

P7009PC00_seq1ist
SEQUENCE LISTING

<110> Vision Global Holdings Ltd.
WONG, Bing Lou

<120> PHARMACEUTICAL COMPOSITION COMPRISING MODIFIED HEMOGLOBIN-BASED
THERAPEUTIC AGENT FOR CANCER TARGETING TREATMENT AND DIAGNOSTIC
IMAGING

<130> P7009PC00

<160> 10

<170> PatentIn version 3.5

<210> 1
<211> 141
<212> PRT
<213> Bovine

<400> 1

Val Leu Ser Ala Ala Asp Lys Gly Asn Val Lys Ala Ala Trp Gly Lys
1 5 10 15

Val Gly Gly His Ala Ala Glu Tyr Gly Ala Glu Ala Leu Glu Arg Met
20 25 30

Phe Leu Ser Phe Pro Thr Thr Lys Thr Tyr Phe Pro His Phe Asp Leu
35 40 45

Ser His Gly Ser Ala Gln Val Lys Gly His Gly Ala Lys Val Ala Ala
50 55 60

Ala Leu Thr Lys Ala Val Glu His Leu Asp Asp Leu Pro Gly Ala Leu
65 70 75 80

Ser Glu Leu Ser Asp Leu His Ala His Lys Leu Arg Val Asp Pro Val
85 90 95

Asn Phe Lys Leu Leu Ser His Ser Leu Leu Val Thr Leu Ala Ser His
100 105 110

Leu Pro Ser Asp Phe Thr Pro Ala Val His Ala Ser Leu Asp Lys Phe
115 120 125

Leu Ala Asn Val Ser Thr Val Leu Thr Ser Lys Tyr Arg
130 135 140

<210> 2
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<212> PRT
<213> Homo sapiens

<400> 2

Met Val Leu Ser Pro Ala Asp Lys Thr Asn Val Lys Ala Ala Trp Gly
1 5 10 15

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Lys Val Gly Ala His Ala Gly Glu Tyr Gly Ala Glu Ala Leu Glu Arg
20 25 30

Met Phe Leu Ser Phe Pro Thr Thr Lys Thr Tyr Phe Pro His Phe Asp
35 40 45

Leu Ser His Gly Ser Ala Gln Val Lys Gly His Gly Lys Lys Val Ala
50 55 60

Asp Ala Leu Thr Asn Ala Val Ala His Val Asp Asp Met Pro Asn Ala
65 70 75 80

Leu Ser Ala Leu Ser Asp Leu His Ala His Lys Leu Arg Val Asp Pro
85 90 95

Val Asn Phe Lys Leu Leu Ser His Cys Leu Leu Val Thr Leu Ala Ala
100 105 110

His Leu Pro Ala Glu Phe Thr Pro Ala Val His Ala Ser Leu Asp Lys
115 120 125

Phe Leu Ala Ser Val Ser Thr Val Leu Thr Ser Lys Tyr Arg
130 135 140

<210> 3
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<213> Canine

<400> 3

Val Leu Ser Pro Ala Asp Lys Thr Asn Ile Lys Ser Thr Trp Asp Lys
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Ile Gly Gly His Ala Gly Asp Tyr Gly Gly Glu Ala Leu Asp Arg Thr
20 25 30

Phe Gln Ser Phe Pro Thr Thr Lys Thr Tyr Phe Pro His Phe Asp Leu
35 40 45

Ser Pro Gly Ser Ala Gln Val Lys Ala His Gly Lys Lys Val Ala Asp
50 55 60

Ala Leu Thr Thr Ala Val Ala His Leu Asp Asp Leu Pro Gly Ala Leu
65 70 75 80

Ser Ala Leu Ser Asp Leu His Ala Tyr Lys Leu Arg Val Asp Pro Val
85 90 95

Asn Phe Lys Leu Leu Ser His Cys Leu Leu Val Thr Leu Ala Cys His
100 105 110

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His Pro Thr Glu Phe Thr Pro Ala Val His Ala Ser Leu Asp Lys Phe
115 120 125

Phe Ala Ala Val Ser Thr Val Leu Thr Ser Lys Tyr Arg
130 135 140

<210> 4
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<212> PRT
<213> Porcine

<400> 4

Val Leu Ser Ala Ala Asp Lys Ala Asp Val Lys Ala Ala Tyr Gly Lys
1 5 10 15

Val Gly Ala His Ala Gly Glu Ala Gly Ala Glu Ala Leu Glu Arg Met
20 25 30

Phe Leu Gly Phe Thr Thr Thr Lys Thr Tyr Phe Pro His Phe Asp Leu
35 40 45

Ser His Gly Ser Asp Glu Val Lys Ala His Gly Glu Lys Val Ala Asp
50 55 60

Ala Leu Thr Lys Ala Val Gly His Leu Asp Asp Met Pro Gly Ala Leu
65 70 75 80

Ser Ala Leu Ser Asp Leu His Ala His Lys Leu Arg Val Asp Pro Val
85 90 95

Asp Phe Lys Leu Leu Ser His Cys Leu Leu Ser Thr Leu Ala Val His
100 105 110

Leu Pro Asp Asp Phe Thr Pro Ala Val His Ala Asp Leu Asp Lys Phe
115 120 125

Leu Ala Asp Val Ser Thr Val Leu Asp Ser Lys Tyr Arg
130 135 140

<210> 5
<211> 142
<212> PRT
<213> Equine

<400> 5

Met Val Leu Ser Ala Ala Asp Lys Thr Asn Val Lys Ala Ala Trp Ser
1 5 10 15

Lys Val Gly Gly His Ala Gly Glu Phe Gly Ala Glu Ala Leu Glu Arg
20 25 30

Met Phe Leu Gly Phe Pro Thr Thr Lys Thr Tyr Phe Pro His Phe Asp
35 40 45

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Leu Ser His Gly Ser Ala Gln Val Lys Ala His Gly Lys Lys Val Gly
 50 55 60
 Asp Ala Leu Thr Leu Ala Val Gly His Leu Asp Asp Leu Pro Gly Ala
 65 70 75 80
 Leu Ser Asn Leu Ser Asp Leu His Ala His Lys Leu Arg Val Asp Pro
 85 90 95
 Val Asn Phe Lys Leu Leu Ser His Cys Leu Leu Ser Thr Leu Ala Val
 100 105 110
 His Leu Pro Asn Asp Phe Thr Pro Ala Val His Ala Ser Leu Asp Lys
 115 120 125
 Phe Leu Ser Ser Val Ser Thr Val Leu Thr Ser Lys Tyr Arg
 130 135 140
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 Met Leu Thr Ala Glu Glu Lys Ala Ala Val Thr Ala Phe Trp Gly Lys
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 Val Lys Val Asp Glu Val Gly Gly Glu Ala Leu Gly Arg Leu Leu Val
 20 25 30
 Val Tyr Pro Trp Thr Gln Arg Phe Phe Glu Ser Phe Gly Asp Leu Ser
 35 40 45
 Thr Ala Asp Ala Val Met Asn Asn Pro Lys Val Lys Ala His Gly Lys
 50 55 60
 Lys Val Leu Asp Ser Phe Ser Asn Gly Met Lys His Leu Asp Asp Leu
 65 70 75 80
 Lys Gly Thr Phe Ala Ala Leu Ser Glu Leu His Cys Asp Lys Leu His
 85 90 95
 Val Asp Pro Glu Asn Phe Lys Leu Leu Gly Asn Val Leu Val Val Val
 100 105 110
 Leu Ala Arg Asn Phe Gly Lys Glu Phe Thr Pro Val Leu Gln Ala Asp
 115 120 125
 Phe Gln Lys Val Val Ala Gly Val Ala Asn Ala Leu Ala His Arg Tyr
 130 135 140

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His
145

<210> 7
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<212> PRT
<213> Homo sapiens

<400> 7

Met Val His Leu Thr Pro Glu Glu Lys Ser Ala Val Thr Ala Leu Trp
1 5 10 15

Gly Lys Val Asn Val Asp Glu Val Gly Gly Glu Ala Leu Gly Arg Leu
20 25 30

Leu Val Val Tyr Pro Trp Thr Gln Arg Phe Phe Glu Ser Phe Gly Asp
35 40 45

Leu Ser Thr Pro Asp Ala Val Met Gly Asn Pro Lys Val Lys Ala His
50 55 60

Gly Lys Lys Val Leu Gly Ala Phe Ser Asp Gly Leu Ala His Leu Asp
65 70 75 80

Asn Leu Lys Gly Thr Phe Ala Thr Leu Ser Glu Leu His Cys Asp Lys
85 90 95

Leu His Val Asp Pro Glu Asn Phe Arg Leu Leu Gly Asn Val Leu Val
100 105 110

Cys Val Leu Ala His His Phe Gly Lys Glu Phe Thr Pro Pro Val Gln
115 120 125

Ala Ala Tyr Gln Lys Val Val Ala Gly Val Ala Asn Ala Leu Ala His
130 135 140

Lys Tyr His
145

<210> 8
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<212> PRT
<213> Canine

<400> 8

Val Leu Ser Pro Ala Asp Lys Thr Asn Ile Lys Ser Thr Trp Asp Lys
1 5 10 15

Ile Gly Gly His Ala Gly Asp Tyr Gly Gly Glu Ala Leu Asp Arg Thr
20 25 30

Phe Gln Ser Phe Pro Thr Thr Lys Thr Tyr Phe Pro His Phe Asp Leu
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35

40

45

Ser Pro Gly Ser Ala Gln Val Lys Ala His Gly Lys Lys Val Ala Asp
50 55 60

Ala Leu Thr Thr Ala Val Ala His Leu Asp Asp Leu Pro Gly Ala Leu
65 70 75 80

Ser Ala Leu Ser Asp Leu His Ala Tyr Lys Leu Arg Val Asp Pro Val
85 90 95

Asn Phe Lys Leu Leu Ser His Cys Leu Leu Val Thr Leu Ala Cys His
100 105 110

His Pro Thr Glu Phe Thr Pro Ala Val His Ala Ser Leu Asp Lys Phe
115 120 125

Phe Ala Ala Val Ser Thr Val Leu Thr Ser Lys Tyr Arg
130 135 140

<210> 9

<211> 147

<212> PRT

<213> Porcine

<400> 9

Met Val His Leu Ser Ala Glu Glu Lys Glu Ala Val Leu Gly Leu Trp
1 5 10 15

Gly Lys Val Asn Val Asp Glu Val Gly Gly Glu Ala Leu Gly Arg Leu
20 25 30

Leu Val Val Tyr Pro Trp Thr Gln Arg Phe Phe Glu Ser Phe Gly Asp
35 40 45

Leu Ser Asn Ala Asp Ala Val Met Gly Asn Pro Lys Val Lys Ala His
50 55 60

Gly Lys Lys Val Leu Gln Ser Phe Ser Asp Gly Leu Lys His Leu Asp
65 70 75 80

Asn Leu Lys Gly Thr Phe Ala Lys Leu Ser Glu Leu His Cys Asp Gln
85 90 95

Leu His Val Asp Pro Glu Asn Phe Arg Leu Leu Gly Asn Val Ile Val
100 105 110

Val Val Leu Ala Arg Arg Leu Gly His Asp Phe Asn Pro Asn Val Gln
115 120 125

Ala Ala Phe Gln Lys Val Val Ala Gly Val Ala Asn Ala Leu Ala His
130 135 140

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Lys Tyr His
145

<210> 10
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<400> 10

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

Asp Lys Val Asn Glu Glu Glu Val Gly Gly Glu Ala Leu Gly Arg Leu
20 25 30

Leu Val Val Tyr Pro Trp Thr Gln Arg Phe Phe Asp Ser Phe Gly Asp
35 40 45

Leu Ser Asn Pro Gly Ala Val Met Gly Asn Pro Lys Val Lys Ala His
50 55 60

Gly Lys Lys Val Leu His Ser Phe Gly Glu Gly Val His His Leu Asp
65 70 75 80

Asn Leu Lys Gly Thr Phe Ala Ala Leu Ser Glu Leu His Cys Asp Lys
85 90 95

Leu His Val Asp Pro Glu Asn Phe Arg Leu Leu Gly Asn Val Leu Val
100 105 110

Val Val Leu Ala Arg His Phe Gly Lys Asp Phe Thr Pro Glu Leu Gln
115 120 125

Ala Ser Tyr Gln Lys Val Val Ala Gly Val Ala Asn Ala Leu Ala His
130 135 140

Lys Tyr His
145