

SEQUENCE LISTING

<110> Nihon Medi-Physics Co.,Ltd.
 株式会社住友ダインIPPONファーマ株式会社

<120> RI-labeled mucin subtype 5AC-specific humanized antibody

<130> 093074

<150> JP2019-191562

<151> 2019-10-18

<160> 26

<170> PatentIn version 3.5

<210> 1

<211> 121

<212> PRT

<213> Artificial Sequence

<220>

<223> Humanaized antibody heavy chain variable region 1 (H01)

<400> 1

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

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

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

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

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
 65 70 75 80

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

Thr Arg His Leu Asp Tyr Ala Asn Tyr Asp Ala Met Asp Tyr Trp Gly
 100 105 110

Gln Gly Thr Leu Val Thr Val Ser Ser
 115 120

<210> 2

<211> 121

<212> PRT

<213> Artificial Sequence



<220>

<223> Humanized antibody heavy chain variable region 2 (H02)

<400> 2

Leu Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Arg Pro Gly Gly
1 5 10 15

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

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

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

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Tyr
65 70 75 80

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

Thr Arg His Leu Asp Tyr Ala Asn Tyr Asp Ala Met Asp Tyr Trp Gly
100 105 110

Gln Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 3

<211> 121

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<220>

<223> Humanized antibody heavy chain variable region 3 (H03)

<400> 3

Leu Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Arg
1 5 10 15

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

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

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

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65 70 75 80



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

Thr Arg His Leu Asp Tyr Ala Asn Tyr Asp Ala Met Asp Tyr Trp Gly
100 105 110

Gln Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 4
<211> 121
<212> PRT
<213> Artificial Sequence

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<223> Humanized antibody heavy chain variable region 4 (H04)

<400> 4

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

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

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

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

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Arg Asn Thr Leu Tyr
65 70 75 80

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

Thr Arg His Leu Asp Tyr Ala Asn Tyr Asp Ala Met Asp Tyr Trp Gly
100 105 110

Gln Gly Thr Pro Val Thr Val Ser Ser
115 120

<210> 5
<211> 111
<212> PRT
<213> Artificial Sequence

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<223> Humanized antibody light chain variable region 1 (L01)

<400> 5



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

Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Lys Ser Val Thr Thr Ser
20 25 30

Asp Phe Ser Tyr Met His Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro
35 40 45

Lys Leu Leu Ile Tyr Leu Ala Ser Asn Leu Glu Ser Gly Val Pro Ser
50 55 60

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

Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys Gln His Ser Arg
85 90 95

Glu Phe Pro Trp Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
100 105 110

<210> 6
<211> 111
<212> PRT
<213> Artificial Sequence

<220>
<223> Humanized antibody light chain variable region 2 (L02)

<400> 6

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

Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Lys Ser Val Thr Thr Ser
20 25 30

Asp Phe Ser Tyr Met His Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro
35 40 45

Lys Leu Leu Ile Tyr Leu Ala Ser Asn Leu Glu Ser Gly Val Pro Ser
50 55 60

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

Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys Gln His Ser Arg
85 90 95

Glu Phe Pro Trp Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys
100 105 110



<210> 7
<211> 111
<212> PRT
<213> Artificial Sequence

<220>
<223> Humanized antibody light chain variable region 3 (L03)

<400> 7

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

Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Lys Ser Val Thr Thr Ser
20 25 30

Asp Phe Ser Tyr Met His Trp Tyr Gln Gln Lys Pro Gly Lys Ser Pro
35 40 45

Lys Leu Leu Ile Tyr Leu Ala Ser Asn Leu Glu Ser Gly Val Pro Ser
50 55 60

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

Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys Gln His Ser Arg
85 90 95

Glu Phe Pro Trp Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
100 105 110

<210> 8
<211> 111
<212> PRT
<213> Artificial Sequence

<220>
<223> Humanized antibody light chain variable region 4 (L04)

<400> 8

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

Glu Arg Ala Thr Ile Asn Cys Lys Ala Ser Lys Ser Val Thr Thr Ser
20 25 30

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

Lys Leu Leu Ile Tyr Leu Ala Ser Asn Leu Glu Ser Gly Val Pro Asp
50 55 60



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

Ser Leu Gln Ala Glu Asp Val Ala Val Tyr Tyr Cys Gln His Ser Arg
85 90 95

Glu Phe Pro Trp Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys
100 105 110

<210> 9
<211> 13
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<213> Artificial

<220>
<223> antibody-binding peptide

<220>
<221> misc_feature
<222> (6)..(6)
<223> Xaa is lysine, cystein, aspartic acid, glutamic acid, 2-amino
suberic acid, or diaminopropionic acid

<400> 9

Asp Cys Ala Tyr His Xaa Gly Glu Leu Val Trp Cys Thr
1 5 10

<210> 10
<211> 17
<212> PRT
<213> Artificial

<220>
<223> antibody-binding peptide

<220>
<221> misc_feature
<222> (8)..(8)
<223> Xaa is lysine, cystein, aspartic acid, glutamic acid, 2-amino
suberic acid, or diaminopropionic acid

<400> 10

Gly Pro Asp Cys Ala Tyr His Xaa Gly Glu Leu Val Trp Cys Thr Phe
1 5 10 15

His

<210> 11
<211> 13
<212> PRT
<213> Artificial

<220>
<223> antibody-binding peptide



<220>
<221> misc_feature
<222> (6)..(6)
<223> Xaa is lysine, cystein, aspartic acid, glutamic acid, 2-amino
suberic acid, or diaminopropionic acid

<400> 11

Arg Cys Ala Tyr His Xaa Gly Glu Leu Val Trp Cys Ser
1 5 10

<210> 12
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<223> antibody-binding peptide

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<222> (8)..(8)
<223> Xaa is lysine, cystein, aspartic acid, glutamic acid, 2-amino
suberic acid, or diaminopropionic acid

<400> 12

Gly Pro Arg Cys Ala Tyr His Xaa Gly Glu Leu Val Trp Cys Ser Phe
1 5 10 15

His

<210> 13
<211> 17
<212> PRT
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<223> antibody-binding peptide

<220>
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<223> Xaa is lysine, cystein, aspartic acid, glutamic acid, 2-amino
suberic acid, or diaminopropionic acid

<400> 13

Ser Pro Asp Cys Ala Tyr His Xaa Gly Glu Leu Val Trp Cys Thr Phe
1 5 10 15

His

<210> 14



<211> 17
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<223> antibody-binding peptide

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<222> (8)..(8)
<223> Xaa is lysine, cystein, aspartic acid, glutamic acid, 2-amino
suberic acid, or diaminopropionic acid

<400> 14

Gly Asp Asp Cys Ala Tyr His Xaa Gly Glu Leu Val Trp Cys Thr Phe
1 5 10 15

His

<210> 15
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<212> PRT
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<223> antibody-binding peptide

<220>
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<222> (8)..(8)
<223> Xaa is lysine, cystein, aspartic acid, glutamic acid, 2-amino
suberic acid, or diaminopropionic acid

<400> 15

Gly Pro Ser Cys Ala Tyr His Xaa Gly Glu Leu Val Trp Cys Thr Phe
1 5 10 15

His

<210> 16
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<223> antibody-binding peptide

<220>
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<222> (8)..(8)
<223> Xaa is lysine, cystein, aspartic acid, glutamic acid, 2-amino
suberic acid, or diaminopropionic acid

<400> 16



Gly Pro Asp Cys Ala Tyr His Xaa Gly Glu Leu Val Trp Cys Ser Phe
1 5 10 15

His

<210> 17
<211> 17
<212> PRT
<213> Artificial

<220>
<223> antibody-binding peptide

<220>
<221> misc_feature
<222> (8)..(8)
<223> Xaa is lysine, cystein, aspartic acid, glutamic acid, 2-amino
suberic acid, or diaminopropionic acid

<400> 17

Gly Pro Asp Cys Ala Tyr His Xaa Gly Glu Leu Val Trp Cys Thr His
1 5 10 15

His

<210> 18
<211> 17
<212> PRT
<213> Artificial

<220>
<223> antibody-binding peptide

<220>
<221> misc_feature
<222> (8)..(8)
<223> Xaa is lysine, cystein, aspartic acid, glutamic acid, 2-amino
suberic acid, or diaminopropionic acid

<400> 18

Gly Pro Asp Cys Ala Tyr His Xaa Gly Glu Leu Val Trp Cys Thr Phe
1 5 10 15

Tyr

<210> 19
<211> 17
<212> PRT
<213> Artificial

<220>



<223> antibody-binding peptide

<220>

<221> misc_feature

<222> (8)..(8)

<223> Xaa is lysine, cystein, aspartic acid, glutamic acid, 2-amino
suberic acid, or diaminopropionic acid

<400> 19

Ser	Pro	Asp	Cys	Ala	Tyr	His	Xaa	Gly	Glu	Leu	Val	Trp	Cys	Thr	Phe
1				5					10					15	

Tyr

<210> 20

<211> 17

<212> PRT

<213> Artificial

<220>

<223> antibody-binding peptide

<220>

<221> misc_feature

<222> (8)..(8)

<223> Xaa is lysine, cystein, aspartic acid, glutamic acid, 2-amino
suberic acid, or diaminopropionic acid

<400> 20

Ser	Asp	Asp	Cys	Ala	Tyr	His	Xaa	Gly	Glu	Leu	Val	Trp	Cys	Thr	Phe
1				5					10					15	

Tyr

<210> 21

<211> 17

<212> PRT

<213> Artificial

<220>

<223> antibody-binding peptide

<220>

<221> misc_feature

<222> (8)..(8)

<223> Xaa is lysine, cystein, aspartic acid, glutamic acid, 2-amino
suberic acid, or diaminopropionic acid

<400> 21

Arg	Gly	Asn	Cys	Ala	Tyr	His	Xaa	Gly	Gln	Leu	Val	Trp	Cys	Thr	Tyr
1				5					10					15	



His

<210> 22
<211> 17
<212> PRT
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<220>
<223> antibody-binding peptide

<220>
<221> misc_feature
<222> (2)..(2)
<223> Xaa is homocysteine

<220>
<221> misc_feature
<222> (8)..(8)
<223> Xaa is lysine, cystein, aspartic acid, glutamic acid, 2-amino
suberic acid, or diaminopropionic acid

<220>
<221> misc_feature
<222> (16)..(16)
<223> Xaa is homocysteine

<400> 22

Gly Xaa Asp Cys Ala Tyr His Xaa Gly Glu Leu Val Trp Cys Thr Xaa
1 5 10 15

His

<210> 23
<211> 121
<212> PRT
<213> Artificial Sequence

<220>
<223> Kimeric antibody heavy chain variable region 7 (H07)

<400> 23

Glu Val Lys Leu Val Glu Ser Gly Gly Val Leu Val Lys Ser Gly Gly
1 5 10 15

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

Gly Met Ser Trp Val Arg Gln Thr Pro Glu Lys Arg Leu Glu Trp Val
35 40 45

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

Lys Gly Pro Phe Ala Ile Ser Arg Asp Asn Ala Lys Asn Asn Leu Tyr
65 70 75 80



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

Thr Arg His Leu Asp Tyr Ala Asn Tyr Asp Ala Met Asp Tyr Trp Gly
100 105 110

Gln Gly Thr Ser Val Thr Val Ser Ser
115 120

<210> 24
<211> 111
<212> PRT
<213> Artificial Sequence

<220>
<223> Kimeric antibody light chain variable region 8 (L08)

<400> 24

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

Gln Arg Ala Thr Ile Ser Cys Arg Ala Ser Lys Ser Val Thr Thr Ser
20 25 30

Asp Phe Ser Tyr Met His Trp Tyr Gln Gln Lys Pro Gly Gln Pro Pro
35 40 45

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

Arg Phe Ser Gly Ser Gly Ser Gly Tyr Asp Phe Tyr Leu Asn Ile His
65 70 75 80

Pro Val Glu Glu Glu Asp Ala Ala Thr Tyr Tyr Cys Gln His Ser Arg
85 90 95

Glu Phe Pro Trp Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys
100 105 110

<210> 25
<211> 330
<212> PRT
<213> Artificial Sequence

<220>
<223> Heavy chain constant region

<400> 1

Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Ser Ser Lys
1 5 10 15

Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr



20

25

30

Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser
35 40 45

Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser
50 55 60

Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr Gln Thr
65 70 75 80

Tyr Ile Cys Asn Val Asn His Lys Pro Ser Asn Thr Lys Val Asp Lys
85 90 95

Lys Val Glu Pro Lys Ser Cys Asp Lys Thr His Thr Cys Pro Pro Cys
100 105 110

Pro Ala Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro
115 120 125

Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys
130 135 140

Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp
145 150 155 160

Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu
165 170 175

Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu
180 185 190

His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn
195 200 205

Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly
210 215 220

Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Asp Glu
225 230 235 240

Leu Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr
245 250 255

Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn
260 265 270

Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe
275 280 285



Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn
290 295 300

Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr
305 310 315 320

Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
325 330

<210> 26

<211> 107

<212> PRT

<213> Artificial Sequence

<220>

<223> Light chain constant region

<400> 26

Arg Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu
1 5 10 15

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

Tyr Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln
35 40 45

Ser Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser
50 55 60

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

Lys His Lys Val Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser
85 90 95

Pro Val Thr Lys Ser Phe Asn Arg Gly Glu Cys
100 105

