

- Objectives**
- To define the physiopathology behind Type 1 diabetes (T1D).
 - To understand what animal models are and to acquire a general view of the main types, with a brief mention on animal models in T1D research.
 - To acquire a detailed view of the use of virally induced animal models in T1D research.

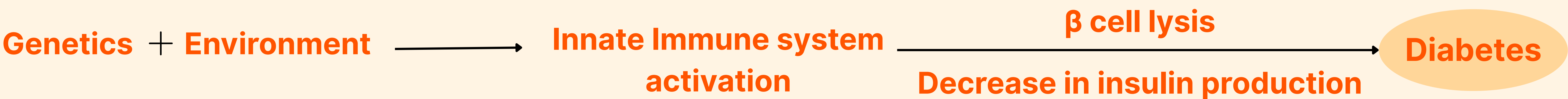
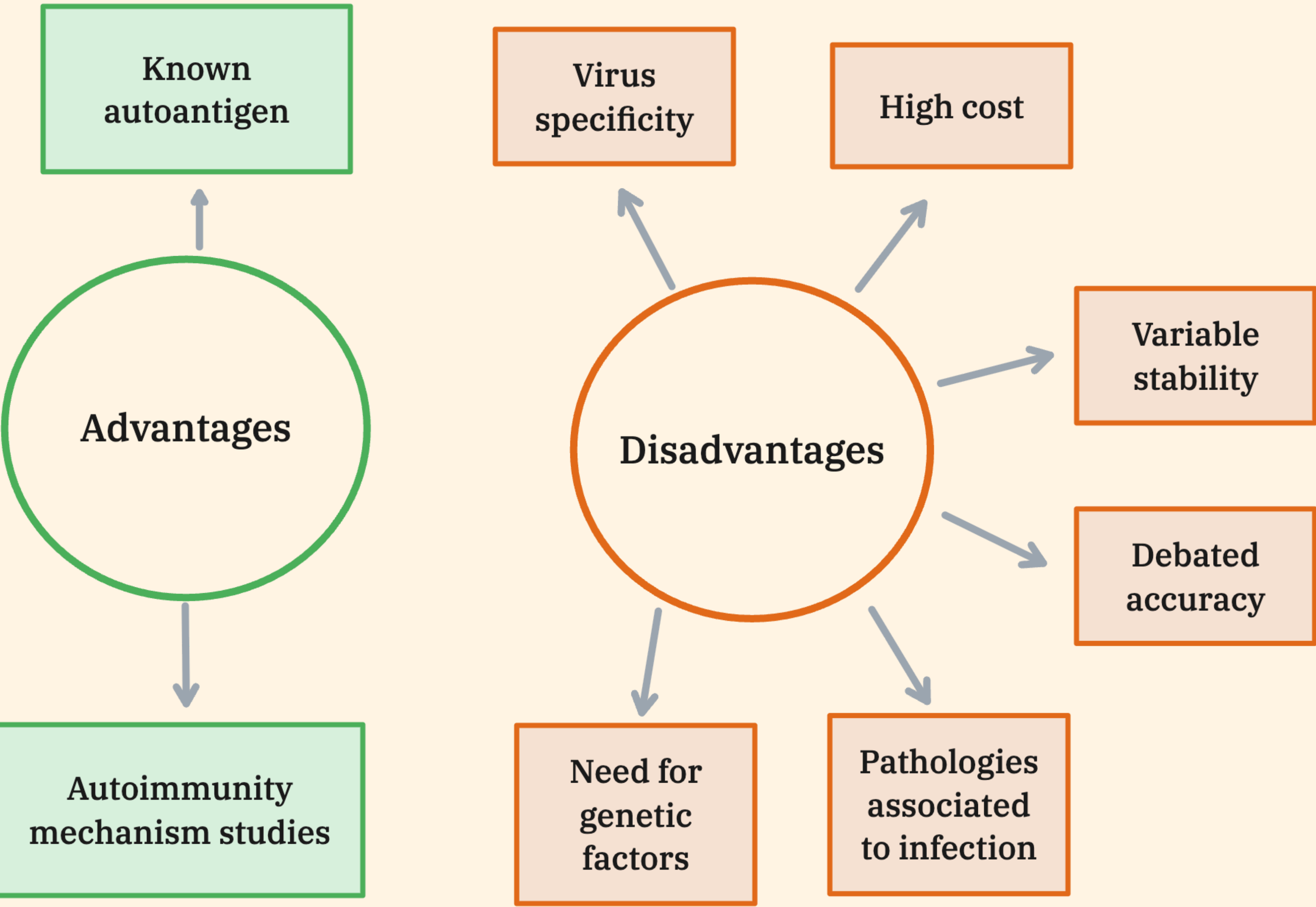


Figure 1. Simplified pathophysiology of Type 1 diabetes

Table 1. Most common viruses with their corresponding mechanism of induction and the animal models where they have been used

Virus	Mechanism	Animal model
Coxsackievirus B (CVB)	Molecular mimicry (2) Bystander damage (3)	Mouse Hamster Monkey (3)
Rat cytomegalovirus (RCMV)	Molecular mimicry Bystander damage Beta cell destruction (4)	Rat (4)
Encephalomyocarditis virus (EMCV-D)	Beta cell destruction (4)	Mouse Hamster Monkey (3)
Kilham rat virus (KRV)	Disruption in the Treg-effector T cell balance (2)	Rat (5)



Conclusion

Virally induced animal models are fairly new models and may give a new insight into the mechanisms of autoimmune diabetes. However, further research is needed to investigate the interactions that take place between viruses and other environmental factors, genetic factors and the immune system.

References



Figure 2. Illustration of the advantages and disadvantages of virally induced animal models