)

<223> all amino acids are D-amino acids

<220>

<221> VARIANT

<222> (20)..(20)

<223> Xaa is selected from glycine or proline

<220>

<221> REPEAT

<222> (20)..(20)

<223> Xaa is Xnc as defined in the general formula, wherein n is 0-5,
5-10, 10-15, 15-20, 20-30 or more for Xnc

<400> 32

Asp Gln Ser Arg Pro Val Gln Pro Phe Leu Asn Leu Thr Thr Pro Arg
1 5 10 15

Lys Pro Arg Xaa Arg Arg Arg Gln Arg Arg Lys Lys Arg
20 25

<210> 33

<211> 13

<212> PRT

<213> Artificial

<220>

<223> Description of sequence: L-IB1(s1) (see Table 1)

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<400> 33

Thr Leu Asn Leu Phe Pro Gln Val Pro Arg Ser Gln Asp
1 5 10

<210> 34

<211> 13

<212> PRT

<213> Artificial

<220>

<223> Description of sequence: L-IB1(s2) (see Table 1)

<400> 34

Thr Thr Leu Asn Leu Phe Pro Gln Val Pro Arg Ser Gln
1 5 10

<210> 35

<211> 13

<212> PRT

<213> Artificial

<220>

<223> Description of sequence: L-IB1(s3) (see Table 1)

<400> 35

Pro Thr Thr Leu Asn Leu Phe Pro Gln Val Pro Arg Ser
1 5 10

<210> 36

<211> 13

<212> PRT

<213> Artificial

<220>

<223> Description of sequence: L-IB1(s4) (see Table 1)

<400> 36

Arg Pro Thr Thr Leu Asn Leu Phe Pro Gln Val Pro Arg
1 5 10

<210> 37

<211> 13

<212> PRT

<213> Artificial

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<220>

<223> Description of sequence: L-IB1(s5) (see Table 1)

<400> 37

Lys	Arg	Pro	Thr	Thr	Leu	Asn	Leu	Phe	Pro	Gln	Val	Pro
1				5					10			

<210> 38

<211> 13

<212> PRT

<213> Artificial

<220>

<223> Description of sequence: L-IB1(s6) (see Table 1)

<400> 38

Pro	Lys	Arg	Pro	Thr	Thr	Leu	Asn	Leu	Phe	Pro	Gln	Val
1				5					10			

<210> 39

<211> 13

<212> PRT

<213> Artificial

<220>

<223> Description of sequence: L-IB1(s7) (see Table 1)

<400> 39

Arg	Pro	Lys	Arg	Pro	Thr	Thr	Leu	Asn	Leu	Phe	Pro	Gln
1				5					10			

<210> 40

<211> 12

<212> PRT

<213> Artificial

<220>

<223> Description of sequence: L-IB1(s8) (see Table 1)

<400> 40

Leu	Asn	Leu	Phe	Pro	Gln	Val	Pro	Arg	Ser	Gln	Asp
1				5					10		

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<210> 41
<211> 12
<212> PRT
<213> Artificial

<220>

<223> Description of sequence: L-IB1(s9) (see Table 1)

<400> 41

Thr	Leu	Asn	Leu	Phe	Pro	Gln	Val	Pro	Arg	Ser	Gln
1				5					10		

<210> 42
<211> 12
<212> PRT
<213> Artificial

<220>

<223> Description of sequence: L-IB1(s10) (see Table 1)

<400> 42

Thr	Thr	Leu	Asn	Leu	Phe	Pro	Gln	Val	Pro	Arg	Ser
1				5						10	

<210> 43
<211> 12
<212> PRT
<213> Artificial

<220>

<223> Description of sequence: L-IB1(s11) (see Table 1)

<400> 43

Pro	Thr	Thr	Leu	Asn	Leu	Phe	Pro	Gln	Val	Pro	Arg
1				5					10		

<210> 44
<211> 12
<212> PRT
<213> Artificial

<220>

<223> Description of sequence: L-IB1(s12) (see Table 1)

<400> 44

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Arg Pro Thr Thr Leu Asn Leu Phe Pro Gln Val Pro
1 5 10

<210> 45
<211> 12
<212> PRT
<213> Artificial

<220>

<223> Description of sequence: L-IB1(s13) (see Table 1)

<400> 45

Lys Arg Pro Thr Thr Leu Asn Leu Phe Pro Gln Val
1 5 10

<210> 46
<211> 12
<212> PRT
<213> Artificial

<220>

<223> Description of sequence: L-IB1(s14) (see Table 1)

<400> 46

Pro Lys Arg Pro Thr Thr Leu Asn Leu Phe Pro Gln
1 5 10

<210> 47
<211> 12
<212> PRT
<213> Artificial

<220>

<223> Description of sequence: L-IB1(s15) (see Table 1)

<400> 47

Arg Pro Lys Arg Pro Thr Thr Leu Asn Leu Phe Pro
1 5 10

<210> 48
<211> 11
<212> PRT
<213> Artificial

<220>

2014006872

<223> Description of sequence: L-IB1(s16) (see Table 1)

<400> 48

Asn	Leu	Phe	Pro	Gln	Val	Pro	Arg	Ser	Gln	Asp
1				5					10	

<210> 49

<211> 11

<212> PRT

<213> Artificial

<220>

<223> Description of sequence: L-IB1(s17) (see Table 1)

<400> 49

Leu	Asn	Leu	Phe	Pro	Gln	Val	Pro	Arg	Ser	Gln
1				5					10	

<210> 50

<211> 11

<212> PRT

<213> Artificial

<220>

<223> Description of sequence: L-IB1(s18) (see Table 1)

<400> 50

Thr	Leu	Asn	Leu	Phe	Pro	Gln	Val	Pro	Arg	Ser
1				5					10	

<210> 51

<211> 11

<212> PRT

<213> Artificial

<220>

<223> Description of sequence: L-IB1(s19) (see Table 1)

<400> 51

Thr	Thr	Leu	Asn	Leu	Phe	Pro	Gln	Val	Pro	Arg
1				5					10	

<210> 52

<211> 11

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<212> PRT
<213> Artificial

<220>
<223> Description of sequence: L-IB1(s20) (see Table 1)

<400> 52

Pro Thr Thr Leu Asn Leu Phe Pro Gln Val Pro
1 5 10

<210> 53
<211> 11
<212> PRT
<213> Artificial

<220>
<223> Description of sequence: L-IB1(s21) (see Table 1)

<400> 53

Arg Pro Thr Thr Leu Asn Leu Phe Pro Gln Val
1 5 10

<210> 54
<211> 11
<212> PRT
<213> Artificial

<220>
<223> Description of sequence: L-IB1(s22) (see Table 1)

<400> 54

Lys Arg Pro Thr Thr Leu Asn Leu Phe Pro Gln
1 5 10

<210> 55
<211> 11
<212> PRT
<213> Artificial

<220>
<223> Description of sequence: L-IB1(s23) (see Table 1)

<400> 55

Pro Lys Arg Pro Thr Thr Leu Asn Leu Phe Pro
1 5 10

<210> 56
 <211> 11
 <212> PRT
 <213> Artificial

<220>
 <223> Description of sequence: L-IB1(s24) (see Table 1)

<400> 56

Arg	Pro	Lys	Arg	Pro	Thr	Thr	Leu	Asn	Leu	Phe
1				5					10	

<210> 57
 <211> 10
 <212> PRT
 <213> Artificial

<220>
 <223> Description of sequence: L-IB1(s25) (see Table 1)

<400> 57

Leu	Phe	Pro	Gln	Val	Pro	Arg	Ser	Gln	Asp
1				5					10

<210> 58
 <211> 10
 <212> PRT
 <213> Artificial

<220>
 <223> Description of sequence: L-IB1(s26) (see Table 1)

<400> 58

Asn	Leu	Phe	Pro	Gln	Val	Pro	Arg	Ser	Gln
1				5					10

<210> 59
 <211> 10
 <212> PRT
 <213> Artificial

<220>
 <223> Description of sequence: L-IB1(s27) (see Table 1)

<400> 59

Leu	Asn	Leu	Phe	Pro	Gln	Val	Pro	Arg	Ser
1				5					10

<210> 60

<211> 10

<212> PRT

<213> Artificial

<220>

<223> Description of sequence: L-IB1(s28) (see Table 1)

<400> 60

Thr	Leu	Asn	Leu	Phe	Pro	Gln	Val	Pro	Arg
1				5					10

<210> 61

<211> 10

<212> PRT

<213> Artificial

<220>

<223> Description of sequence: L-IB1(s29) (see Table 1)

<400> 61

Thr	Thr	Leu	Asn	Leu	Phe	Pro	Gln	Val	Pro
1				5					10

<210> 62

<211> 10

<212> PRT

<213> Artificial

<220>

<223> Description of sequence: L-IB1(s30) (see Table 1)

<400> 62

Pro	Thr	Thr	Leu	Asn	Leu	Phe	Pro	Gln	Val
1				5					10

<210> 63

<211> 10

<212> PRT

<213> Artificial

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<220>

<223> Description of sequence: L-IB1(s31) (see Table 1)

<400> 63

Arg	Pro	Thr	Thr	Leu	Asn	Leu	Phe	Pro	Gln
1				5				10	

<210> 64

<211> 10

<212> PRT

<213> Artificial

<220>

<223> Description of sequence: L-IB1(s32) (see Table 1)

<400> 64

Lys	Arg	Pro	Thr	Thr	Leu	Asn	Leu	Phe	Pro
1				5				10	

<210> 65

<211> 10

<212> PRT

<213> Artificial

<220>

<223> Description of sequence: L-IB1(s33) (see Table 1)

<400> 65

Pro	Lys	Arg	Pro	Thr	Thr	Leu	Asn	Leu	Phe
1				5				10	

<210> 66

<211> 10

<212> PRT

<213> Artificial

<220>

<223> Description of sequence: L-IB1(s34) (see Table 1)

<400> 66

Arg	Pro	Lys	Arg	Pro	Thr	Thr	Leu	Asn	Leu
1				5				10	

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<210> 67
<211> 13
<212> PRT
<213> Artificial

<220>
<223> Description of sequence: D-IB1(s1) (see Table 1)

<220>
<221> MUTAGEN
<222> (1)..(13)
<223> all amino acids are D-amino acids

<400> 67

Gln Pro Phe Leu Asn Leu Thr Thr Pro Arg Lys Pro Arg
1 5 10

<210> 68
<211> 13
<212> PRT
<213> Artificial

<220>
<223> Description of sequence: D-IB1(s2) (see Table 1)

<220>
<221> MUTAGEN
<222> (1)..(13)
<223> all amino acids are D-amino acids

<400> 68

Val Gln Pro Phe Leu Asn Leu Thr Thr Pro Arg Lys Pro
1 5 10

<210> 69
<211> 13
<212> PRT
<213> Artificial

<220>
<223> Description of sequence: D-IB1(s3) (see Table 1)

<220>
<221> MUTAGEN
<222> (1)..(13)

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<223> all amino acids are D-amino acids

<400> 69

Pro Val Gln Pro Phe Leu Asn Leu Thr Thr Pro Arg Lys
1 5 10

<210> 70

<211> 13

<212> PRT

<213> Artificial

<220>

<223> Description of sequence: D-IB1(s4) (see Table 1)

<220>

<221> MUTAGEN

<222> (1)..(13)

<223> all amino acids are D-amino acids

<400> 70

Arg Pro Val Gln Pro Phe Leu Asn Leu Thr Thr Pro Arg
1 5 10

<210> 71

<211> 13

<212> PRT

<213> Artificial

<220>

<223> Description of sequence: D-IB1(s5) (see Table 1)

<220>

<221> MUTAGEN

<222> (1)..(13)

<223> all amino acids are D-amino acids

<400> 71

Ser Arg Pro Val Gln Pro Phe Leu Asn Leu Thr Thr Pro
1 5 10

<210> 72

<211> 13

<212> PRT

<213> Artificial

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<220>

<223> Description of sequence: D-IB1(s6) (see Table 1)

<220>

<221> MUTAGEN

<222> (1)..(13)

<223> all amino acids are D-amino acids

<400> 72

Gln Ser Arg Pro Val Gln Pro Phe Leu Asn Leu Thr Thr
1 5 10

<210> 73

<211> 13

<212> PRT

<213> Artificial

<220>

<223> Description of sequence: D-IB1(s7) (see Table 1)

<220>

<221> MUTAGEN

<222> (1)..(13)

<223> all amino acids are D-amino acids

<400> 73

Asp Gln Ser Arg Pro Val Gln Pro Phe Leu Asn Leu Thr
1 5 10

<210> 74

<211> 12

<212> PRT

<213> Artificial

<220>

<223> Description of sequence: D-IB1(s8) (see Table 1)

<220>

<221> MUTAGEN

<222> (1)..(12)

<223> all amino acids are D-amino acids

<400> 74

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Pro Phe Leu Asn Leu Thr Thr Pro Arg Lys Pro Arg
1 5 10

<210> 75
<211> 12
<212> PRT
<213> Artificial

<220>
<223> Description of sequence: D-IB1(s9) (see Table 1)

<220>
<221> MUTAGEN
<222> (1)..(12)
<223> all amino acids are D-amino acids

<400> 75

Gln Pro Phe Leu Asn Leu Thr Thr Pro Arg Lys Pro
1 5 10

<210> 76
<211> 12
<212> PRT
<213> Artificial

<220>
<223> Description of sequence: D-IB1(s10) (see Table 1)

<220>
<221> MUTAGEN
<222> (1)..(12)
<223> all amino acids are D-amino acids

<400> 76

Val Gln Pro Phe Leu Asn Leu Thr Thr Pro Arg Lys
1 5 10

<210> 77
<211> 12
<212> PRT
<213> Artificial

<220>
<223> Description of sequence: D-IB1(s11) (see Table 1)

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<220>
<221> MUTAGEN
<222> (1)..(12)
<223> all amino acids are D-amino acids

<400> 77

Pro Val Gln Pro Phe Leu Asn Leu Thr Thr Pro Arg
1 5 10

<210> 78
<211> 12
<212> PRT
<213> Artificial

<220>
<223> Description of sequence: D-IB1(s12) (see Table 1)

<220>
<221> MUTAGEN
<222> (1)..(12)
<223> all amino acids are D-amino acids

<400> 78

Arg Pro Val Gln Pro Phe Leu Asn Leu Thr Thr Pro
1 5 10

<210> 79
<211> 12
<212> PRT
<213> Artificial

<220>
<223> Description of sequence: D-IB1(s13) (see Table 1)

<220>
<221> MUTAGEN
<222> (1)..(12)
<223> all amino acids are D-amino acids

<400> 79

Ser Arg Pro Val Gln Pro Phe Leu Asn Leu Thr Thr
1 5 10

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<210> 80
<211> 12
<212> PRT
<213> Artificial

<220>
<223> Description of sequence: D-IB1(s14) (see Table 1)

<220>
<221> MUTAGEN
<222> (1)..(12)
<223> all amino acids are D-amino acids

<400> 80

Gln Ser Arg Pro Val Gln Pro Phe Leu Asn Leu Thr
1 5 10

<210> 81
<211> 12
<212> PRT
<213> Artificial

<220>
<223> Description of sequence: D-IB1(s15) (see Table 1)

<220>
<221> MUTAGEN
<222> (1)..(12)
<223> all amino acids are D-amino acids

<400> 81

Asp Gln Ser Arg Pro Val Gln Pro Phe Leu Asn Leu
1 5 10

<210> 82
<211> 11
<212> PRT
<213> Artificial

<220>
<223> Description of sequence: D-IB1(s16) (see Table 1)

<220>
<221> MUTAGEN
<222> (1)..(11)

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<223> all amino acids are D-amino acids

<400> 82

Phe Leu Asn Leu Thr Thr Pro Arg Lys Pro Arg
1 5 10

<210> 83

<211> 11

<212> PRT

<213> Artificial

<220>

<223> Description of sequence: D-IB1(s17) (see Table 1)

<220>

<221> MUTAGEN

<222> (1)..(11)

<223> all amino acids are D-amino acids

<400> 83

Pro Phe Leu Asn Leu Thr Thr Pro Arg Lys Pro
1 5 10

<210> 84

<211> 11

<212> PRT

<213> Artificial

<220>

<223> Description of sequence: D-IB1(s18) (see Table 1)

<220>

<221> MUTAGEN

<222> (1)..(11)

<223> all amino acids are D-amino acids

<400> 84

Gln Pro Phe Leu Asn Leu Thr Thr Pro Arg Lys
1 5 10

<210> 85

<211> 11

<212> PRT

<213> Artificial

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<220>
<223> Description of sequence: D-IB1(s19) (see Table 1)

<220>
<221> MUTAGEN
<222> (1)..(11)
<223> all amino acids are D-amino acids

<400> 85

Val Gln Pro Phe Leu Asn Leu Thr Thr Pro Arg
1 5 10

<210> 86
<211> 11
<212> PRT
<213> Artificial

<220>
<223> Description of sequence: D-IB1(s20) (see Table 1)

<220>
<221> MUTAGEN
<222> (1)..(11)
<223> all amino acids are D-amino acids

<400> 86

Pro Val Gln Pro Phe Leu Asn Leu Thr Thr Pro
1 5 10

<210> 87
<211> 11
<212> PRT
<213> Artificial

<220>
<223> Description of sequence: D-IB1(s21) (see Table 1)

<220>
<221> MUTAGEN
<222> (1)..(11)
<223> all amino acids are D-amino acids

<400> 87

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Arg Pro Val Gln Pro Phe Leu Asn Leu Thr Thr
1 5 10

<210> 88
<211> 11
<212> PRT
<213> Artificial

<220>
<223> Description of sequence: D-IB1(s22) (see Table 1)

<220>
<221> MUTAGEN
<222> (1)..(11)
<223> all amino acids are D-amino acids

<400> 88

Ser Arg Pro Val Gln Pro Phe Leu Asn Leu Thr
1 5 10

<210> 89
<211> 11
<212> PRT
<213> Artificial

<220>
<223> Description of sequence: D-IB1(s23) (see Table 1)

<220>
<221> MUTAGEN
<222> (1)..(11)
<223> all amino acids are D-amino acids

<400> 89

Gln Ser Arg Pro Val Gln Pro Phe Leu Asn Leu
1 5 10

<210> 90
<211> 11
<212> PRT
<213> Artificial

<220>
<223> Description of sequence: D-IB1(s24) (see Table 1)

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<220>
<221> MUTAGEN
<222> (1)..(11)
<223> all amino acids are D-amino acids

<400> 90

Asp	Gln	Ser	Arg	Pro	Val	Gln	Pro	Phe	Leu	Asn
1				5					10	

<210> 91
<211> 10
<212> PRT
<213> Artificial

<220>
<223> Description of sequence: D-IB1(s25) (see Table 1)

<220>
<221> MUTAGEN
<222> (1)..(10)
<223> all amino acids are D-amino acids

<400> 91

Asp	Gln	Ser	Arg	Pro	Val	Gln	Pro	Phe	Leu
1				5					10

<210> 92
<211> 10
<212> PRT
<213> Artificial

<220>
<223> Description of sequence: D-IB1(s26) (see Table 1)

<220>
<221> MUTAGEN
<222> (1)..(10)
<223> all amino acids are D-amino acids

<400> 92

Gln	Ser	Arg	Pro	Val	Gln	Pro	Phe	Leu	Asn
1				5					10

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<210> 93
<211> 10
<212> PRT
<213> Artificial

<220>
<223> Description of sequence: D-IB1(s27) (see Table 1)

<220>
<221> MUTAGEN
<222> (1)..(10)
<223> all amino acids are D-amino acids

<400> 93

Ser Arg Pro Val Gln Pro Phe Leu Asn Leu
1 5 10

<210> 94
<211> 10
<212> PRT
<213> Artificial

<220>
<223> Description of sequence: D-IB1(s28) (see Table 1)

<220>
<221> MUTAGEN
<222> (1)..(10)
<223> all amino acids are D-amino acids

<400> 94

Arg Pro Val Gln Pro Phe Leu Asn Leu Thr
1 5 10

<210> 95
<211> 10
<212> PRT
<213> Artificial

<220>
<223> Description of sequence: D-IB1(s29) (see Table 1)

<220>
<221> MUTAGEN
<222> (1)..(10)

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<223> all amino acids are D-amino acids

<400> 95

Pro	Val	Gln	Pro	Phe	Leu	Asn	Leu	Thr	Thr
1				5					10

<210> 96

<211> 10

<212> PRT

<213> Artificial

<220>

<223> Description of sequence: D-IB1(s30) (see Table 1)

<220>

<221> MUTAGEN

<222> (1)..(10)

<223> all amino acids are D-amino acids

<400> 96

Val	Gln	Pro	Phe	Leu	Asn	Leu	Thr	Thr	Pro
1				5					10

<210> 97

<211> 10

<212> PRT

<213> Artificial

<220>

<223> Description of sequence: D-IB1(s31) (see Table 1)

<220>

<221> MUTAGEN

<222> (1)..(10)

<223> all amino acids are D-amino acids

<400> 97

Gln	Pro	Phe	Leu	Asn	Leu	Thr	Thr	Pro	Arg
1				5					10

<210> 98

<211> 10

<212> PRT

<213> Artificial

<220>
 <223> Description of sequence: D-IB1(s32) (see Table 1)

<220>
 <221> MUTAGEN
 <222> (1)..(10)
 <223> all amino acids are D-amino acids

<400> 98

Pro	Phe	Leu	Asn	Leu	Thr	Thr	Pro	Arg	Lys
1				5					10

<210> 99
 <211> 10
 <212> PRT
 <213> Artificial

<220>
 <223> Description of sequence: D-IB1(s33) (see Table 1)

<220>
 <221> MUTAGEN
 <222> (1)..(10)
 <223> all amino acids are D-amino acids

<400> 99

Phe	Leu	Asn	Leu	Thr	Thr	Pro	Arg	Lys	Pro
1				5					10

<210> 100
 <211> 10
 <212> PRT
 <213> Artificial

<220>
 <223> Description of sequence: D-IB1(s34) (see Table 1)

<220>
 <221> MUTAGEN
 <222> (1)..(10)
 <223> all amino acids are D-amino acids

<400> 100

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Leu Asn Leu Thr Thr Pro Arg Lys Pro Arg
1 5 10

<210> 101
<211> 21
<212> DNA
<213> Artificial

<220>
<223> Description of sequence: ap-1 doubled labeled probe (see p. 66)

<400> 101
cgcttgatga gtcagccgga a 21

<210> 102
<211> 2953
<212> DNA
<213> Artificial

<220>
<223> description of sequence: rat IB1 cDNA sequence and its predicted amino acid sequence (see Figure 1)

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Met Ala Arg
1

ctg agc ccg gga atg gcg gag cga gag agc ggc ctg agc ggg ggt gcc 164
Leu Ser Pro Gly Met Ala Glu Arg Glu Ser Gly Leu Ser Gly Gly Ala
5 10 15

gcg tcc cca ccg gcc gct tcc cca ttc ctg gga ctg cac atc gcg tcg 212
Ala Ser Pro Pro Ala Ala Ser Pro Phe Leu Gly Leu His Ile Ala Ser
20 25 30 35

cct ccc aat ttc agg ctc acc cat gat atc agc ctg gag gag ttt gag 260
Pro Pro Asn Phe Arg Leu Thr His Asp Ile Ser Leu Glu Glu Phe Glu
40 45 50

gat gaa gac ctt tcg gag atc act gat gag tgt ggc atc agc ctg cag 308
Asp Glu Asp Leu Ser Glu Ile Thr Asp Glu Cys Gly Ile Ser Leu Gln
55 60 65

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Cys Lys Asp Thr Leu Ser Leu Arg Pro Pro Arg Ala Gly Leu Leu Ser	
70 75 80	
gcg ggt agc agc ggt agc gcg ggg agc cgg ctg cag gcg gag atg ctg	404
Ala Gly Ser Ser Gly Ser Ala Gly Ser Arg Leu Gln Ala Glu Met Leu	
85 90 95	
cag atg gac ctg atc gac gcg gca agt gac act ccg ggc gcc gag gac	452
Gln Met Asp Leu Ile Asp Ala Ala Ser Asp Thr Pro Gly Ala Glu Asp	
100 105 110 115	
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Asp Glu Glu Asp Asp Asp Glu Leu Ala Ala Gln Arg Pro Gly Val Gly	
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cct tcc aaa gcc gag tct ggc cag gag ccg gcg tct cgc agc cag ggt	548
Pro Ser Lys Ala Glu Ser Gly Gln Glu Pro Ala Ser Arg Ser Gln Gly	
135 140 145	
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Gln Gly Gln Gly Pro Gly Thr Gly Cys Gly Asp Thr Tyr Arg Pro Lys	
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agg cct acc acg ctc aac ctt ttc ccg cag gtg ccg cgg tct cag gac	644
Arg Pro Thr Thr Leu Asn Leu Phe Pro Gln Val Pro Arg Ser Gln Asp	
165 170 175	
acg ctg aat aat aac tct tta ggc aaa aag cac agt tgg cag gac cgt	692
Thr Leu Asn Asn Asn Ser Leu Gly Lys Lys His Ser Trp Gln Asp Arg	
180 185 190 195	
gtg tct cga tca tcc tcc cct ctg aag aca ggg gag cag acg cct cca	740
Val Ser Arg Ser Ser Ser Pro Leu Lys Thr Gly Glu Gln Thr Pro Pro	
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cat gaa cat atc tgc ctg agt gat gag ctg ccg ccc cag ggc agt cct	788
His Glu His Ile Cys Leu Ser Asp Glu Leu Pro Pro Gln Gly Ser Pro	
215 220 225	
gtt ccc acc cag gat cgt ggc act tcc acc gac agc cct tgt cgc cgt	836
Val Pro Thr Gln Asp Arg Gly Thr Ser Thr Asp Ser Pro Cys Arg Arg	
230 235 240	
act gca gcc acc cag atg gca cct cca agt ggt ccc cct gcc act gca	884
Thr Ala Ala Thr Gln Met Ala Pro Pro Ser Gly Pro Pro Ala Thr Ala	
245 250 255	
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Pro Gly Gly Arg Gly His Ser His Arg Asp Arg Ser Ile Ser Ala Asp	
260 265 270 275	

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ccc	cca	gac	cct	gca	gaa	ccc	acc	tcc	acc	ttc	ttg	cca	ccc	act	gag	1028
Pro	Pro	Asp	Pro	Ala	Glu	Pro	Thr	Ser	Thr	Phe	Leu	Pro	Pro	Thr	Glu	
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Thr	Ala	Gly	Arg	Pro	His	Pro	Ser	Ile	Ser	Glu	Glu	Asp	Glu	Gly	Phe	
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Asp	Cys	Leu	Ser	Ser	Pro	Glu	Gln	Ala	Glu	Pro	Pro	Gly	Gly	Gly	Trp	
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tcg	gac	acc	agc	gca	ctg	tcc	tac	gac	tct	gtc	aag	tac	aca	ctg	gtg	1268
Ser	Asp	Thr	Ser	Ala	Leu	Ser	Tyr	Asp	Ser	Val	Lys	Tyr	Thr	Leu	Val	
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gtg	gat	gag	cat	gcc	cag	ctt	gag	ttg	gtg	agc	ctg	cgg	cca	tgt	ttt	1316
Val	Asp	Glu	His	Ala	Gln	Leu	Glu	Leu	Val	Ser	Leu	Arg	Pro	Cys	Phe	
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Gly	Asp	Tyr	Ser	Asp	Glu	Ser	Asp	Ser	Ala	Thr	Val	Tyr	Asp	Asn	Cys	
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Ala	Ser	Ala	Ser	Ser	Pro	Tyr	Glu	Ser	Ala	Ile	Gly	Glu	Glu	Tyr	Glu	
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Glu	Ala	Pro	Gln	Pro	Arg	Pro	Pro	Thr	Cys	Leu	Ser	Glu	Asp	Ser	Thr	
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Pro	Asp	Glu	Pro	Asp	Val	His	Phe	Ser	Lys	Lys	Phe	Leu	Asn	Val	Phe	
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Met	Ser	Gly	Arg	Ser	Arg	Ser	Ser	Ser	Ala	Glu	Ser	Phe	Gly	Leu	Phe	
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ttc agg ttt gtg cct cgg cat gaa gat gaa ctt gag ctg gaa gtg gac Phe Arg Phe Val Pro Arg His Glu Asp Glu Leu Glu Leu Glu Val Asp 500 505 510 515	1652
gac cct ctg ctg gtg gag ctg cag gca gaa gac tat tgg tat gag gcc Asp Pro Leu Leu Val Glu Leu Gln Ala Glu Asp Tyr Trp Tyr Glu Ala 520 525 530	1700
tat aac atg cgc act gga gcc cgt ggt gtc ttt cct gcc tac tat gcc Tyr Asn Met Arg Thr Gly Ala Arg Gly Val Phe Pro Ala Tyr Tyr Ala 535 540 545	1748
att gag gtc acc aag gag cct gag cac atg gca gcc ctt gcc aaa aac Ile Glu Val Thr Lys Glu Pro Glu His Met Ala Ala Leu Ala Lys Asn 550 555 560	1796
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aca gaa gat atc tac ttg gag tag cagcaacccc cctctctgca gcccctcagc      2282
Thr Glu Asp Ile Tyr Leu Glu
          710

cccaggccag tactaggaca gctgactgct gacaggatgt tgtactgcca cgagagaatg      2342

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ttgtaatata tggggttaga ttaatctatg gaggacagta caggctctct cggggctggg      2462

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gccctgcctg ccaggaagg ttccctctca gctggcccca gccactggt cactgtcttg      2882

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<220>
 <223> description of sequence: Protein encoded by Exon-Intron Boundary
 of the rIB1 Gene - Splice donor

<400> 103

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Gly Gly Ala Ala Ser Pro Pro Ala Ala Ser Pro Phe Leu Gly Leu His
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Glu Phe Glu Asp Glu Asp Leu Ser Glu Ile Thr Asp Glu Cys Gly Ile
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Ser Leu Gln Cys Lys Asp Thr Leu Ser Leu Arg Pro Pro Arg Ala Gly
65 70 75 80

Leu Leu Ser Ala Gly Ser Ser Gly Ser Ala Gly Ser Arg Leu Gln Ala
85 90 95

Glu Met Leu Gln Met Asp Leu Ile Asp Ala Ala Ser Asp Thr Pro Gly
100 105 110

Ala Glu Asp Asp Glu Glu Asp Asp Asp Glu Leu Ala Ala Gln Arg Pro
115 120 125

Gly Val Gly Pro Ser Lys Ala Glu Ser Gly Gln Glu Pro Ala Ser Arg
130 135 140

Ser Gln Gly Gln Gly Gln Gly Pro Gly Thr Gly Cys Gly Asp Thr Tyr
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Arg Pro Lys Arg Pro Thr Thr Leu Asn Leu Phe Pro Gln Val Pro Arg
165 170 175

Ser Gln Asp Thr Leu Asn Asn Asn Ser Leu Gly Lys Lys His Ser Trp
180 185 190

Gln Asp Arg Val Ser Arg Ser Ser Ser Pro Leu Lys Thr Gly Glu Gln
195 200 205

Thr Pro Pro His Glu His Ile Cys Leu Ser Asp Glu Leu Pro Pro Gln
210 215 220

Gly Ser Pro Val Pro Thr Gln Asp Arg Gly Thr Ser Thr Asp Ser Pro
225 230 235 240

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Cys Arg Arg Thr Ala Ala Thr Gln Met Ala Pro Pro Ser Gly Pro Pro
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Ala Thr Ala Pro Gly Gly Arg Gly His Ser His Arg Asp Arg Ser Ile
260 265 270

Ser Ala Asp Val Arg Leu Glu Ala Thr Glu Glu Ile Tyr Leu Thr Pro
275 280 285

Val Gln Arg Pro Pro Asp Pro Ala Glu Pro Thr Ser Thr Phe Leu Pro
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Pro Thr Glu Ser Arg Met Ser Val Ser Ser Asp Pro Asp Pro Ala Ala
305 310 315 320

Tyr Ser Val Thr Ala Gly Arg Pro His Pro Ser Ile Ser Glu Glu Asp
325 330 335

Glu Gly Phe Asp Cys Leu Ser Ser Pro Glu Gln Ala Glu Pro Pro Gly
340 345 350

Gly Gly Trp Arg Gly Ser Leu Gly Glu Pro Pro Pro Pro Pro Arg Ala
355 360 365

Ser Leu Ser Ser Asp Thr Ser Ala Leu Ser Tyr Asp Ser Val Lys Tyr
370 375 380

Thr Leu Val Val Asp Glu His Ala Gln Leu Glu Leu Val Ser Leu Arg
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Pro Cys Phe Gly Asp Tyr Ser Asp Glu Ser Asp Ser Ala Thr Val Tyr
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Asp Asn Cys Ala Ser Ala Ser Ser Pro Tyr Glu Ser Ala Ile Gly Glu
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Glu Tyr Glu Glu Ala Pro Gln Pro Arg Pro Pro Thr Cys Leu Ser Glu
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Asp Ser Thr Pro Asp Glu Pro Asp Val His Phe Ser Lys Lys Phe Leu
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Asn Val Phe Met Ser Gly Arg Ser Arg Ser Ser Ser Ala Glu Ser Phe
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Gly Leu Phe Ser Cys Val Ile Asn Gly Glu Glu His Glu Gln Thr His
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Arg Ala Ile Phe Arg Phe Val Pro Arg His Glu Asp Glu Leu Glu Leu
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Glu Val Asp Asp Pro Leu Leu Val Glu Leu Gln Ala Glu Asp Tyr Trp
515 520 525

Tyr Glu Ala Tyr Asn Met Arg Thr Gly Ala Arg Gly Val Phe Pro Ala
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Tyr Tyr Ala Ile Glu Val Thr Lys Glu Pro Glu His Met Ala Ala Leu
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Ala Lys Asn Ser Asp Trp Ile Asp Gln Phe Arg Val Lys Phe Leu Gly
565 570 575

Ser Val Gln Val Pro Tyr His Lys Gly Asn Asp Val Leu Cys Ala Ala
580 585 590

Met Gln Lys Ile Ala Thr Thr Arg Arg Leu Thr Val His Phe Asn Pro
595 600 605

Pro Ser Ser Cys Val Leu Glu Ile Ser Val Arg Gly Val Lys Ile Gly
610 615 620

Val Lys Ala Asp Glu Ala Gln Glu Ala Lys Gly Asn Lys Cys Ser His
625 630 635 640

Phe Phe Gln Leu Lys Asn Ile Ser Phe Cys Gly Tyr His Pro Lys Asn
645 650 655

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Asn Lys Tyr Phe Gly Phe Ile Thr Lys His Pro Ala Asp His Arg Phe
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Ala Cys His Val Phe Val Ser Glu Asp Ser Thr Lys Ala Leu Ala Glu
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Ser Val Gly Arg Ala Phe Gln Gln Phe Tyr Lys Gln Phe Val Glu Tyr
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Thr Cys Pro Thr Glu Asp Ile Tyr Leu Glu
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<211> 711

<212> PRT

<213> Homo sapiens

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<223> description of sequence: human IB1 protein sequence

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35 40 45

Leu Ser Glu Ile Thr Asp Glu Cys Gly Ile Ser Leu Gln Cys Lys Asp
50 55 60

Thr Leu Ser Leu Arg Pro Pro Arg Ala Gly Leu Leu Ser Ala Gly Gly
65 70 75 80

Gly Gly Ala Gly Ser Arg Leu Gln Ala Glu Met Leu Gln Met Asp Leu
85 90 95

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Ile Asp Ala Thr Gly Asp Thr Pro Gly Ala Glu Asp Asp Glu Glu Asp
100 105 110

Asp Asp Glu Glu Arg Ala Ala Arg Arg Pro Gly Ala Gly Pro Pro Lys
115 120 125

Ala Glu Ser Gly Gln Glu Pro Ala Ser Arg Gly Gln Gly Gln Ser Gln
130 135 140

Gly Gln Ser Gln Gly Pro Gly Ser Gly Asp Thr Tyr Arg Pro Lys Arg
145 150 155 160

Pro Thr Thr Leu Asn Leu Phe Pro Gln Val Pro Arg Ser Gln Asp Thr
165 170 175

Leu Asn Asn Asn Ser Leu Gly Lys Lys His Ser Trp Gln Asp Arg Val
180 185 190

Ser Arg Ser Ser Ser Pro Leu Lys Thr Gly Glu Gln Thr Pro Pro His
195 200 205

Glu His Ile Cys Leu Ser Asp Glu Leu Pro Pro Gln Ser Gly Pro Ala
210 215 220

Pro Thr Thr Asp Arg Gly Thr Ser Thr Asp Ser Pro Cys Arg Arg Ser
225 230 235 240

Thr Ala Thr Gln Met Ala Pro Pro Gly Gly Pro Pro Ala Ala Pro Pro
245 250 255

Gly Gly Arg Gly His Ser His Arg Asp Arg Ile His Tyr Gln Ala Asp
260 265 270

Val Arg Leu Glu Ala Thr Glu Glu Ile Tyr Leu Thr Pro Val Gln Arg
275 280 285

Pro Pro Asp Ala Ala Glu Pro Thr Ser Ala Phe Leu Pro Pro Thr Glu
290 295 300

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Ser Arg Met Ser Val Ser Ser Asp Pro Asp Pro Ala Ala Tyr Pro Ser
305 310 315 320

Thr Ala Gly Arg Pro His Pro Ser Ile Ser Glu Glu Glu Glu Gly Phe
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Asp Cys Leu Ser Ser Pro Glu Arg Ala Glu Pro Pro Gly Gly Gly Trp
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Arg Gly Ser Leu Gly Glu Pro Pro Pro Pro Pro Arg Ala Ser Leu Ser
355 360 365

Ser Asp Thr Ser Ala Leu Ser Tyr Asp Ser Val Lys Tyr Thr Leu Val
370 375 380

Val Asp Glu His Ala Gln Leu Glu Leu Val Ser Leu Arg Pro Cys Phe
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Gly Asp Tyr Ser Asp Glu Ser Asp Ser Ala Thr Val Tyr Asp Asn Cys
405 410 415

Ala Ser Val Ser Ser Pro Tyr Glu Ser Ala Ile Gly Glu Glu Tyr Glu
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Glu Ala Pro Arg Pro Gln Pro Pro Ala Cys Leu Ser Glu Asp Ser Thr
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Pro Asp Glu Pro Asp Val His Phe Ser Lys Lys Phe Leu Asn Val Phe
450 455 460

Met Ser Gly Arg Ser Arg Ser Ser Ser Ala Glu Ser Phe Gly Leu Phe
465 470 475 480

Ser Cys Ile Ile Asn Gly Glu Glu Gln Glu Gln Thr His Arg Ala Ile
485 490 495

Phe Arg Phe Val Pro Arg His Glu Asp Glu Leu Glu Leu Glu Val Asp
500 505 510

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Asp Pro Leu Leu Val Glu Leu Gln Ala Glu Asp Tyr Trp Tyr Glu Ala
515 520 525

Tyr Asn Met Arg Thr Gly Ala Arg Gly Val Phe Pro Ala Tyr Tyr Ala
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Ile Glu Val Thr Lys Glu Pro Glu His Met Ala Ala Leu Ala Lys Asn
545 550 555 560

Ser Asp Trp Val Asp Gln Phe Arg Val Lys Phe Leu Gly Ser Val Gln
565 570 575

Val Pro Tyr His Lys Gly Asn Asp Val Leu Cys Ala Ala Met Gln Lys
580 585 590

Ile Ala Thr Thr Arg Arg Leu Thr Val His Phe Asn Pro Pro Ser Ser
595 600 605

Cys Val Leu Glu Ile Ser Val Arg Gly Val Lys Ile Gly Val Lys Ala
610 615 620

Asp Asp Ser Gln Glu Ala Lys Gly Asn Lys Cys Ser His Phe Phe Gln
625 630 635 640

Leu Lys Asn Ile Ser Phe Cys Gly Tyr His Pro Lys Asn Asn Lys Tyr
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Phe Gly Phe Ile Thr Lys His Pro Ala Asp His Arg Phe Ala Cys His
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Val Phe Val Ser Glu Asp Ser Thr Lys Ala Leu Ala Glu Ser Val Gly
675 680 685

Arg Ala Phe Gln Gln Phe Tyr Lys Gln Phe Val Glu Tyr Thr Cys Pro
690 695 700

Thr Glu Asp Ile Tyr Leu Glu
705 710

2014006872

<210> 105
<211> 2136
<212> DNA
<213> Homo sapiens

<220>
<223> description of sequence: nucleic acid sequence encoding human IB1 protein

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