Propositions

Modeling infection and antiviral therapy of enteric viruses using primary intestinal organoids

1, Even though rotaviral enteritis is in general self-liming, infected transplantation patients usually require intensive care, rehydration nutritional support, and benefit from prevention. (This thesis)

2, Human organoids efficiently support the infection of patient-derived rotavirus strains and can be potentially harnessed for personalized evaluation of the efficacy of antiviral medications. (This thesis)

3, I have identified MPA as a potent inhibitor of rotavirus infection with a high barrier to resistance development, apparently acting via the inhibition of the IMPDH enzymes to deplete cellular nucleotide pools. (This thesis)

4, I have identified 6-TG as a potent inhibitor of rotavirus infection, acting via the inhibition of Rac1 activation. (This thesis)

5, PI3K-Akt-mTOR signaling is essential for sustaining rotavirus infection. Thus, blocking key elements of this pathway, including PI3K, mTOR and 4E-BP1, results in potent anti-rotavirus activity. (This Thesis)

6, Mini-guts present an opportunity to exploit in a variety of ways the distinct morphogenetic characteristics of adult stem cells. (Sato et al. Science 2013)

7, It is more difficult to recognize infection in transplant recipients than it is in persons with normal immune function, since signs and symptoms of infection are often diminished. (Jay A. Fishman. The New England Journal of Medicine 2007)

8, Try not to become a man of success, but rather try to become a man of value. (Albert Einstein). Similarly one should not pursue high profile publication as a goal per se, but for maximizing the impact of research on science and clinical practice.

9, 孙子兵法：“知己知彼，百战不殆”(If you know the enemy and know yourself, you need not fear the result of a hundred battles. From The Art of War wrote by Sun Tzu). Similarly, if one he knows his own work well and has a good command of the biomedical literature one need not fear scientific interrogation.

10, My powers are ordinary. Only my application brings me success. (Attributed to Isaac Newton). Similarly, application of available technology to new research questions is a fruitful approach

11, Carelessness is the stumbling block towards success. (myself)

Yuebang Yin, 2017