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<110> WuXi Biologics (Shanghai) Co. Ltd.
Open Monoclonal Technology, Inc

<120> NOVEL ANTI-PD-1 ANTIBODIES

<130> 053674-8008W002

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<170> PatentIn version 3.5

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

Thr Tyr Tyr Trp Val Trp Ile Arg Gln Pro Pro Gly Lys Gly Leu Glu
35 40 45

Trp Ile Gly Ser Ile Ser Tyr Ser Gly Asn Thr Tyr Tyr Asn Pro Ser
50 55 60

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

Ser Leu Lys Leu Ser Ser Val Ala Ala Thr Asp Thr Ala Leu Tyr Tyr
85 90 95

Cys Ala Arg His Leu Gly Tyr Asn Gly Arg Tyr Leu Pro Phe Asp Tyr
100 105 110

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 46
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120

cagccccag ggaagggact ggagtggatt gggagtatct cttatagtgg gaacacctac
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tacaatccgt ccctcaagag tcgagtcacc atatccgtag acacgtccaa gaaccacttc
240

tccctgaagc tgagttctgt ggccgccaca gacacggctc tatattactg tgcgagacat
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			20					25					30		

Asn	Tyr	Val	Ser	Trp	Tyr	Gln	Gln	His	Pro	Gly	Lys	Ala	Pro	Glu	Leu
		35					40					45			

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

Ser	Gly	Ser	Lys	Ser	Gly	Asn	Thr	Ala	Ser	Leu	Thr	Ile	Ser	Gly	Leu
65					70					75					80

Gln	Ala	Glu	Asp	Glu	Ala	Asp	Tyr	Tyr	Cys	Ser	Ser	Tyr	Thr	Ser	Ile
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120

cacccaggca aagccccga actcatgatt tatgatgtca ctaatcggcc ctcaggggtt
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tctgatcgct tctctggctc caagtctggc aacacggcct ccctgacat ctctgggctc
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20 25 30

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

Trp Ile Gly Ser Ile Ser Tyr Ser Gly Ser Thr Tyr Tyr Asn Pro Ser
50 55 60

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

Ser Leu Lys Leu Ser Ser Val Thr Asp Ala Asp Thr Ala Val Tyr Tyr
85 90 95

Cys Ala Arg His Leu Gly Tyr Asn Gly Arg Tyr Leu Pro Phe Asp Tyr
100 105 110

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
115 120

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120

cagccccag ggaagggact ggagtggatt gggagtatct cttatagtgg gagcacctac
180

tacaatccgt ccctcaagag tcgagtcacc atatccgtag acacgtccaa gaaccagttc
240

tccctgaagc tgagctctgt gaccgacgca gacacggctg tgtattactg tgcgagacat
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ctaggggtata atgggaggta cctccccttt gactactggg gccagggaac cctggtcacc
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Ser	Ile	Thr	Ile	Ser	Cys	Thr	Gly	Thr	Ser	Ser	Asp	Val	Gly	Phe	Tyr
			20					25					30		

Asn	Tyr	Val	Ser	Trp	Tyr	Gln	Gln	His	Pro	Gly	Lys	Ala	Pro	Glu	Val
		35					40					45			

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

Ser	Gly	Ser	Lys	Ser	Gly	Asn	Thr	Ala	Ser	Leu	Thr	Ile	Ser	Gly	Leu
65					70					75					80

Gln	Ala	Glu	Asp	Glu	Ala	Asp	Tyr	Tyr	Cys	Ser	Ser	Tyr	Thr	Ser	Ile
				85					90					95	

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

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
 115 120

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 20 25 30
 Asn Tyr Val Ser Trp Tyr Gln Gln His Pro Gly Lys Ala Pro Glu Leu
 35 40 45
 Met Ile Tyr Asp Val Ser Asn Arg Pro Ser Gly Val Ser Asp Arg Phe
 50 55 60
 Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Ile Ser Gly Leu
 65 70 75 80

Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Ser Ser Tyr Thr Asn Ile
85 90 95

Ser Thr Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
100 105 110

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120

caccagggca aagccccga actcatgatt tatgatgtca gtaatcggcc ctcagggggt
180

tctgatcgct tctctggctc caagtctggc aacacggcct cctgacat ctctgggctc
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20 25 30

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

Trp Ile Gly Ser Ile Ser Tyr Ser Gly Thr Thr Tyr Tyr Asn Pro Ser
50 55 60

Leu Lys Ser Arg Val Thr Ile Pro Val Asp Thr Ser Lys Asn Gln Ile

65					70						75				80
Ser	Leu	Lys	Leu	Ser	Ser	Val	Thr	Ala	Ala	Asp	Thr	Ser	Leu	Tyr	Tyr
				85					90					95	

Cys	Ala	Arg	His	Leu	Gly	Tyr	Asn	Ser	Asn	Trp	Tyr	Pro	Phe	Asp	Tyr
			100					105					110		

Trp	Gly	Gln	Gly	Thr	Leu	Val	Thr	Val	Ser	Ser
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120

cagccccag ggaaggggct ggagtggatt gggagtatct cttatagtgg gaccacctac
180

tacaaccogt ccctcaagag tcgagtcacc atccccgtag acacgtccaa gaaccagatc
240

tccctgaaac tgagctctgt gaccgccgca gacacgtctt tgtattattg tgcgagacat
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			20					25					30		

Asn	Arg	Val	Ser	Trp	Tyr	Gln	Gln	Pro	Pro	Gly	Thr	Ala	Pro	Glu	Val
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

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50	55	60
Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Ile Ser Gly Leu		
65	70	75
Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Ser Ser Tyr Thr Ser Ser		
85	90	95
Ser Thr Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu		
100	105	110

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 120
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 20 25 30

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

Ser Thr Ile Thr Gly Gly Gly Gly Ser Ile Tyr Tyr Ala 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

Ala Lys Asn Arg Ala Gly Glu Gly Tyr Phe Asp Tyr Trp Gly Gln Gly
 100 105 110

Thr Leu Val Thr Val Ser Ser
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 <212> DNA
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 120
 ccaggggaagg ggctggagtg ggtctcaact attactggtg gtggtggttag catatactac
 180
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<400> 63

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

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

Arg Asp Ser Asn Arg Pro Ser Gly Ile Pro Glu Gly Phe Ser Gly Ser
 50 55 60

Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile Ser Arg Ala Gln Ala Gly
 65 70 75 80

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

Gly Gly Gly Thr Lys Leu Thr Val Leu
 100 105

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 caggccccctg tgctgggtcat ctatagggat agcaaccggc cctctgggat ccctgaggga
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Ser Ser Tyr Thr Ser Ile Ser Thr Trp Val
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 20 25 30

Asn Tyr Val Ser Trp Tyr Gln Gln His Pro Gly Lys Ala Pro Glu Leu
 35 40 45

Met Ile Tyr Asp Val Ser Asn Arg Pro Ser Gly Val Ser Asp Arg Phe
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Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Ile Ser Gly Leu
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