

Christos Kyratsous

Vice President - Research
Infectious Diseases and Viral Vector Technologies
Regeneron Pharmaceuticals, Inc.
777 Old Saw Mill River Road
Tarrytown, NY 10591-6707

email: christos.kyratsous@regeneron.com
Telephone: 914-847-5353

Education

March 2009	Doctor of Philosophy (Distinction) Columbia University, College of Physicians and Surgeons Department of Microbiology, New York, NY
February 2008	Master of Philosophy Columbia University, College of Physicians and Surgeons Department of Microbiology, New York, NY
October 2005	Master of Arts Columbia University, College of Physicians and Surgeons Department of Microbiology, New York, NY
July 2004	Bachelor of Science Aristotle University, School of Health Sciences Department of Pharmacy, Thessaloniki, Greece

Experience

2019-today	Vice President Research Infectious Diseases and Viral Vector Technologies Regeneron Pharmaceuticals, Inc.
2018	Senior Director Infectious Diseases and Viral Vector Technologies Regeneron Pharmaceuticals, Inc.
2016-2017	Associate Director Infectious Diseases and Viral Vector Technologies Regeneron Pharmaceuticals, Inc.
2015	Senior Staff Scientist Infectious Diseases Regeneron Pharmaceuticals, Inc.
2013-2014	Staff Scientist Infectious Diseases Regeneron Pharmaceuticals, Inc.
2011-2012	Scientist Infectious Diseases Regeneron Pharmaceuticals, Inc.
2009-2011	Research Associate Howard Hughes Medical Institute New York University Cancer Institute Laboratory of Dr Michele Pagano
2005-2009	Predoctoral research fellow Columbia University, College of Physicians and Surgeons Laboratory of Dr Saul Silverstein, Professor, Department of Microbiology

- Thesis title: The role of chaperone and co-chaperone proteins in alphaherpesvirus replication.
- 2005 Rotation student
Columbia University, College of Physicians and Surgeons
Laboratory of Dr Saul Silverstein, Professor, Department of Microbiology
- 2004 Rotation student
Columbia University, College of Physicians and Surgeons
Laboratory of Dr Aaron Mitchell, Professor, Department of Microbiology
- 2001-2004 Undergraduate research assistant
Aristotle University, School of Health Sciences, Department of Pharmacy
Laboratory of Dr Christos Panagiotidis, Associate Professor of Cell and Molecular Biology

Publications

1. Copin R, Baum A, Wloga E, Pascal KE, Giordano S, Fulton BO, Zhou A, Negron N, Lanza K, Chan N, Coppola A, Chiu J, Ni M, Atwal GS, Hernandez AR, Saotome K, Zhou Y, Franklin MC, Hooper AT, McCarthy S, Hamon S, Hamilton JD, Staples HM, Alfson K, Carrion R, Ali S, Norton T, Somersan-Karakaya S, Sivapalasingam S, Herman GA, Weinreich DM, Lipsich L, Stahl N, Murphy AJ, Yancopoulos GD, **Kyratsous CA**. 2021. The monoclonal antibody combination REGEN-COV protects against SARS-CoV-2 mutational escape in preclinical and human studies. Cell (in press)
2. Weinreich DM, Sivapalasingam S, Norton T, Ali S, Gao H, Bhore R, Hooper AT, Hamilton JD, Musser BJ, Soo Y, Rofail D, Im J, Perry C, Pan C, Hosain R, Mahmood A, Davis JD, Turner KC, Baum A, **Kyratsous CA**, Kim Y, Cook A, Kampman W, Graber X, Acloque G, Sachdeva Y, Bocchini JA, Kohli A, Kowal B, DiCioccio T, Stahl N, Lipsich L, Braunstein N, Herman G, Yancopoulos GD. 2021. REGEN-COV Antibody Cocktail in Outpatients with Covid-19. Medrxiv 2021.06.09.21257915.
3. Weinreich DM, Sivapalasingam S, Norton T, Ali S, Gao H, Bhore R, Xiao J, Hooper AT, Hamilton JD, Musser BJ, Rofail D, Hussein M, Im J, Atmodjo DY, Perry C, Pan C, Mahmood A, Hosain R, Davis JD, Turner KC, Baum A, **Kyratsous CA**, Kim Y, Cook A, Kampman W, Roque-Guerrero L, Acloque G, Aazami H, Cannon K, Simón-Campos JA, Bocchini JA, Kowal B, DiCioccio T, Soo Y, Stahl N, Lipsich L, Braunstein N, Herman G, Yancopoulos GD. 2021. REGEN-COV Antibody Cocktail Clinical Outcomes Study in Covid-19 Outpatients. Medrxiv 2021.05.19.21257469.
4. O'Brien MP, Forleo-Neto E, Sarkar N, Isa F, Hou P, Chan K-C, Musser BJ, Bar KJ, Barnabas RV, Barouch DH, Cohen MS, Hurt CB, Burwen DR, Marovich MA, Heirman I, Davis JD, Turner KC, Ramesh D, Mahmood A, Hooper AT, Hamilton JD, Kim Y, Purcell LA, Baum A, **Kyratsous CA**, Krainson J, Perez-Perez R, Mohseni R, Kowal B, DiCioccio AT, Stahl N, Lipsich L, Braunstein N, Herman G, Yancopoulos GD, Weinreich DM,

- Team C-19 P 3 PT. n.d. Subcutaneous REGEN-COV Antibody Combination in Early SARS-CoV-2 Infection Medrxiv 2021.06.14.21258569.
5. Vandergaast R, Carey T, Reiter S, Lathrum C, Lech P, Gnanadurai C, Haselton M, Buehler J, Narjari R, Schnebeck L, Roesler A, Sevola K, Suksanpaisan L, Bexon A, Naik S, Brunton B, Weaver SC, Rafael G, Tran S, Baum A, **Kyratsous CA**, Peng KW, Russell SJ. 2021. IMMUNO-COV v2.0: Development and Validation of a High-Throughput Clinical Assay for Measuring SARS-CoV-2-Neutralizing Antibody Titers. *Mosphere* 6:e00170-21.
 6. Sahin U, Muik A, Vogler I, Derhovanessian E, Kranz LM, Vormehr M, Quandt J, Bidmon N, Ulges A, Baum A, Pascal KE, Maurus D, Brachtendorf S, Lörks V, Sikorski J, Koch P, Hilker R, Becker D, Eller A-K, Grützner J, Tonigold M, Boesler C, Rosenbaum C, Heesen L, Kühnle M-C, Poran A, Dong JZ, Luxemburger U, Kemmer-Brück A, Langer D, Bexon M, Bolte S, Palanche T, Schultz A, Baumann S, Mahiny AJ, Boros G, Reinholz J, Szabó GT, Karikó K, Shi P-Y, Fontes-Garfias C, Perez JL, Cutler M, Cooper D, **Kyratsous CA**, Dormitzer PR, Jansen KU, Türeci Ö. 2021. BNT162b2 vaccine induces neutralizing antibodies and poly-specific T cells in humans. *Nature* 1–10.
 7. Jin DK, Nesbitt DJ, Yang J, Chen H, Horowitz J, Jones M, Vandergaast R, Carey T, Reiter S, Russell SJ, **Kyratsous C**, Hooper A, Hamilton J, Ferreira M, Deng S, Straus D, Baras A, Hillyer CD, Luchsinger LL. 2021. Seroprevalence of anti-SARS-CoV-2 antibodies in a cohort of New York City metro blood donors using multiple SARS-CoV-2 serological assays: Implications for controlling the epidemic and “Reopening.” *Plos One* 16:e0250319.
 8. Baum A, **Kyratsous CA**. 2021. SARS-CoV-2 spike therapeutic antibodies in the age of variants. *J Exp Med* 218:e20210198.
 9. Wang P, Nair MS, Liu L, Iketani S, Luo Y, Guo Y, Wang M, Yu J, Zhang B, Kwong PD, Graham BS, Mascola JR, Chang JY, Yin MT, Sobieszczyk M, **Kyratsous CA**, Shapiro L, Sheng Z, Huang Y, Ho DD. 2021. Antibody Resistance of SARS-CoV-2 Variants B.1.351 and B.1.1.7. *Nature* 1–9.
 10. McAleavy M, Zhang Q, Xu J, Pan L, Wakai M, Ehmann PJ, Wipperfman MF, Shavlakadze T, Hamon SC, Boyapati A, Morton LG, **Kyratsous CA**, Glass DJ. 2021. Activin A correlates with the worst outcomes in COVID-19 patients, and can be induced by cytokines via the IKK/NF-kappa B pathway. *bioRxiv : the preprint server for biology* <https://doi.org/10.1101/2021.02.04.429815>.
 11. Sivapalasingam S, Saviolakis GA, Kulcsar K, Nakamura A, Conrad T, Hassanein M, Sumner G, Elango C, Kamal MA, Eng S, **Kyratsous CA**, Musser BJ, Frieman M, Kantrowitz J, Weinreich DM, Yancopoulos G, Stahl N, Lipsich L. 2021. Human Monoclonal Antibody Cocktail for the

- Treatment or Prophylaxis of Middle Eastern Respiratory Syndrome Coronavirus (MERS-CoV). *J Infect Dis* jia036-
12. Singh DK, Singh B, Ganatra SR, Gazi M, Cole J, Thippeshappa R, Alfson KJ, Clemmons E, González O, Escobedo R, Lee T-H, Chatterjee A, Goez-Gazi Y, Sharan R, Gough M, Alvarez C, Blakley A, Ferdin J, Bartley C, Staples H, Parodi L, Callery J, Mannino A, Klaffke B, Escareno P, Platt RN, Hodara V, Scordo J, Gautam S, Vilanova AG, Olmo-Fontanez A, Schami A, Oyejide A, Ajithdoss DK, Copin R, Baum A, **Kyratsous C**, Alvarez X, Ahmed M, Rosa B, Goodroe A, Dutton J, Hall-Ursone S, Frost PA, Voges AK, Ross CN, Sayers K, Chen C, Hallam C, Khader SA, Mitreva M, Anderson TJC, Martinez-Sobrido L, Patterson JL, Turner J, Torrelles JB, Dick EJ, Brasky K, Schlesinger LS, Giavedoni LD, Carrion R, Kaushal D. 2021. Responses to acute infection with SARS-CoV-2 in the lungs of rhesus macaques, baboons and marmosets. *Nature microbiology* 6:73–86.
 13. Weinreich DM, Sivapalasingam S, Norton T, Ali S, Gao H, Bhore R, Musser BJ, Soo Y, Rofail D, Im J, Perry C, Pan C, Hosain R, Mahmood A, Davis JD, Turner KC, Hooper AT, Hamilton JD, Baum A, **Kyratsous CA**, Kim Y, Cook A, Kampman W, Kohli A, Sachdeva Y, Graber X, Kowal B, DiCioccio T, Stahl N, Lipsich L, Braunstein N, Herman G, Yancopoulos GD, Investigators T. 2021. REGN-COV2, a Neutralizing Antibody Cocktail, in Outpatients with Covid-19. *The New England journal of medicine* 384:238–251.
 14. Baum A, Ajithdoss D, Copin R, Zhou A, Lanza K, Negrón N, Ni M, Wei Y, Mohammadi K, Musser B, Atwal GS, Oyejide A, Goez-Gazi Y, Dutton J, Clemmons E, Staples HM, Bartley C, Klaffke B, Alfson K, Gazi M, Gonzalez O, Dick E, Carrion R, Pessaint L, Porto M, Cook A, Brown R, Ali V, Greenhouse J, Taylor T, Andersen H, Lewis MG, Stahl N, Murphy AJ, Yancopoulos GD, **Kyratsous CA**. 2020. REGN-COV2 antibodies prevent and treat SARS-CoV-2 infection in rhesus macaques and hamsters. *Science* 370:1110–1115.
 15. Sahin U, Muik A, Derhovanessian E, Vogler I, Kranz LM, Vormehr M, Baum A, Pascal K, Quandt J, Maurus D, Brachtendorf S, Lörks V, Sikorski J, Hilker R, Becker D, Eller A-K, Grützner J, Boesler C, Rosenbaum C, Kühnle M-C, Luxemburger U, Kemmer-Brück A, Langer D, Bexon M, Bolte S, Karikó K, Palanche T, Fischer B, Schultz A, Shi P-Y, Fontes-Garfias C, Perez JL, Swanson KA, Loschko J, Scully IL, Cutler M, Kalina W, **Kyratsous CA**, Cooper D, Dormitzer PR, Jansen KU, Türeci Ö. 2020. COVID-19 vaccine BNT162b1 elicits human antibody and TH1 T cell responses. *Nature* 586:594–599.
 16. Yurkovetskiy L, Wang X, Pascal KE, Tomkins-Tinch C, Nyalile TP, Wang Y, Baum A, Diehl WE, Dauphin A, Carbone C, Veinotte K, Egri SB, Schaffner SF, Lemieux JE, Munro JB, Rafique A, Barve A, Sabeti PC, **Kyratsous CA**, Dudkina NV, Shen K, Luban J. 2020. Structural and

- Functional Analysis of the D614G SARS-CoV-2 Spike Protein Variant. *Cell* 183:739-751.e8.
17. Simões EAF, Forleo-Neto E, Geba GP, Kamal M, Yang F, Cicirello H, Houghton MR, Rideman R, Zhao Q, Benveniste SL, Hawes A, Fuller ED, Wloga E, Pizarro JMN, Munoz FM, Rush SA, McLellan JS, Lipsich L, Stahl N, Yancopoulos GD, Weinreich DM, **Kyratsous CA**, Sivapalasingam S. 2020. Suptavumab for the Prevention of Medically Attended Respiratory Syncytial Virus Infection in Preterm Infants. *Clin Infect Dis* ciaa951-.
 18. Hansen J, Baum A, Pascal KE, Russo V, Giordano S, Wloga E, Fulton BO, Yan Y, Koon K, Patel K, Chung KM, Hermann A, Ullman E, Cruz J, Rafique A, Huang T, Fairhurst J, Libertiny C, Malbec M, Lee W, Welsh R, Farr G, Pennington S, Deshpande D, Cheng J, Watty A, Bouffard P, Babb R, Levenkova N, Chen C, Zhang B, Hernandez AR, Saotome K, Zhou Y, Franklin M, Sivapalasingam S, Lye DC, Weston S, Logue J, Haupt R, Frieman M, Chen G, Olson W, Murphy AJ, Stahl N, Yancopoulos GD, **Kyratsous CA**. 2020. Studies in humanized mice and convalescent humans yield a SARS-CoV-2 antibody cocktail. *Science* 369:1010–1014.
 19. Baum A, Fulton BO, Wloga E, Copin R, Pascal KE, Russo V, Giordano S, Lanza K, Negron N, Ni M, Wei Y, Atwal GS, Murphy AJ, Stahl N, Yancopoulos GD, **Kyratsous CA**. 2020. Antibody cocktail to SARS-CoV-2 spike protein prevents rapid mutational escape seen with individual antibodies. *Science* 369:1014–1018.
 20. Vandergaast R, Carey T, Reiter S, Lech P, Gnanadurai C, Tesfay M, Buehler J, Suksanpaisan L, Naik S, Brunton B, Recker J, Haselton M, Ziegler C, Roesler A, Mills JR, Theel E, Weaver SC, Rafael G, Roforth MM, Jerde C, Tran S, Diaz RM, Bexon A, Baum A, **Kyratsous CA**, Peng K-W, Russell SJ. 2020. Development and validation of IMMUNO-COVTM: a high-throughput clinical assay for detecting antibodies that neutralize SARS-CoV-2. *bioRxiv : the preprint server for biology* 130:1545.
 21. Baik AD, Calafati PT, Aaron NA, Mehra A, Moller-Tank S, Miloscio L, Wang L, Praggastis M, Birnbaum MS, Pan C, Brydges S, Mujica A, Barbounis P, Gale NW, Li N, **Kyratsous CA**, Schoenherr CJ, Murphy AJ, Economides AN, Cygnar KD. 2020. Targeted delivery of acid alpha-glucosidase corrects skeletal muscle phenotypes in Pompe disease mice. *bioRxiv : the preprint server for biology* <https://doi.org/10.1101/2020.04.22.051672>.
 22. Cruz JW, Damko E, Modi B, Tu N, Meagher K, Voronina V, Gartner H, Ehrlich G, Rafique A, Babb R, Aneja P, Potocky TB, Orvilliers AD, Coppi A, E SY, Qiu H, Williams CM, Bennett BL, Chen G, Macdonald L, Olson W, Lin JC, Stahl N, Murphy AJ, **Kyratsous CA**, Prasad BC. 2019. A novel bispecific antibody platform to direct complement activity for efficient lysis of target cells. *Scientific reports* 9:12031–16.
 23. Pascal KE, Dudgeon D, Trefry JC, Anantpadma M, Sakurai Y, Murin CD, Turner HL, Fairhurst J, Torres M, Rafique A, Yan Y, Badithe A, Yu K,

- Potocky T, Bixler SL, Chance TB, Pratt WD, Rossi FD, Shamblin JD, Wollen SE, Zelko JM, Carrion R, Worwa G, Staples HM, Burakov D, Babb R, Chen G, Martin J, Huang TT, Erlandson K, Willis MS, Armstrong K, Dreier TM, Ward AB, Davey RA, Pitt MLM, Lipsich L, Mason P, Olson W, Stahl N, **Kyratsous CA**. 2018. Development of Clinical-Stage Human Monoclonal Antibodies That Treat Advanced Ebola Virus Disease in Nonhuman Primates. *The Journal of infectious diseases* 218:S612–S626.
24. Saphire EO, Schendel SL, Fusco ML, Gangavarapu K, Gunn BM, Wec AZ, Halfmann PJ, Brannan JM, Herbert AS, Qiu X, Wagh K, He S, Giorgi EE, Theiler J, Pommert KBJ, Krause TB, Turner HL, Murin CD, Pallesen J, Davidson E, Ahmed R, Aman MJ, Bukreyev A, Burton DR, Crowe JE, Davis CW, Georgiou G, Krammer F, **Kyratsous CA**, Lai JR, Nykiforuk C, Pauly MH, Rijal P, Takada A, Townsend AR, Volchkov V, Walker LM, Wang C-I, Zeitlin L, Doranz BJ, Ward AB, Korber B, Kobinger GP, Andersen KG, Kawaoka Y, Alter G, Chandran K, Dye JM, Consortium VHFI. 2018. Systematic Analysis of Monoclonal Antibodies against Ebola Virus GP Defines Features that Contribute to Protection. *Cell* 174:938-952.e13.
25. Wit E de, Feldmann F, Okumura A, Horne E, Haddock E, Saturday G, Scott D, Erlandson KJ, Stahl N, Lipsich L, **Kyratsous CA**, Feldmann H. 2018. Prophylactic and therapeutic efficacy of mAb treatment against MERS-CoV in common marmosets. *Antiviral research* 156:64–71.
26. Wiehe K, Nicely NI, Lockwood B, Kuraoka M, Anasti K, Arora S, Bowman CM, Stolarchuk C, Parks R, Lloyd KE, Xia S-M, Duffy R, Shen X, **Kyratsous CA**, Macdonald LE, Murphy AJ, Searce RM, Moody MA, Alam SM, Verkoczy L, Tomaras GD, Kelsoe G, Haynes BF. 2017. Immunodominance of Antibody Recognition of the HIV Envelope V2 Region in Ig-Humanized Mice. *Journal of immunology (Baltimore, Md : 1950)* 198:1047–1055.
27. Coleman CM, Sisk JM, Halasz G, Zhong J, Beck SE, Matthews KL, Venkataraman T, Rajagopalan S, **Kyratsous CA**, Frieman MB. 2017. CD8+ T Cells and Macrophages Regulate Pathogenesis in a Mouse Model of Middle East Respiratory Syndrome. *J Virol* 91:e01825-16.
28. Ramanathan A, Gusarova V, Stahl N, Gurnett-Bander A, **Kyratsous CA**. 2016. Alirocumab, a Therapeutic Human Antibody to PCSK9, Does Not Affect CD81 Levels or Hepatitis C Virus Entry and Replication into Hepatocytes. *PLoS ONE* 11:e0154498.
29. Pascal KE, Coleman CM, Mujica AO, Kamat V, Badithe A, Fairhurst J, Hunt C, Strein J, Berrebi A, Sisk JM, Matthews KL, Babb R, Chen G, Lai K-MV, Huang TT, Olson W, Yancopoulos GD, Stahl N, Frieman MB, **Kyratsous CA**. 2015. Pre- and postexposure efficacy of fully human antibodies against Spike protein in a novel humanized mouse model of MERS-CoV infection. *Proc Natl Acad Sci U S A* 112:8738–8743.

30. Xanthopoulos K, Lagoudaki R, Kontana A, **Kyratsous C**, Panagiotidis C, Grigoriadis N, Yiangou M, Sklaviadis T. 2013. Immunization with recombinant prion protein leads to partial protection in a murine model of TSEs through a novel mechanism. *PLoS ONE* 8:e59143.
31. Billiard F, Lobry C, Darrasse-Jèze G, Waite J, Liu X, Mouquet H, DaNave A, Tait M, Idoyaga J, Leboeuf M, **Kyratsous CA**, Burton J, Kalter J, Klinakis A, Zhang W, Thurston G, Merad M, Steinman RM, Murphy AJ, Yancopoulos GD, Aifantis I, Skokos D. 2012. Dll4-Notch signaling in Flt3-independent dendritic cell development and autoimmunity in mice. *The Journal of experimental medicine* 209:1011–1028.
32. Busino L, Millman SE, Scotto L, **Kyratsous CA**, Basrur V, O'Connor O, Hoffmann A, Elenitoba-Johnson KS, Pagano M. 2012. Fbxw7 α - and GSK3-mediated degradation of p100 is a pro-survival mechanism in multiple myeloma. *Nature cell biology* 14:375–385.
33. **Kyratsous CA**, Panagiotidis CA. 2012. Heat-shock protein fusion vectors for improved expression of soluble recombinant proteins in *Escherichia coli*. *Methods in molecular biology (Clifton, NJ)* 824:109–129.
34. Walters MS, **Kyratsous CA**, Silverstein SJ. 2010. The RING Finger Domain of Varicella-Zoster Virus ORF61p Has E3 Ubiquitin Ligase Activity That Is Essential for Efficient Autoubiquitination and Dispersion of Sp100-Containing Nuclear Bodies ∇ . *J Virol* 84:6861–6865.
35. **Kyratsous CA**, Walters MS, Panagiotidis CA, Silverstein SJ. 2009. Complementation of a Herpes Simplex Virus ICP0 Null Mutant by Varicella-Zoster Virus ORF61p ∇ . *J Virol* 83:10637–10643.
36. **Kyratsous CA**, Silverstein SJ, DeLong CR, Panagiotidis CA. 2009. Chaperone-fusion expression plasmid vectors for improved solubility of recombinant proteins in *Escherichia coli*. *Gene* 440:9–15.
37. **Kyratsous CA**, Silverstein SJ. 2009. Components of Nuclear Domain 10 Bodies Regulate Varicella-Zoster Virus Replication ∇ . *J Virol* 83:4262–4274.
38. **Kyratsous CA**, Silverstein SJ. 2008. The co-chaperone BAG3 regulates Herpes Simplex Virus replication. *Proc Natl Acad Sci U S A* 105:20912–20917.
39. Walters MS, **Kyratsous CA**, Wan S, Silverstein S. 2008. Nuclear Import of the Varicella-Zoster Virus Latency-Associated Protein ORF63 in Primary Neurons Requires Expression of the Lytic Protein ORF61 and Occurs in a Proteasome-Dependent Manner ∇ . *J Virol* 82:8673–8686.
40. **Kyratsous CA**, Silverstein SJ. 2007. BAG3, a Host Cochaperone, Facilitates Varicella-Zoster Virus Replication ∇ . *J Virol* 81:7491–7503.
41. Bruno VM, Kalachikov S, Subaran R, Nobile CJ, **Kyratsous C**, Mitchell AP. 2006. Control of the *C. albicans* cell wall damage response by transcriptional regulator Cas5. *PLoS pathogens* 2:e21.

Book Chapters

1. Livingston, C., Kyratsous, C.A., Weller, S. and Silverstein, S.J. Reorganization of Host Cell Chaperone Machinery by HSV and VZV. In Alpha Herpesviruses: Molecular and Cellular Biology, S. Weller ed., Horizon Press
2. Walters, M.S., Kyratsous, C.A., Stallings, C.L, Lungu, O. and Silverstein, S.J. What Doesn't Belong and Why; a Saga of Latency Associated Proteins Elaborated by Varicella Zoster Virus, in From the Hallowed Halls of Herpesvirology, J. Blaho and J. Baines eds

Selected Published US and International Patents

1. WO2021087296 – Composition and methods for treating sensorineural hearing loss using otoferlin dual vector systems
2. WO2021086899 – Anti-hemagglutinin antibodies and methods of use thereof
3. US10975139 – Anti-SARS-COV-2 spike glycoprotein antibodies and antigen-binding fragments
4. US10954289 – Anti-SARS-COV-2 spike glycoprotein antibodies and antigen-binding fragments
5. WO2021045836 – Anti-SARS-COV-2 spike glycoprotein antibodies and antigen-binding fragments
6. US20210024617 – Human antibodies to ebola virus glycoprotein
7. WO202052029 – Anti-PCRv antibodies that bind PCRv, compositions comprising anti-PCRv antibodies, and methods of use thereof
8. US20200392210 – Anti-PCRv antibodies that bind PCRv, compositions comprising anti-PCRv antibodies, and methods of use thereof
9. WO2020242984 – Modified viral particles and uses thereof
10. WO2020206162 – Methods and compositions for insertion of antibody coding sequences into a safe harbor locus
11. US20200318136 – Methods and compositions for insertion of antibody coding sequences into a safe harbor locus
12. US10787501 – Anti-SARS-COV-2 spike glycoprotein antibodies and antigen-binding fragments
13. US20200289628 – Compositions and methods for expressing Factor IX
14. 20200270617 – Composition and methods for transgene expression from an albumin locus
15. WO/2020/167919 – Compositions and methods for using bispecific antibodies to bind complement and a target antigen
16. WO/2020/163761 – Myosin 15 promoters and uses thereof
17. WO/2020/163743 – Compositions and methods for treating sensorineural hearing loss using otoferlin dual vector systems
18. 20200216860 – Delivery of a gene-editing system with a single retroviral particle and methods of generation and use
19. WO/2020/106814 – Anti-staphylococcus antibodies and uses thereof

20. WO/2019/006034 - Non-human animals comprising a humanized ASGR1 locus
21. WO/2019/006043 - Tropism-modified recombinant viral particles and used thereof for the targeted introduction of genetic material into human cells
- WO/2019/006046 – Tropism-modified recombinant viral particles and used thereof for the targeted introduction of genetic material into human cells
22. 20180355017 - Compositions and methods for internalizing enzymes
23. WO/2018/226861 – Compositions and methods for internalizing enzymes
24. 20180139940 – Humanized T cell mediated immune responses in non-human animals
25. WO/2018/017497 – Anti-Zika virus antibodies and methods of use
26. 20180016324 – Anti-Zika virus antibodies and methods of use
27. WO/2017/143062 – Non-human animals having a mutant kynurine gene
28. 20170355751 – Human antibodies to Ebola virus glycoprotein
29. 20170340728 – Human antibodies to middle east respiratory syndrome - coronavirus spike protein
30. 20170247436 – Non-human animals having a mutant kynurine gene
31. 20170112107 – Humanized dipeptidyl peptidase IV (DPP4) animals
32. WO/2016/164492 – Humanized T cell mediated immune responses in non-human animals
33. 20160215040 – Human antibodies to Ebola virus glycoprotein
34. 20160007579 – Humanized dipeptidyl peptidase IV (DPP4) animals
35. WO/2016/123019 – Human antibodies to Ebola virus glycoprotein
36. 20150351372 – Humanized dipeptidyl peptidase IV (DPP4) animals
37. 20150337029 – Human antibodies to middle east respiratory syndrome - coronavirus spike protein
38. WO/2015/184164 – Humanized dipeptidyl peptidase IV (DPP4) animals
39. WO/2015/179535 – Human antibodies to middle east respiratory syndrome - coronavirus spike protein
40. 20120156238 – Herpes virus backbone for viral vaccine and vaccine based thereon
41. WO/2011/016830 – Herpes virus backbone for viral vaccine and vaccine based thereon
42. WO/2009/014759 – Methods of inhibiting VZV replication and related compositions

Fellowships and awards

2021	Bodossaki Foundation – Distinguished Young Scientist Award
2021	NYIPLA – Inventor of the Year
2020	Fortune 40 under 40
2019	Business Insider's 30 under 40 in healthcare
2016	Research & Development Team of the Year Clinical & Research Excellence Awards Pharma Intelligence, Informa

2016 2016 Rising Stars – 40 under 40
Business Council of Westchester

2010-2013 Postdoctoral Fellowship Award
Department of Defense (DOD) Breast Cancer Research Program (BCRP)

2009 2009 Dean's Award for Excellence in Research
Columbia University, College of Physicians and Surgeons
Graduate School of Art and Sciences.

2009 Doctor of Philosophy with distinction
Columbia University, College of Physicians and Surgeons
Graduate School of Art and Sciences.

2004-2009 Predoctoral research fellowship
Columbia University, College of Physicians and Surgeons
Graduate School of Art and Sciences.

2008 Travel award
Manipulation of Nuclear Processes by DNA Viruses, American Society for
Microbiology, Charleston, SC

2007 Trainee travel honorarium (awarded for best presentation)
32nd Annual Herpesvirus Workshop, Asheville, NC