Supplementary File 1. Protein sequences used for human monoclonal antibody production.

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| **Clone, *target*** | **Sequence** | **Reference** |
| **VH variable heavy chain** |
| G2a2,*Anti-DNP* | DVRLQESGPGLVKPSQSLSLTCSVTGYSITNSYYWNWIRQFPGNKLEWMVYIGYDGSNNYNPSLKNRISITRDTSKNQFFLKLNSVTTEDTATYYCARATYYGNYRGFAYWGQGTLVTVSA | Gonzalez 2003 (41) |
| B12,*Anti-gp120* | QVQLVQSGAEVKKPGASVKVSCQASGYRFSNFVIHWVRQAPGQRFEWMGWINPYNGNKEFSAKFQDRVTFTADTSANTAYMELRSLRSADTAVYYCARVGPYSWDDSPQDNYYMDVWGKGTTVIVSS | Barbas 1993 (42)Saphire 2001 (86) |
| 4461,*Anti-WTA(α)* | QVQLVQSGAEVRKPGASVKVSCKASGYSFTDYYMHWVRQAPGQGLEWMGWINPKSGGTNYAQRFQGRVTMTGDTSISAAYMDLASLTSDDTAVYYCVKDCGSGGLRDFWGQGTTVTVSS | WO/2014/193722 A1 |
| 4497,*Anti-WTA(β)* | EVQLVESGGGLVQPGGSLRLSCSASGFSFNSFWMHWVRQVPGKGLVWISFTNNEGTTTAYADSVRGRFIISRDNAKNTLYLEMNNLRGEDTAVYYCARGDGGLDDWGQGTLVTVSS.  | WO/2014/193722 A1Lehar 2015 (38)Fong 2018 (39) |
| CR5132 | EVLESGGGLVQPGGSLRLSCSDSGFSFNNYWMTWVRQAPGKGLEWVANINRDGSDKYHVDSVEGRFTISRDNSKNSLYLQMNNLRADDAA VYFCARGGRTTSWYWRNWGQGTLVTVSS | US 2012/0141493 A1 |
| F598,*Anti-PNAG* | QVQLQESGPGLVKPSETLSLTCTVSGGSISGYYWSWIRQPPGKGLEWIGYIHYSRSTNSNPALKSRVTISSDTSKNQLSLRLSSVTAADTAVYYCARDTYYYDSGDYEDAFDIWGQGTMVTVSS | US/2006/0115486 A1 Seq25Kelly-Quintos 2006 (73)Soliman 2018 (21) |
| rF1,*Anti-GlcNac pan-SDR* | EVQLVESGGGLVQPGGSLRLSCAASGFTLSRFAMSWVRQAPGRGLEWVASINSGNNPYYARSVQYRFTVSRDVSQNTVSLQMNNLRAEDSATYFCAKDHPSSGWPTFDSWGPGTLVTVSS | WO/2016/090040 Seq13Hazenbos 2013 (40) |
| T1-2,*Anti-ClfA* | QVQLKESGPGLVAPSQSLSITCAISGFSLSRYSVHWVRQPPGKGLEWLGMIWGGGNTDYNSALKSRLSISKDNSKSQVFLKMNSLQTDDTAMYYCARKGEFYYGYDGFVYWGQGTLVTVSA | WO 02072600 A2 |
| A120,*Anti-LTA* | EVMLVESGGGLVQPKGSLKLSCAASGFTFNTYAMNWVRQAPGKGLEWVARIRSKSNNYATYYADSVKDRFTISRDDSQSMLYLQMNNLKTEDTAMYYCVRRGGKETDYAM DYWGQGTSVT VSS | WO 03/059259 |
| 10919*Anti-SpA* | EVQLVQSGAEVKKPGASVKVSCKASGYTFTSYYMHWVRQAPGQGLEWMGIINPRVGSTSYAQKFQGRVTMTRDTSTSTVYMELSSLRSEDTAVYYCARGRPLSGTGGHHYFDYWGQGTLVTVSS | US2018/0105584 |
| **VL variable light chain** |
| G2a2,*Anti-DNP* | DIRMTQTTSSLSASLGDRVTISCRASQDISNYLNWYQQKPDGTVKLLIYYTSRLHSGVPSRFSGSGSGTDYSLTISNLEQEDIATYFCQQGNTLPWTFGGGTKLEIK | Gonzalez 2003 (41) |
| B12,*Anti-gp120* | EIVLTQSPGTLSLSPGERATFSCRSSHSIRSRRVAWYQHKPGQAPRLVIHGVSNRASGISDRFSGSGSGTDFTLTITRVEPEDFALYYCQVYGASSYTFGQGTKLERK | Barbas 1993 (42)Saphire 2001 (86) |
| 4461,*Anti-WTA(α)* | DIQMTQSPDSLAVSLGERATINCKSSQSVLSRANNNYYVAWYQHKPGQPPKLLIYWASTREFGVPDRFSGSGSGTDFTLTINSLQAEDVAVYYCQQYYTSRRTFGQGTKVEIK  | WO/2014/193722 A1 |
| 4497,*Anti-WTA(β)* | DIQLTQSPDSLAVSLGERATINCKSSQSIFRTSRNKNLLNWYQQRPGQPPRLLIHWASTRKSGVPDRFSGSGFGTDFTLTITSLQAEDVAIYYCQQYFSPPYTFGQGTKLEIK | WO/2014/193722 A1Lehar 2015 (38)Fong 2018 (39) |
| CR5132 | STDIQMTQSPSTLSASVGDRVTITCRASQSISSWLAWYQQKPGKAPKLLIYKASSLESGVPSRFSGSGSGTEFTLTISSLQPDDFATYYC QQYNSYPLTFGGGTKLEIK | US 2012/0141493 A1 |
| F598,*Anti-PNAG* | QLVLTQSPSASASLGASVKLTCTLSSGHSNYAIAWHQQQPGKGPRYLMKVNRDGSHIRGDGIPDRFSGSTSGAERYLTISSLQSEDEADYYCQTWGAGIRVFGGGTKLTVLG | US/2006/0115486 A1 Seq 26Kelly-Quintos 2006 (73)Soliman 2018 (21) |
| rF1,*Anti-GlcNac pan-SDR* | DIQLTQSPSALPASVGDRVSITCRASENVGDWLAWYRQKPGKAPNLLIYKTSILESGVPSRFSGSGSGTEFTLTISSLQPDDFATYYCQHYMRFPYTFGQGTKVEIK | WO/2016/090040\_Seq14Hazenbos 2013 (40) |
| T1-2,*Anti-ClfA* | NIMMTQSPSSLAVSAGEKVTMSCKSSQSVLYSSNQKNYLAWYQQKPGQSPKLLIYWASTRESGVPDRFTGSGSGTDFTLTISSVQAEDLAVYYCHQYLSSYTFGGGTKLEIK | WO 02072600 A2 |
| A120,*Anti-LTA* | DIVLSQSPAILSASPGEKVTMTCRASSSVSYMHWYQQKPGSSPKPWIYATSNLASGVPARFSGSGSGTSYSLTISRVEAEDAATYYCQQWSSNPPTFGGGTKLEIK | WO 03/059259 |
| 10919*Anti-SpA* | EIVLTQSPATLSVSPGERATLSCQASQDISNYLNWYQQKPGQAPRLLIYDASNLETGIPARFSGSGSGTEFTLTISSLQSEDFAVYYCQQVYALPPWTFGGGTKVEIK | US2018/0105584 |
| **HC constant regions** |
| IgG1 | ASTKGPSVFPLAPSSKSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQSSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKKVEPKSCDKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYNSTYRVVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPPSREEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPPVLDSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQKSLSLSPGK | Kabat 1991 (87) |
| IgG3 | ASTKGPSVFPLAPCSRSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQSSGLYSLSSVVTVPSSSLGTQTYTCNVNHKPSNTKVDKRVELKTPLGDTTHTCPRCPEPKSCDTPPPCPRCPEPKSCDTPPPCPRCPEPKSCDTPPPCPRCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVDVSHEDPEVQFKWYVDGVEVHNAKTKPREEQYNSTFRVVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKTKGQPREPQVYTLPPSREEMTKNQVSLTCLVKGFYPSDIAVEWESSGQPENNYNTTPPMLDSDGSFFLYSKLTVDKSRWQQGNIFSCSVMHEALHNRFTQKSLSLSPGK | Derived from pFuse vector (Invivogen) |
| **LC constant regions** |
| Kappa class | RTVAAPSVFIFPPSDEQLKSGTASVVCLLNNFYPREAKVQWKVDNALQSGNSQESVTEQDSKDSTYSLSSTLTLSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC | Kabat 1991 (87) |