Articles of Significant Interest Selected from This Issue by the Editors

**Poliovirus Transfers Its RNA into Cells in an Unexpected Way**

Nonenveloped viruses such as poliovirus must transfer their genomes across membranes to initiate infection. Receptor binding triggers viral expansion, exposing hydrophobic components of the capsid that bind to membrane directly. Strauss et al. (p. 3903–3914) have visualized the resulting membrane complexes by electron cryotomography and, surprisingly, observe a pair of long tubular connectors joining virus to membrane. RNA in transit is a likely component of one of these connectors, along with viral polypeptides. The off-axis orientation of the virus and its separation from the membrane show that published models of the mechanism of RNA transfer are incorrect and alternatives must be considered.

**All vOTUs Are Not Created Equal**

Viral ovarian tumor domain proteases (vOTUs) are found in several viruses and function to reverse posttranslational modification of host proteins by ubiquitin and interferon-stimulated gene product 15, implicating vOTUs in immune suppression. Capodagli et al. (p. 3815–3827) demonstrate that vOTUs from different nairoviruses and one tymovirus display divergent preferences toward these host substrates. Remarkably, the species origin of the targeted protein also affects vOTU activity. Additionally, the three-dimensional structure of the Dugbe nairovirus vOTU in complex with ubiquitin points to the amino acid diversity within the binding interface as a likely source for substrate preference among nairovirus vOTUs.

**Recoiling from the Nucleus: an Alternative Autophagic Pathway for Antiviral Defense**

A new autophagic pathway might add to the cellular arsenal for antiviral defense. Radtke et al. (p. 3990–3997) show that many types of cells respond to herpes simplex virus 1 infection by forming vesicles at the nuclear envelope that transport immunodominant viral protein gB to a degradative compartment. The nuclear envelope-derived autophagy pathway is active when two other antiviral defense mechanisms, macroautophagy and translational shutoff, are impaired by the virus. Like macroautophagy, this alternative autophagic pathway might limit viral spread by enhancing particle clearance and presentation of viral antigens to immune cells.

**Innate and Adaptive Immunity and Recovery from Secondary Orthopoxvirus Infection**

Recovery from secondary orthopoxvirus infections is thought to be solely attributable to antiviral antibodies, with T cells playing a minimal role. Tahiliani et al. (p. 3852–3861) find, using vaccinated mice, that orchestrated functions of both innate and adaptive immune cells are involved in recovery, resulting in a fail-safe mechanism in which a defect in the function of innate cell subsets allows T cell subsets to play a compensatory role. Conversely, in the absence of T cell function, innate cell subsets are vital. These findings underscore the importance of all arms of the immune system for effective control of secondary orthopoxvirus infections.

**A Possible Host Origin for Influenza Virus Hemagglutinin and Other Viral Lectins**

Much is known about influenza virus hemagglutinin structure and function, but its evolutionary origin is not certain. Chen and Li (p. 4118–4120) demonstrate that the structural topologies of influenza virus hemagglutinin and other viral lectins are related to those of human galectins, suggesting that ancestors of these viruses acquired their lectins from a host. Viral lectins have evolved a variety of strategies to hide their glycan-binding sites from human immune surveillance. This work contributes new knowledge about the evolutionary origins of viral lectins and the generation of multifunctional viral proteins.