

Research group: Benoît MUYLKENS



Viral infections at the human-animal interface

Exploring epidemiological and molecular aspects of viral infections at the human-animal interface

Integrated Veterinary
Research Unit (URVI)

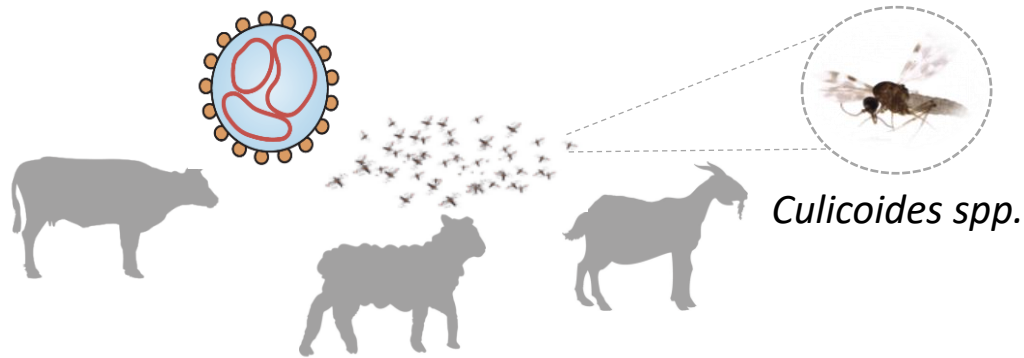


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“Are RNA secondary structures key determinants of viral pathogenesis ?”



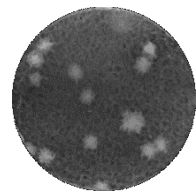
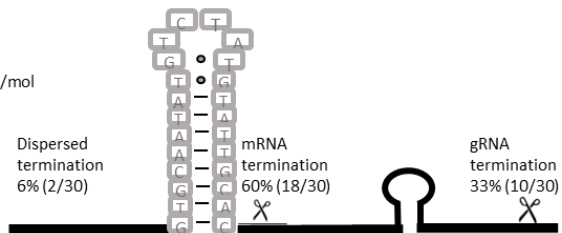
Arbovirus



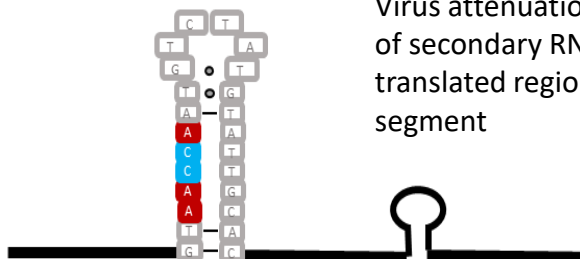
Susceptible hosts - Ruminants

WT:

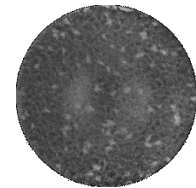
MFE: -9.49 Kcal/mol



HP 5p:

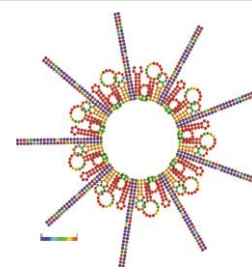


Virus attenuation caused by decreased length of secondary RNA structures in the 3' non translated region of Schmallenberg virus short segment



Viral infection, circular RNAs and oncogenesis

Viral species expressing circular RNAs	DNA virus				RNA virus			
	Nuclear replication							
	dsDNA				ss +RNA	Ss - RNA	dsRNA	
	Herpesvirales	Blubervirales	Sepolyvirales	Zurhausenvirales	Rowavirales	Nidovirales	Mononegavirales	Reovirales
Herpesviridae -Alpha → MDV -Beta → HCMV -Gamma → EBV → KSHV → rLCV → MHV68	Hepadnaviridae → HBV	Polyomaviridae → MCV → RatPyV2	Papillomaviridae → HPV16, 18	Adenoviridae → FAdV-4	Coronaviridae → SARS-CoV-1 → SARS-CoV-2 → MERS-CoV	Paramyxoviridae → RSV	Spinareoviridae -Cypovirus → BmCPV -Aquareovirus → GCRV	
Roles	- miRNA sponge - coding - Interaction with cellular proteins	- interaction with cellular proteins	- miRNA sponge	- coding	- unknown	- unknown	- unknown	- coding



Circular RNA expressed by Marek's disease virus (MDV), an oncogenic herpesvirus, inducing the development of T CD4+ lymphoma in chicken



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