

## PATENTS

# Antibody engineering

Recent patents related to methods of identifying protein modulators and treating influenza A virus.

Patent number	Description	Assignee	Inventor	Date
US 10,494,442	Methods and compositions for inhibiting atherosclerotic plaque formation in a subject via a proprotein convertase subtilisin/kexin type 9 (PCSK9) inhibitor. In certain embodiments, the PCSK9 inhibitor is an anti-PCSK9 antibody or antigen-binding protein.	Sanofi Biotechnology (Paris), Regeneron Pharmaceuticals (Tarrytown, NY, USA)	Sasiela WJ, Gusarova V, Peyman A, Schafer HL, Schwahn U	12/3/2019
US 10,494,438	Methods for identifying protein modulators (e.g., antibody agonists) of eukaryotic cells, typically involving expressing a combinatorial agent library (e.g., via lentiviral vectors) inside a eukaryotic cell type (e.g., a mammalian cell) and then directly selecting for agents (e.g., antibodies) that are agonists of a target molecule (e.g., a signaling receptor) that modulates a phenotype of or elicits a cellular response in the cell.	The Scripps Research Institute (La Jolla, CA, USA)	Zhang H, Wilson IA, Lerner RA	12/3/2019
US 10,494,419	Antibodies and binding fragments thereof that are capable of binding to influenza A virus hemagglutinin and neutralizing at least one group 1 subtype and at least one group 2 subtype of influenza A virus. In one embodiment, an antibody or binding fragment according to the invention is capable of binding to and/or neutralizing one or more influenza A virus group 1 subtypes selected from H1, H2, H5, H6, H8, H9, H11, H12, H13, H16 and H17 and variants thereof and one or more influenza A virus group 2 subtype selected from H3, H4, H7, H1, O, H14 and H15 and variants thereof.	MedImmune (Gaithersburg, MD, USA), Humabs BioMed (Bellinzona, Switzerland)	Benjamin E, Kallewaard-LeLay N, McAuliffe JM, Palmer-Hill F, Wachter L, Yuan A, Zhu Q, Corti D, Lanzavecchia A, Guarino B, DeMarco A	12/3/2019
US 10,493,149	Stable formulations comprising an anti-oncostatin M receptor (OSMR) antibody and having a pH ranging from ~6.0-7.6, wherein less than ~5% of the anti-OSMR antibody exists as high molecular weight species in the formulation.	Kiniksa Pharmaceuticals (Hamilton, Bermuda)	Manning MC, Shahrokh Z, Nichols D, Levesque PM, Holcomb RE	12/3/2019
US 10,487,156	Multispecific antibodies, e.g., bispecific antibodies, and methods for the isolation or purification of the same, comprising first and second heavy chain-light chain pairings wherein each pairing comprises a distinct selective recognition site including one or more amino acid residues contributed from the heavy chain and the light chain of the pairing. The first and second selective recognition sites differ by at least one amino acid residue and can be differentially bound by first and second selective recognition agents according to the methods of the invention. Such methods facilitate the production of antibody preparations enriched for multispecific antibodies having the correct functional heavy chain-light chain pairings.	argenx (Zwunaarde, Belgium)	Blanchetot CFJ, De Haard JJW	11/26/2019
US 10,487,153	Isolated or purified antibodies or fragments thereof specific for carbohydrate anhydrase IX (CA-IX) and their use as therapeutic tools. Specifically, high-affinity CA-IX-specific antibodies and fragments thereof and their use as antibody-drug conjugates. Compositions for use in therapy and therapeutic methods are also described.	National Research Council of Canada (Ottawa)	Lenferink AEG, O'Connor MD, Marcil A, Durocher Y	11/26/2019
US 10,487,150	SIRPabodies, comprising an immunoglobulin variable region, which may specifically bind a tumor antigen, viral antigen, etc., fused to a sequence comprising a binding domain of signal regulatory protein- $\alpha$ (SIRP $\alpha$ ). The binding domain of SIRP $\alpha$ comprises at least the N-terminal immunoglobulin-like domain of SIRP $\alpha$ , and may further comprise additional SIRP $\alpha$ sequences. The SIRPabodies find use in therapeutic methods that benefit from the combined activity of blocking CD47 activity and antibody targeting, e.g., in the treatment of cancer, etc.	The Board of Trustees of Stanford University (Stanford, CA, USA)	Majeti R, Griffin EP	11/26/2019

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