

2921077PC03SL
SEQUENCE LISTING

<110> IMMUNOGEN, INC.
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PINKAS, JAN
RUIZ-SOTO, RODRIGO R.

<120> THERAPEUTIC COMBINATIONS COMPRISING ANTI-FOLR1 IMMUNOCONJUGATES

<130> 2921.077PC03/EKS/CLD/MKK

<150> 62/220,028
<151> 2015-09-17

<150> 62/242,669
<151> 2015-10-16

<150> 62/250,756
<151> 2015-11-04

<160> 19

<170> PatentIn version 3.5

<210> 1
<211> 257
<212> PRT
<213> Homo sapiens

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Met Ala Gln Arg Met Thr Thr Gln Leu Leu Leu Leu Val Trp Val
1 5 10 15

Ala Val Val Gly Glu Ala Gln Thr Arg Ile Ala Trp Ala Arg Thr Glu
20 25 30

Leu Leu Asn Val Cys Met Asn Ala Lys His His Lys Glu Lys Pro Gly
35 40 45

Pro Glu Asp Lys Leu His Glu Gln Cys Arg Pro Trp Arg Lys Asn Ala
50 55 60

Cys Cys Ser Thr Asn Thr Ser Gln Glu Ala His Lys Asp Val Ser Tyr

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65		70		75		80									
Leu	Tyr	Arg	Phe	Asn	Trp	Asn	His	Cys	Gly	Glu	Met	Ala	Pro	Ala	Cys
			85						90					95	
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Val	Leu	Asn	Val	Pro	Leu	Cys	Lys	Glu	Asp	Cys	Glu	Gln	Trp	Trp	Glu
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Asp	Cys	Arg	Thr	Ser	Tyr	Thr	Cys	Lys	Ser	Asn	Trp	His	Lys	Gly	Trp
145					150					155					160
Asn	Trp	Thr	Ser	Gly	Phe	Asn	Lys	Cys	Ala	Val	Gly	Ala	Ala	Cys	Gln
				165					170					175	
Pro	Phe	His	Phe	Tyr	Phe	Pro	Thr	Pro	Thr	Val	Leu	Cys	Asn	Glu	Ile
			180					185					190		
Trp	Thr	His	Ser	Tyr	Lys	Val	Ser	Asn	Tyr	Ser	Arg	Gly	Ser	Gly	Arg
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Cys	Ile	Gln	Met	Trp	Phe	Asp	Pro	Ala	Gln	Gly	Asn	Pro	Asn	Glu	Glu
	210					215					220				
Val	Ala	Arg	Phe	Tyr	Ala	Ala	Ala	Met	Ser	Gly	Ala	Gly	Pro	Trp	Ala
225					230					235					240
Ala	Trp	Pro	Phe	Leu	Leu	Ser	Leu	Ala	Leu	Met	Leu	Leu	Trp	Leu	Leu
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Ser

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<210> 2
 <211> 771
 <212> DNA
 <213> Homo sapiens

<400> 2
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 aagcaccaca aggaaaagcc aggccccgag gacaagttgc atgagcagtg tcgaccctgg 180
 aggaagaatg cctgctgttc taccaacacc agccaggaag cccataagga tgtttcctac 240
 ctatatagat tcaactggaa ccaactgtga gagatggcac ctgcctgcaa acggcatttc 300
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 gatcagagct ggcgcaaaga gcgggtactg aacgtgcccc tgtgcaaaga ggactgtgag 420
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<210> 3
 <211> 118
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> FOLR1 Antibody huMov19 - VH

<400> 3

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

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

Phe Met Asn Trp Val Lys Gln Ser Pro Gly Gln Ser Leu Glu Trp Ile
35 40 45

Gly Arg Ile His Pro Tyr Asp Gly Asp Thr Phe Tyr Asn Gln Lys Phe
50 55 60

Gln Gly Lys Ala Thr Leu Thr Val Asp Lys Ser Ser Asn Thr Ala His
65 70 75 80

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

Thr Arg Tyr Asp Gly Ser Arg Ala Met Asp Tyr Trp Gly Gln Gly Thr
100 105 110

Thr Val Thr Val Ser Ser
115

<210> 4
<211> 112
<212> PRT
<213> Artificial Sequence

<220>
<223> FOLR1 Antibody huMov19 - VL version 1.00

<400> 4

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

Gln Pro Ala Ile Ile Ser Cys Lys Ala Ser Gln Ser Val Ser Phe Ala
20 25 30

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Gly Thr Ser Leu Met His Trp Tyr His Gln Lys Pro Gly Gln Gln Pro
35 40 45

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

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

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

Glu Tyr Pro Tyr Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys Arg
100 105 110

<210> 5
<211> 112
<212> PRT
<213> Artificial Sequence

<220>
<223> FOLR1 Antibody huMov19 - VL version 1.60

<400> 5

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

Gln Pro Ala Ile Ile Ser Cys Lys Ala Ser Gln Ser Val Ser Phe Ala
20 25 30

Gly Thr Ser Leu Met His Trp Tyr His Gln Lys Pro Gly Gln Gln Pro
35 40 45

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

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

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

Glu Tyr Pro Tyr Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys Arg
100 105 110

<210> 6
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> huMov19 (M9346A) VL-CDR1

<400> 6

Lys Ala Ser Gln Ser Val Ser Phe Ala Gly Thr Ser Leu Met His
1 5 10 15

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

<220>
<223> huMov19 (M9346A) VL-CDR2

<400> 7

Arg Ala Ser Asn Leu Glu Ala
1 5

<210> 8
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> huMov19 (M9346A) VL-CDR3

<400> 8

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Gln Gln Ser Arg Glu Tyr Pro Tyr Thr
1 5

<210> 9
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> huMov19 (M9346A) Kabat Defined VH-CDR1

<400> 9

Gly Tyr Phe Met Asn
1 5

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

<220>
<223> huMov19 (M9346A) Kabat Defined VH-CDR2

<400> 10

Arg Ile His Pro Tyr Asp Gly Asp Thr Phe Tyr Asn Gln Lys Phe Gln
1 5 10 15

Gly

<210> 11
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> huMov19 (M9346A) AbM Defined VH-CDR2

<400> 11

Arg Ile His Pro Tyr Asp Gly Asp Thr Phe
1 5 10

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<210> 12
 <211> 9
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> huMov19 (M9346A) Kabat and AbM Defined VH-CDR3

<400> 12

Tyr Asp Gly Ser Arg Ala Met Asp Tyr
 1 5

<210> 13
 <211> 448
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> huMov19 - Heavy full-length amino acid sequence

<400> 13

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

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

Phe Met Asn Trp Val Lys Gln Ser Pro Gly Gln Ser Leu Glu Trp Ile
 35 40 45

Gly Arg Ile His Pro Tyr Asp Gly Asp Thr Phe Tyr Asn Gln Lys Phe
 50 55 60

Gln Gly Lys Ala Thr Leu Thr Val Asp Lys Ser Ser Asn Thr Ala His
 65 70 75 80

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

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Thr Arg Tyr Asp Gly Ser Arg Ala Met Asp Tyr Trp Gly Gln Gly Thr
100 105 110

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

Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly
130 135 140

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

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

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

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

Asn Thr Lys Val Asp Lys Lys Val Glu Pro Lys Ser Cys Asp Lys Thr
210 215 220

His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly Gly Pro Ser
225 230 235 240

Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg
245 250 255

Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro
260 265 270

Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala
275 280 285

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Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val
290 295 300

Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr
305 310 315 320

Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr
325 330 335

Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu
340 345 350

Pro Pro Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu Thr Cys
355 360 365

Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser
370 375 380

Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp
385 390 395 400

Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser
405 410 415

Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala
420 425 430

Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
435 440 445

<210> 14

<211> 218

<212> PRT

<213> Artificial Sequence

<220>

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<223> huMov19 - Light version 1.00 full-length amino acid sequence

<400> 14

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

Gln Pro Ala Ile Ile Ser Cys Lys Ala Ser Gln Ser Val Ser Phe Ala
 20 25 30

Gly Thr Ser Leu Met His Trp Tyr His Gln Lys Pro Gly Gln Gln Pro
 35 40 45

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

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

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

Glu Tyr Pro Tyr Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys Arg
 100 105 110

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

Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr
 130 135 140

Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser
 145 150 155 160

Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr
 165 170 175

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

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

Val Thr Lys Ser Phe Asn Arg Gly Glu Cys
210 215

<210> 15

<211> 218

<212> PRT

<213> Artificial Sequence

<220>

<223> huMov19 - Light version 1.60 full-length amino acid sequence

<400> 15

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

Gln Pro Ala Ile Ile Ser Cys Lys Ala Ser Gln Ser Val Ser Phe Ala
20 25 30

Gly Thr Ser Leu Met His Trp Tyr His Gln Lys Pro Gly Gln Gln Pro
35 40 45

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

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

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

Glu Tyr Pro Tyr Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys Arg
100 105 110

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

Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr
 130 135 140

Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser
 145 150 155 160

Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr
 165 170 175

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

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

Val Thr Lys Ser Phe Asn Arg Gly Glu Cys
 210 215

<210> 16

<211> 17

<212> PRT

<213> Artificial Sequence

<220>

<223> muMOV19 Kabat Defined VH-CDR2

<400> 16

Arg Ile His Pro Tyr Asp Gly Asp Thr Phe Tyr Asn Gln Asn Phe Lys
 1 5 10 15

Asp

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<210> 17
 <211> 232
 <212> PRT
 <213> Homo sapiens

<400> 17

Met Asn Phe Leu Leu Ser Trp Val His Trp Ser Leu Ala Leu Leu Leu
 1 5 10 15

Tyr Leu His His Ala Lys Trp Ser Gln Ala Ala Pro Met Ala Glu Gly
 20 25 30

Gly Gly Gln Asn His His Glu Val Val Lys Phe Met Asp Val Tyr Gln
 35 40 45

Arg Ser Tyr Cys His Pro Ile Glu Thr Leu Val Asp Ile Phe Gln Glu
 50 55 60

Tyr Pro Asp Glu Ile Glu Tyr Ile Phe Lys Pro Ser Cys Val Pro Leu
 65 70 75 80

Met Arg Cys Gly Gly Cys Cys Asn Asp Glu Gly Leu Glu Cys Val Pro
 85 90 95

Thr Glu Glu Ser Asn Ile Thr Met Gln Ile Met Arg Ile Lys Pro His
 100 105 110

Gln Gly Gln His Ile Gly Glu Met Ser Phe Leu Gln His Asn Lys Cys
 115 120 125

Glu Cys Arg Pro Lys Lys Asp Arg Ala Arg Gln Glu Lys Lys Ser Val
 130 135 140

Arg Gly Lys Gly Lys Gly Gln Lys Arg Lys Arg Lys Lys Ser Arg Tyr
 145 150 155 160

Lys Ser Trp Ser Val Tyr Val Gly Ala Arg Cys Cys Leu Met Pro Trp

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165

170

175

Ser Leu Pro Gly Pro His Pro Cys Gly Pro Cys Ser Glu Arg Arg Lys
180 185 190

His Leu Phe Val Gln Asp Pro Gln Thr Cys Lys Cys Ser Cys Lys Asn
195 200 205

Thr Asp Ser Arg Cys Lys Ala Arg Gln Leu Glu Leu Asn Glu Arg Thr
210 215 220

Cys Arg Cys Asp Lys Pro Arg Arg
225 230

<210> 18

<211> 26

<212> PRT

<213> Artificial Sequence

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<223> Human VEGF-A signal sequence

<400> 18

Met Asn Phe Leu Leu Ser Trp Val His Trp Ser Leu Ala Leu Leu Leu
1 5 10 15

Tyr Leu His His Ala Lys Trp Ser Gln Ala
20 25

<210> 19

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<223> huMov19 (M9346A) AbM Defined VH-CDR1

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Gly Tyr Thr Phe Thr Gly Tyr Phe Met Asn

1

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