

CURRICULUM VITAE

Dr. Arturo Reyes-Sandoval
Associate Professor / Profesor Asociado
The Jenner Institute
Nuffield Department of Medicine
University of Oxford

Associate Professor at the University of Oxford since 2015. Principal investigator leading a group of scientist composed by 4 postdoctoral scientists, 2 PhD students and a project manager. 56 publications in international journals, H-index 22 and 2133 citations to his research work. 15 grants awarded for a total of £11 million pounds awarded by British Institutions and CONACyT. 8 patents and registrations, 6 as inventor.

Educational Qualifications:

<i>Degree</i>	<i>Award</i>	<i>Subject</i>	<i>University</i>	<i>Year</i>
PhD	Graduated with honours	Doctoral Thesis in Molecular Medicine	National Polytechnic Institute	2005
M.Sc. (Hons)	Graduated with honours	Cytopathology	National Polytechnic Institute	1995
University degree	Prize as best student. Finished 1 st of 150 students	Microbiology	National Polytechnic Institute	1993

Academic Positions Held:

<i>Institution</i>	<i>Position Held</i>	<i>Start Date</i>	<i>End Date</i>
University of Oxford	Associate Professor	26/03/2015	-
The Jenner Institute Nuffield Department of Clinical Medicine, University of Oxford	Wellcome Trust Career development Fellow (During this period I received the titles of University Research Lecturer (1 December 2012) and Associate Professor. (26 March 2015).	01/02/2012	01/02/2017
The Jenner Institute Nuffield Department of Clinical Medicine, University of Oxford	Senior Postdoctoral Research Scientist / NDM Research Fellow	01/01/2011	31/01/2012
	Junior Postdoctoral Research Scientist	24/09/2004	31/12/2010
The Wistar Institute Philadelphia	Pre-doctoral trainee	24/09/1999	24/09/2004

Recognition I: Prizes, honours and awards

- 2016 Nominated by the Mexican Ministry of Foreign Affairs and Mexican Embassy to the UK for the 2016 prize on Science and Technology. The most prestigious scientific award in Mexico.
- 2015 Awarded the title of Associate Professor in recognition of the distinction in my field and contributions to the research, teaching and administration of the Nuffield Department of Medicine, University of Oxford.

- 2014 University Recognition Scheme 'for an exceptional work organising a successful Brazil-Oxford Workshop on Infectious Diseases'.
- 2012 Conferred the title of 'University Research Lecturer'. 1 December 2012.
- 2012 Awarded a Wellcome Trust Intermediate Career Development Fellowship. 1 February 2012 to 31 January 2017.
- 2011 Awarded a 'Research Leadership Fellow' by the Nuffield Department of Medicine, University of Oxford. 1 January 2011 to 31 January 2012.
- 2010 Distinction by the Government of Mexico (National Council of Science and Technology, CONACyT, funding agency) as fellow of the "National System of Researchers, senior level II". In recognition of the scientific achievements. Membership in the system is prestigious, especially in Levels II, III and Emeritus which require demonstration of significant contributions in research as well as teaching and the promotion of research in Mexico. There are currently only 3,964 scientists as part of SNI level II. 1 January 2015 to 31 December 2019.
- 2010 Member of the advisory board of the major funding agency in Mexico: The National Council of Science and Technology (CONACyT).
- 2009 Distinction as a member of a scientific Mexican board for evaluating Mexican students applying for graduate programs at international universities. Started in October, 2009.
- 2008 Distinction "Orden Maestro Vicente Lombardo Toledano" by the municipal government of the city of Teziutlan, state of Puebla, Mexico. Awarded for scientific achievements. March 2008.
- 2008 Distinction by the Government of Mexico (National Council of Science and Technology, CONACyT) as fellow of the "National System of Researchers, junior level I". In recognition of the scientific achievements.
- 2008 NDM Merit Review. Merit award for performance. July 2008.
- 2005 Graduated with Honours. PhD in Molecular Medicine. IPN, Mexico.
- 1995 Graduated with Honours. MSc in Cytopathology. IPN, Mexico.
- 1993 Distinction as the best student in microbiology for obtaining the highest grades during university. Awarded by the president of Mexico, Carlos Salinas de Gortari.
- 1993 Distinction as the best student in microbiology by my university after obtaining the highest grades. Awarded by the Rector of the Instituto Politecnico Nacional.

Grant Funding

1. 2017 Innovate UK – "Phase Ib trial of a simple, multivalent vaccine to prevent Zika and Chikungunya." **Lead applicant.** Proposal 94851-557155. October 2017 – September 2020.
2. 2016 Innovate UK - "A phase I clinical trial of a Chikungunya vaccine using a single dose and no adjuvant." **Lead applicant.** TSB File Ref.: 972214. Application No. 71160-493130. October 2016 - March 2018.
3. 2016 Innovate UK - "Addressing Efficacy of a Dengue vaccine candidate in a macaque challenge model." **Lead applicant.** Collaborators: Dr. Carlos A. Sariol from the University of Puerto Rico and Cesar Lopez-Camacho (The Jenner Institute). TSB File Ref.: 972214. Application No. 71744-493192. October 2016 - September 2017.
4. 2016 Innovate UK - "Protective efficacy and neutralisation to select an optimal Zika virus vaccine." **Lead applicant.** Collaborators: Prof. Nicole Zitzmann (Oxford), Prof. Andy Pollard and Dr. Christine Rollier (Oxford), Dr. Stuart Dowall (PHE, Porton Down) and Prof. Martha E. Viveros-Sandoval (Mexico). TSB File Reference: 972216. Application No. 72284-493233. October 2016 - September 2017.
5. 2016 MRC UKVR&D - Design, development and GMP manufacture of a Zika vaccine. Co-applicant with Arvind Patel from MRC-University of Glasgow Centre for Virus Research. October 2016 - September 2019.
6. 2016 MRC-DPFS – A novel P. vivax pre-erythrocytic malaria vaccine for broad coverage: Progression to GMP manufacture of a clinical vaccine lot. MRC Reference: MR/N019008/1. **Lead applicant.** Co-applicant: Prof. Lucy Dorrell. August 2016 - January 2019.
7. 2016 CONACyT Mexico. Call of 'Frontiers of Science'. A comparative study on diseases caused by the endemic and emerging viral agents Dengue, Chikungunya and Zika. Co-applicant with Prof. Hector Vivanco-Cid from Universidad Veracruzana. Project No. 1192. Mex. 2016-2019 (with optional extension based on results). Proyecto: "Estudio comparativo de enfermedades causadas por agentes virales endémicos y emergentes: Dengue, Chikungunya y virus Zika", Número de proyecto: 1192. Financiado por: Fondo de Investigación en Fronteras de la Ciencia 2015-02, CONACyT. Monto del apoyo:
8. 2015 MRC-CiC – Development of a Chagas Vaccine using recombinant viral vectors. **Lead applicant.** Collaborators: John Kelly at LSHTM. October 2015 - August 2016.

9. 2015 MRC-CiC – Development of a dengue vaccine and assessment of vaccine efficacy in a mouse model. **Lead applicant.** Collaborator: Prof. Flavio Guimaraes from University of Minas Gerais in Brazil. October 2015 - August 2016.
10. 2015 MRC – CiC – Novel viral vectored multi-genotype vaccines for therapy of high-risk human papillomavirus infections. Co-applicant with Prof. Lucy Dorrell. October 2015 - August 2016.
11. 2015 Newton Fund – British Council. Institutional Links to establish a partnership with three major universities in Mexico and study immune responses against dengue virus. **Lead applicant.** March 2015 - March 2016.
12. 2015 Newton Fund – British Council. Researcher Links Travel Grant application. Start: 2015. End: 2016. **Lead applicant.**
13. 2015 CONACyT Mexico - Clinical evaluation of galectins and endocans as prognostic markers associated with protection or severity in dengue infection. Funds for research in health and social security. Call No. S0008-2015-2. Collaborator with Prof. Hector Vivanco-Cid from Universidad Veracruzana. Project number 261693.
14. Proyecto: “Evaluación clínica de Endocan y Galectinas humanas como biomarcadores pronósticos asociados a protección/severidad en la infección por virus Dengue”, Número de proyecto: 261693. Financiado por: El Fondo Sectorial de Investigación en Salud y Seguridad Social (SS IIMSS/ISSSTE CONACYT) Convocatoria S0008-2015-2. Monto del apoyo:
15. 2015 SEP-CONACyT Mexico - Evaluation of the role of innate lymphocytes in dengue virus infection. Collaborator with Prof. Hector Vivanco-Cid from Universidad Veracruzana. Project number: 256235. Proyecto: “Evaluación de la participación de Linfocitos Innatos en la infección por virus Dengue”, Número de proyecto: 256235. Financiado por: El Fondo de Investigación científica básica SEP-CONACYT 2015.
16. 2013 Major Overseas Program – Nuffield Department of Medicine – University of Oxford. **Lead applicant.** Travel Grant for Thailand.
17. 2013 Oxford Martin School for the XXI Century. Collaboration with various groups at the University of Oxford. Development vaccines against highly variable pathogens using bioinformatics tools. Co-applicant.
18. 2012 Wellcome Trust Career Development Fellowship. “Development of a novel vaccine against *Plasmodium vivax* malaria using recombinant adenovirus and MVA vectors.” Wellcome Trust Career Development Enhancement Award. “Prevention of malaria relapse and hypnozoite formation by viral-vectored vaccination: A paradigm shift for malaria eradication”. **Lead applicant.**
19. 2011 FP7 European Union 'IDAMS' – Collaboration with Prof. Adrian Hill and Prof. Cameron Simmons. October 2011. Development of a vaccine for dengue. Collaborator.
20. 2011 Nuffield Department of Clinical Medicine, Scientific Leadership Fellowship. January 2011. “*Plasmodium vivax* vaccine development.”

Publications

[1-56]

1. Slon-Campos, J.L., et al., *A protective Zika virus E-dimer-based subunit vaccine engineered to abrogate antibody-dependent enhancement of dengue infection.* Nat Immunol, 2019.
2. Reyes-Sandoval, A. and J.E. Ludert, *The Dual Role of the Antibody Response Against the Flavivirus Non-structural Protein 1 (NS1) in Protection and Immuno-Pathogenesis.* Front Immunol, 2019. 10: p. 1651.
3. Reyes-Sandoval, A., *51 years in of Chikungunya clinical vaccine development: A historical perspective.* Hum Vaccin Immunother, 2019: p. 1-8.
4. Milicic, A., et al., *Publisher Correction: Adjuvanting a viral vectored vaccine against pre-erythrocytic malaria.* Sci Rep, 2019. 9(1): p. 7060.
5. Lopez-Camacho, C., et al., *Assessment of Immunogenicity and Neutralisation Efficacy of Viral-Vectored Vaccines Against Chikungunya Virus.* Viruses, 2019. 11(4).
6. Kim, Y.C., et al., *Development of an E2 ELISA Methodology to Assess Chikungunya Seroprevalence in Patients from an Endemic Region of Mexico.* Viruses, 2019. 11(5).
7. Atcheson, E., K. Bauza, and A. Reyes-Sandoval, *A probabilistic model of pre-erythrocytic malaria vaccine combination in mice.* PLoS One, 2019. 14(1): p. e0209028.
8. Marin-Mogollon, C., et al., *Chimeric Plasmodium falciparum parasites expressing Plasmodium vivax circumsporozoite protein fail to produce salivary gland sporozoites.* Malar J, 2018. 17(1): p. 288.
9. Lopez-Camacho, C., et al., *Rational Zika vaccine design via the modulation of antigen membrane anchors in chimpanzee adenoviral vectors.* Nat Commun, 2018. 9(1): p. 2441.
10. Kim, Y.C., et al., *Optimization of Zika virus envelope protein production for ELISA and correlation of antibody titers with virus neutralization in Mexican patients from an arbovirus endemic region.* Virol J, 2018. 15(1): p. 193.
11. de Camargo, T.M., et al., *Prime-boost vaccination with recombinant protein and adenovirus-vector expressing Plasmodium vivax circumsporozoite protein (CSP) partially protects mice against Pb/Pv sporozoite challenge.* Sci Rep, 2018. 8(1): p. 1118.
12. Britto, C., et al., *Rapid travel to a Zika vaccine: are we heading towards success or more questions?* Expert Opin Biol Ther, 2018. 18(11): p. 1171-1179.

13. Atcheson, E., et al., *Tailoring a Plasmodium vivax Vaccine To Enhance Efficacy through a Combination of a CSP Virus-Like Particle and TRAP Viral Vectors*. *Infect Immun*, 2018. 86(9).
14. Salman, A.M., et al., *Rational development of a protective P. vivax vaccine evaluated with transgenic rodent parasite challenge models*. *Sci Rep*, 2017. 7: p. 46482.
15. Rodrigues-da-Silva, R.N., et al., *Plasmodium vivax Cell-Traversal Protein for Ookinetes and Sporozoites: Naturally Acquired Humoral Immune Response and B-Cell Epitope Mapping in Brazilian Amazon Inhabitants*. *Front Immunol*, 2017. 8: p. 77.
16. Milicic, A., et al., *Adjuvanting a viral vectored vaccine against pre-erythrocytic malaria*. *Sci Rep*, 2017. 7(1): p. 7284.
17. Lagunas-Rangel, F.A., M.E. Viveros-Sandoval, and A. Reyes-Sandoval, *Current trends in Zika vaccine development*. *J Virus Erad*, 2017. 3(3): p. 124-127.
18. Cardoso, A.R., et al., *Detecting circulating antibodies by controlled surface modification with specific target proteins: Application to malaria*. *Biosens Bioelectron*, 2017. 91: p. 833-841.
19. Cabral-Miranda, G., et al., *Virus-Like Particle (VLP) Plus Microcrystalline Tyrosine (MCT) Adjuvants Enhance Vaccine Efficacy Improving T and B Cell Immunogenicity and Protection against Plasmodium berghei/vivax*. *Vaccines (Basel)*, 2017. 5(2).
20. Cabral-Miranda, G., et al., *Microcrystalline Tyrosine (MCT((R)))*: A Depot Adjuvant in Licensed Allergy Immunotherapy Offers New Opportunities in Malaria. *Vaccines (Basel)*, 2017. 5(4).
21. Alves, E., et al., *Evaluation of Plasmodium vivax Cell-Traversal Protein for Ookinetes and Sporozoites as a Preerythrocytic P. vivax Vaccine*. *Clin Vaccine Immunol*, 2017. 24(4).
22. Rollier, C.S., A.V.S. Hill, and A. Reyes-Sandoval, *Influence of adenovirus and MVA vaccines on the breadth and hierarchy of T cell responses*. *Vaccine*, 2016. 34(38): p. 4470-4474.
23. Longley, R.J., et al., *Acquisition and Longevity of Antibodies to Plasmodium vivax Preerythrocytic Antigens in Western Thailand*. *Clin Vaccine Immunol*, 2016. 23(2): p. 117-24.
24. Daniels-Treffandier, H., et al., *Impact of Reducing Complement Inhibitor Binding on the Immunogenicity of Native Neisseria meningitidis Outer Membrane Vesicles*. *PLoS One*, 2016. 11(2): p. e0148840.
25. Clutton, G., et al., *Transient IL-10 receptor blockade can enhance CD8(+) T cell responses to a simian adenovirus-vectored HIV-1 conserved region immunogen*. *Hum Vaccin Immunother*, 2015. 11(4): p. 1030-5.
26. Bauza, K., et al., *Tailoring a Combination Preerythrocytic Malaria Vaccine*. *Infect Immun*, 2015. 84(3): p. 622-34.
27. Bauza, K., et al., *Efficacy of a Plasmodium vivax malaria vaccine using ChAd63 and modified vaccinia Ankara expressing thrombospondin-related anonymous protein as assessed with transgenic Plasmodium berghei parasites*. *Infect Immun*, 2014. 82(3): p. 1277-86.
28. White, A.D., et al., *Evaluation of the safety and immunogenicity of a candidate tuberculosis vaccine, MVA85A, delivered by aerosol to the lungs of macaques*. *Clin Vaccine Immunol*, 2013. 20(5): p. 663-72.
29. Warimwe, G.M., et al., *Immunogenicity and efficacy of a chimpanzee adenovirus-vectored Rift Valley fever vaccine in mice*. *Virology*, 2013. 10: p. 349.
30. Reyes-Sandoval, A. and M.F. Bachmann, *Plasmodium vivax malaria vaccines: why are we where we are?* *Hum Vaccin Immunother*, 2013. 9(12): p. 2558-65.
31. Ewer, K.J., et al., *Protective CD8+ T-cell immunity to human malaria induced by chimpanzee adenovirus-MVA immunisation*. *Nat Commun*, 2013. 4: p. 2836.
32. Reyes-Sandoval, A., et al., *Mixed vector immunization with recombinant adenovirus and MVA can improve vaccine efficacy while decreasing antivector immunity*. *Mol Ther*, 2012. 20(8): p. 1633-47.
33. O'Hara, G.A., et al., *Clinical assessment of a recombinant simian adenovirus ChAd63: a potent new vaccine vector*. *J Infect Dis*, 2012. 205(5): p. 772-81.
34. Milicic, A., et al., *Small cationic DDA:TDB liposomes as protein vaccine adjuvants obviate the need for TLR agonists in inducing cellular and humoral responses*. *PLoS One*, 2012. 7(3): p. e34255.
35. Knudsen, M.L., et al., *Superior induction of T cell responses to conserved HIV-1 regions by electroporated alphavirus replicon DNA compared to that with conventional plasmid DNA vaccine*. *J Virol*, 2012. 86(8): p. 4082-90.
36. Betts, G., et al., *Optimising immunogenicity with viral vectors: mixing MVA and HAdV-5 expressing the mycobacterial antigen Ag85A in a single injection*. *PLoS One*, 2012. 7(12): p. e50447.
37. Rollier, C.S., et al., *Viral vectors as vaccine platforms: deployment in sight*. *Curr Opin Immunol*, 2011. 23(3): p. 377-82.
38. Reyes-Sandoval, A., et al., *CD8+ T effector memory cells protect against liver-stage malaria*. *J Immunol*, 2011. 187(3): p. 1347-57.
39. Reyes-Sandoval, A., et al., *Prime-boost immunization with adenoviral and modified vaccinia virus Ankara vectors enhances the durability and polyfunctionality of protective malaria CD8+ T-cell responses*. *Infect Immun*, 2010. 78(1): p. 145-53.
40. Hill, A.V., et al., *Prime-boost vectored malaria vaccines: progress and prospects*. *Hum Vaccin*, 2010. 6(1): p. 78-83.
41. Capone, S., et al., *Immune responses against a liver-stage malaria antigen induced by simian adenoviral vector AdCh63 and MVA prime-boost immunisation in non-human primates*. *Vaccine*, 2010. 29(2): p. 256-65.
42. Reyes-Sandoval, A., et al., *Potency assays for novel T-cell-inducing vaccines against malaria*. *Curr Opin Mol Ther*, 2009. 11(1): p. 72-80.
43. Sridhar, S., et al., *Single-dose protection against Plasmodium berghei by a simian adenovirus vector using a human cytomegalovirus promoter containing intron A*. *J Virol*, 2008. 82(8): p. 3822-33.
44. Schmidt, N.W., et al., *Memory CD8 T cell responses exceeding a large but definable threshold provide long-term immunity to malaria*. *Proc Natl Acad Sci U S A*, 2008. 105(37): p. 14017-22.

45. Reyes-Sandoval, A., et al., *Single-dose immunogenicity and protective efficacy of simian adenoviral vectors against Plasmodium berghei*. Eur J Immunol, 2008. 38(3): p. 732-41.
46. Tatsis, N., et al., *Adenoviral vectors persist in vivo and maintain activated CD8+ T cells: implications for their use as vaccines*. Blood, 2007. 110(6): p. 1916-23.
47. Reyes-Sandoval, A., J.T. Harty, and S.M. Todryk, *Viral vector vaccines make memory T cells against malaria*. Immunology, 2007. 121(2): p. 158-65.
48. Souza, A.P., et al., *Recombinant viruses as vaccines against viral diseases*. Braz J Med Biol Res, 2005. 38(4): p. 509-22.
49. Lasaro, M.O., et al., *Anti-tumor DNA vaccines based on the expression of human papillomavirus-16 E6/E7 oncoproteins genetically fused with the glycoprotein D from herpes simplex virus-1*. Microbes Infect, 2005. 7(15): p. 1541-50.
50. Reyes-Sandoval, A., et al., *Human immunodeficiency virus type 1-specific immune responses in primates upon sequential immunization with adenoviral vaccine carriers of human and simian serotypes*. J Virol, 2004. 78(14): p. 7392-9.
51. Reyes-Sandoval, A. and H.C. Ertl, *CpG methylation of a plasmid vector results in extended transgene product expression by circumventing induction of immune responses*. Mol Ther, 2004. 9(2): p. 249-61.
52. Xiang, Z.Q., et al., *Oral vaccination of mice with adenoviral vectors is not impaired by preexisting immunity to the vaccine carrier*. J Virol, 2003. 77(20): p. 10780-9.
53. Pinto, A.R., A. Reyes-Sandoval, and H.C. Ertl, *Chemokines and TRANCE as genetic adjuvants for a DNA vaccine to rabies virus*. Cell Immunol, 2003. 224(2): p. 106-13.
54. Fitzgerald, J.C., et al., *A simian replication-defective adenoviral recombinant vaccine to HIV-1 gag*. J Immunol, 2003. 170(3): p. 1416-22.
55. Xiang, Z., et al., *Novel, chimpanzee serotype 68-based adenoviral vaccine carrier for induction of antibodies to a transgene product*. J Virol, 2002. 76(6): p. 2667-75.
56. Reyes-Sandoval, A. and H.C. Ertl, *DNA vaccines*. Curr Mol Med, 2001. 1(2): p. 217-43.

Chapters in books:

1. Reyes-Sandoval A. & Pinto A.R. Vacunas de DNA. En: TEMAS DE ACTUALIDAD EN MICROBIOLOGÍA, AMBIENTE Y SALUD. Rocha-Gracia, R. del C., Y. Martínez-Laguna y López-Olguín J.F. (Eds). 2002. Publicación Especial de la Benemérita Universidad Autónoma de Puebla. Puebla, México. pp. 327-342. ISBN: 968 863 647 0.
2. Larissa H. Haut, Aguinaldo R. Pinto y Arturo Reyes-Sandoval. Patogénesis del Virus de la Inmunodeficiencia Humana. In: "Mecanismos de patogenicidad e interacción parásito hospedero". Rocha-Gracia R. del C., M.L. Cedillo R. y J.F. López-Olguín (Eds). 2004. Publicación Especial de la Benemérita Universidad Autónoma de Puebla. Puebla, México. pp. ISBN: 968 863 815 3.

Patents and Inventions:

1. 2016 Zika vaccine. UK Patent Application No. 1613191.4. Applicant: Oxford University Innovation Limited. Date of filing: 29 July 2016. Inventors: Arturo Reyes-Sandoval and Cesar Lopez-Camacho.
2. 2016. Virus-like particles for use as anti-malaria vaccines. United Kingdom Patent Application No. 1608821.3. Isis Innovation Limited. Inventor: Arturo Reyes-Sandoval.
3. 2015. Dengue vaccines. Applicant: Isis Innovation Limited. Application No. PCT/GB2016/051358. Date of Filing: 11 May 2016. Short Title: Dengue Vaccines. Based on Application No. GB1508099.7 dated 12 May 2015. Inventors: Arturo Reyes-Sandoval, Joshua Blight and Cesar Lopez-Camacho.
4. 2015. Registration of a novel software and algorithm to design vaccines for highly variable pathogens. Arturo Reyes-Sandoval and Joshua Blight.
5. 2010. Adjuvanting viral vectors. Patent filed at the UK Intellectual Property Office. P34624GB.
6. 2009. Immunogenic composition of vaccine vectors. Patent Application GB 0823497.3.
7. 2007. Adenoviral vector AdCh63 encoding malaria antigen. Application in Great Britain on September 13, 2007 (0717888.2) and April 10, 2007 (0706914.9); Filings in the UK on April 10, 2008 (PCT/GB2008/01175) and USA on October 12, 2009 (12/595,576).
8. 2007. Adenoviral vectors encoding a pathogen or tumour antigen. Publication No. WO/2008/122811 on October 16, 2008. International application no (PCT/GB2008/001262) on April 10, 2008.

