Biology Seminar

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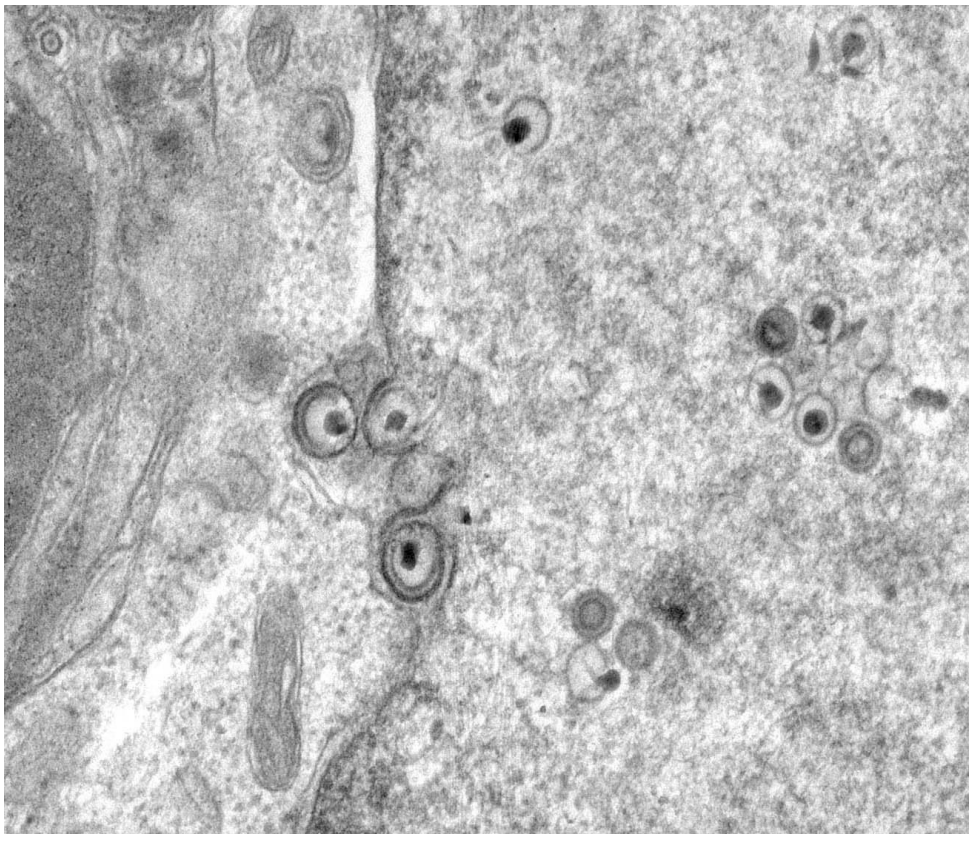
Functional Studies on a Family of Genes in Murine Cytomegalovirus

Human cytomegalovirus (HCMV) is a ubiquitous herpesvirus, infecting the majority of adults. Most people do not know that they are infected, since infection is generally asymptomatic. However for immunocompromised individuals, such as transplant recipients, people with AIDS, and neonates, cytomegalovirus infection is a significant cause of disease and death. HCMV exhibits strict host species restriction, limiting studies on this virus to a few cell lines in culture. Therefore, the closely related murine cytomegalovirus (MCMV) is used extensively as a model for HCMV. In our studies on MCMV, we have focused on a family of cytomegalovirus genes known as the US22 gene family. In studying the products of five of these genes, we found that they fell into two groups. The products of two genes (M142 and M143) are essential for the virus (without them the virus cannot replicate). We found that these proteins function as a complex to inhibit the dsRNA response pathway mediated by protein kinase R, an important part of the mammalian innate immune response. The products of the other three genes also interact and function to optimize viral replication in specific cell-types. Understanding how these proteins function to optimize viral growth has the potential to provide new avenues for prevention and treatment of cytomegalovirus infection.



Friday Sept 18, 2009 **2:00 PM** **ENV125 (EESAT)**