

# PROPOSITIONS

## TO THE THESIS

### **Understanding Norovirus-Host Interactions:**

### **Implications for Developing Novel Antiviral Strategies**

By Peifa Yu

1. Repurposing potential broad antiviral drugs (such as 2'-FdC) from pre-clinical or clinical used antivirals facilitates the drug development against norovirus infection. (*this thesis*)
2. A wide range of interferon-stimulated genes (ISGs) are induced upon interferon or lipopolysaccharide treatment, and some of them exert anti-norovirus activity. (*this thesis*)
3. Overexpression of RIG-I-like receptors, RIG-I and MDA5, and guanylate-binding protein 2 (GBP2) potentially inhibits norovirus replication. (*this thesis*)
4. Murine norovirus replicase NS7 enhances RIG-I-like receptors-mediated but antagonizes GBP2-mediated antiviral effects. (*this thesis*)
5. cGAS-STING exerts potent antiviral activity against murine norovirus infection, but antagonizes the N-terminus of RIG-I-mediated antiviral effects. (*this thesis*)
6. A subset of noroviruses presenting a large number of amino acid mutations were antigenically similar, while another subset of viruses presenting only few amino acid mutations were antigenically distinct. (*Kendra JA et al., PNAS 2021*)
7. The most fruitful basis for the discovery of a new drug is to start with an old drug. (James Black)
8. Enteric viruses have evolved in the unique environment of the intestine for optimal replication and transmission. Trans-kingdom interactions (between viruses, bacteria, archaea, helminthes, fungi, and phage) are particularly important in shaping the course of a viral infection and the ensuing host immune response. (*Pfeiffer JK et al., Science 2016*)
9. The spread of (re-)emerging viruses is not confined by geographic boundaries, it is clear that collaborative solutions across nations are needed to solve these global problems. (*George F. Gao, Cell 2018*)
10. The first step in solving a problem is to recognize that it does exist. (*Zig Ziglar*)
11. 老子《道德经》:千里之行,始于足下。(A journey of a thousand miles begins with a single step)