



## Dr. Oren Kobiler, M.D., Ph.D.

Department of Clinical Microbiology and Immunology  
Sackler Faculty of Medicine



# Investigating Viral Genetic Diversity

## Position

Senior Lecturer, Sackler Faculty of Medicine

## Research

Our research is focused on understanding how viruses generate and maintain genetic diversity. All virus populations display high genomic diversity, which provides opportunities for survival in the constantly changing environment. In many cases, such diversity results in failure of antiviral treatment (resistance to vaccines and antiviral drugs) and the emergence of zoonotic viral pathogens. DNA viruses and segmented RNA viruses exploit recombination and reassortment as mechanisms for diversity creation. We are interested in the mechanisms allowing DNA viral recombination and finding ways to inhibit these mechanisms.

## Publications

**Kobiler O.**, Lipman Y., Therkelsen K., Daubechies I., and Enquist L.W. (2010). Herpesviruses carrying a Brainbow cassette reveal replication and expression of limited numbers of incoming genomes. *Nat. Commun.* 1:146.

**\*Kobiler O.**, \*Card J.P., McCambridge J., Ebdlahad S., Shan Z., Raizada M.K., Sved A.F., and Enquist

L.W. (2011). Microdissection of neural networks by conditional reporter expression from a Brainbow Herpesvirus. *Proc Natl Acad Sci U S A.* 108:3377-82.

**\*Kobiler O.**, \*Card J.P., Ludmir E.B., Desai V., Sved A.F., Enquist L.W. (2011). A dual infection pseudorabies virus conditional reporter approach to identify projections to collateralized neurons in complex neural circuits. *PLoS One*, 6:e21141.

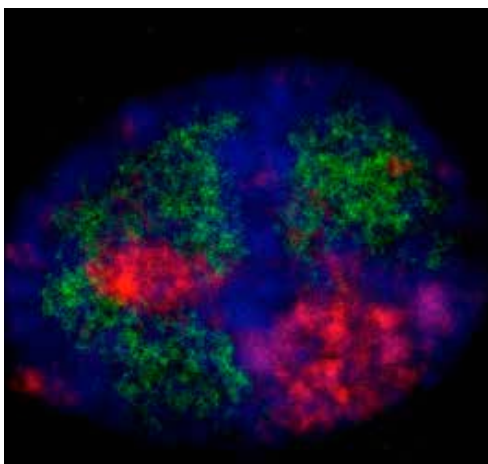
**Kobiler O.**, Brodersen P., Taylor M.P., Ludmir E.B. and L.W. Enquist. (2011). Herpesvirus replication compartments originate with single incoming viral genomes. *mBio* 2:e00278-11. doi:10.1128/mBio.00278-11.

Taylor MP, **Kobiler O.**, Enquist LW. (2012) Alphaherpesvirus axon-to-cell spread involves limited virion transmission. *Proc Natl Acad Sci USA.* 109:17046-51.

**Kobiler O.**, Drayman N, Butin-Israeli V, Oppenheim A. (2012) Virus strategies for passing the nuclear envelope barrier. *Nucleus.* 3:526-39.

## Reviews

Szpara M.L., **Kobiler O.**, and Enquist L.W. (2010). A common neuronal response to alphaherpesvirus infection. *J Neuroimmune Pharmacol.* 5:418-27.



A. Spread of three alpha herpesviruses (each expressing a different XFP) from a single infected cell suggests that only a limited number of viral genomes are able to be expressed and replicated inside a single cell. B. Replication compartments in a single nucleus infected with two alphaherpesviruses suggest that genomes remain in separate territories in the nucleus.