



Morteza Roodgar DVM, PhD

Veterinarian Research Scientist, Genetics

Bio

BIO

Dr. Morteza Roodgar is a veterinarian scientist with a research focus on Primate induced Pluripotent Stem Cells (iPSCs) and long-read genomics tools. Dr. Roodgar's research focus is on primate stem cell biology, immunology, and comparative genomics of nonhuman primate models for human diseases. The long-term goal of Dr. Roodgar's research is to Replace, Reduce and Refine (aka 3 R's) the use of animals in biomedical research leveraging primate induced pluripotent stem cells (iPSCs) and long-read genomic tools to speed up preclinical testing.

Previous research includes immunology and genomic susceptibility to infectious diseases (e.g., tuberculosis, TB) in nonhuman primate models, Preventive Veterinary Medicine and emerging zoonotic diseases (e.g., COVID-19 and Monkeypox).

INSTITUTE AFFILIATIONS

- Member (Staff), Cardiovascular Institute

HONORS AND AWARDS

- Principal Investigator - National Institute of Health (NIH) K award, NIH (2022-2027)
- National Heart Lung Blood Institute (NHLBI), Stanford NIH-NHLBI Fellowship, NHLBI - Stanford University (2018-2020)
- T32 NIH & HHMI Predoctoral Training Program Scholar; UC Davis CTSC, NIH - UC Davis (2012-13)

EDUCATION AND CERTIFICATIONS

- PhD, University of California Davis , Comparative Pathology and Immunology (2014)
- MPVM, University of California Davis , Preventive Veterinary Medicine (2010)
- DVM, Shiraz University, School of Veterinary Medicine, Iran , Veterinary Medicine (2003)

Publications

PUBLICATIONS

- **Chimpanzee and pig-tailed macaque iPSCs: Improved culture and generation of primate cross-species embryos.** *Cell reports*
Roodgar, M., Suchy, F. P., Nguyen, L. H., Bajpai, V. K., Sinha, R., Vilches-Moure, J. G., Van Bortle, K., Bhadury, J., Metwally, A., Jiang, L., Jian, R., Chiang, R., Oikonomopoulos, et al
2022; 40 (9): 111264
- **Longitudinal linked-read sequencing reveals ecological and evolutionary responses of a human gut microbiome during antibiotic treatment.** *Genome research*
Roodgar, M., Good, B. H., Garud, N. R., Martis, S., Avula, M., Zhou, W., Lancaster, S. M., Lee, H., Babveyh, A., Nesamoney, S., Pollard, K. S., Snyder, M. P.

2021

- **Chromosome-level de novo assembly of the pig-tailed macaque genome using linked-read sequencing and HiC proximity scaffolding.** *GigaScience*
Roodgar, M. n., Babveyh, A. n., Nguyen, L. H., Zhou, W. n., Sinha, R. n., Lee, H. n., Hanks, J. B., Avula, M. n., Jiang, L. n., Jian, R. n., Lee, H. n., Song, G. n., Chaib, et al
2020; 9 (7)
- ***Mycobacterium kansasii* Isolated from Tuberculinpositive Rhesus Macaques (*Macaca mulatta*) in the Absence of Disease.** *Comparative medicine*
Shiple, S. T., Johnson, D. K., Roodgar, M. n., Smith, D. G., Montgomery, C. A., Lloyd, S. M., Higgins, J. A., Kriel, E. H., Klein, H. J., Porter, W. P., Nazareno, J. B., Houghton, P. W., Panda, et al
2017; 67 (4): 368–75
- **Gene expression and TB pathogenesis in rhesus macaques: TR4, CD40, CD40L, FAS (CD95), and TNF are host genetic markers in peripheral blood mononuclear cells that are associated with severity of TB lesions** *INFECTION GENETICS AND EVOLUTION*
Roodgar, M., Ross, C. T., Tarara, R., Lowenstine, L., Dandekar, S., Smith, D.
2015; 36: 396-409
- **Evolutionary Distance of Amino Acid Sequence Orthologs across Macaque Subspecies: Identifying Candidate Genes for SIV Resistance in Chinese Rhesus Macaques** *PLOS ONE*
Ross, C. T., Roodgar, M., Smith, D.
2015; 10 (4): e0123624
- **Inducible nitric oxide synthase (iNOS) regulatory region variation in non-human primates** *INFECTION GENETICS AND EVOLUTION*
Roodgar, M., Ross, C. T., Kenyon, N. J., Marcelino, G., Smith, D.
2015; 31: 236-244
- **Expression levels of 10 candidate genes in lung tissue of vaccinated and TB-infected cynomolgus macaques** *JOURNAL OF MEDICAL PRIMATOLOGY*
Roodgar, M., Lackner, A., Kaushal, D., Sankaran, S., Dandekar, S., Trask, J., Drake, C., Smith, D.
2013; 42 (3): 161-164