

## SWINE HEALTH

**Title:** Determination of the role of L83L, an uncharacterized ASFV protein that binds IL-1 $\beta$  during ASFV infection – **NPB #16-184**

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**Scientific Abstract:** African swine fever virus (ASFV) causes a contagious and frequently lethal disease of pigs that result in significant economic consequences to the swine industry. The ASFV genome encodes for more than 160 genes, but only a few of them have been studied and their functionality described. Here we report the characterization of open reading frame (ORF) L83L. A recombinant ASFV harboring a HA tagged version of the L83L protein was developed (ASFV-G-L83L-HA) and used to demonstrate that L83L is a transiently expressed early virus protein. A recombinant ASFV lacking the L83L gene (ASFV-G- $\Delta$ L83L) was developed from the highly virulent field isolate Georgia 2007 (ASFV-G) and was used to show that L83L is a non-essential gene for virus replication and pathogenicity. ASFV-G- $\Delta$ L83L had a similar replication ability in primary swine macrophage cell cultures when compared to its parental virus ASFV-G. Analysis of host-protein interactions for L83L using a yeast two-hybrid screen identified IL-1 $\beta$  as its host ligand. Experimental infection of domestic pigs showed that ASFV-G- $\Delta$ L83L is as virulent as the parental virus ASFV-G.

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