

## Postdoctoral Associate Positions

Postdoctoral Research Associate Positions are available in Alexander Raikhel's Laboratory (Department of Entomology and IIGB; UC Riverside). My lab investigates the regulation of mosquito reproduction. Mosquitoes are the most dangerous animals on the planet, transmitting disease pathogens that cause nearly 0.5 million deaths and millions of illnesses each year. Pathogen transmission is intimately linked to blood feeding that is required for reproduction. Presently, we use CRISPR/CAS9 based techniques to delineate the role of the insulin network in regulating mosquito body size and metabolism. We are also working to understand the hormone-driven chromatin changes that regulate gene expression during mosquito reproductive cycles. Finally, we are investigating how microRNAs affect mosquito reproductive cycles. My research is supported by NIH grants.

**Apply:** All interested applicants should send an email to Alexander Raikhel - [alexander.raikhel@ucr.edu](mailto:alexander.raikhel@ucr.edu). Please provide a CV, a statement of prior research experience, and arrange three letters of recommendations (a letter from a Ph.D. adviser is required). Proficiency in advanced molecular techniques and bioinformatics is essential.

### Representative Publications:

#### Utilization of CRISPR/Cas9 – based techniques in investigation of the mosquito insulin network:

Ling, L., Raikhel, A.S. 2018. Serotonin signaling regulates insulin-like peptides for growth, reproduction and metabolism in the disease vector *Aedes aegypti*. *Proc Natl Acad Sci U S A*. 115: E98229831;

Ling, L., Raikhel, A.S. 2021. Crosstalk of insulin-like peptides, juvenile hormone and 20-hydroxyecdysone in regulation of metabolism in the mosquito *Aedes aegypti*. *Proc Natl Acad Sci U.S.A.* Vol. 118 No. 6 e2023470118

#### Molecular basis of hormonal regulation of reproductive cyclicity:

Saha, T.T., Roy, S., Pei, G., Dou, W., Zou, Z. and Raikhel, A.S. 2019. Synergistic action of the transcription factors Krüppel-homolog 1 and Hairy in juvenile hormone/Methoprene-tolerant-mediated gene repression in the mosquito *Aedes aegypti*. *PLoS Genet.*, 15(10): e1008443

Wang, X., Ding, Y., Lu, X., Geng, D., Li, S., Raikhel, A.S., Zou, Z. 2021. The ecdysone-induced protein 93 is a key factor regulating gonadotrophic cycles in the adult female mosquito *Aedes aegypti*. *Proc Natl Acad Sci U.S.A.* 118 (8) e2021910118

#### The role of microRNAs in mosquito reproduction.

Ling, L., Kokoza, V.A., Zhang, C., Aksoy, E., Raikhel, A.S. 2017. MicroRNA-277 targets insulin-like peptides 7 and 8 to control lipid metabolism and reproduction in *Aedes aegypti* mosquitoes. *Proc Natl Acad Sci U S A.*, 114(38): E8017-E8024.

He, Y-Z., Aksoy, E., Ding, Y., Raikhel, A.S. 2021. Hormone dependent activation and repression of microRNAs by the ecdysone receptor in the Dengue vector mosquito *Aedes aegypti*. *Proc Natl Acad Sci U.S.A.* e2102417118.