

PROPOSITIONS

TO THE THESIS

Translational Decoding in Viral Infection and Cancer Development

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1. Translational regulation bridges the cellular transcriptome and proteome, so viruses and cancers do. (*This thesis*)
2. The efficiency and/ or fidelity of translational decoding is mainly constrained by mRNA codon and tRNA interactions. (*This thesis*)
3. 14 out of 64 tRNA genes in humans and the main avian species (chicken and duck) are lacking in parallel from the respective genomes, including 8 tRNA-A₃₄NN and 6 tRNA-G₃₄NN species. (*This thesis*)
4. The translation machinery is not always perfect, and errors in the amino acid composition may occur that mainly derive from tRNA mis-decoding and mis-charging, especially when certain codon-paired tRNA species are missing. (*This thesis*)
5. The amino acid charging process of tRNA-Lys-CUU supports cell growth and movement of liver cancer cells, thus is a potential therapeutical target for liver cancer. (*This thesis*)
6. Transfer RNA looks like nature's attempt to make RNA do the job of a protein. (*Francis Crick*)
7. After establishing the role of tRNAs in protein synthesis, the field moved to other parts of the RNA world. (*Paul Schimmel., Nat Rev Mol Cell Biol 2018*)
8. Cell death represents a basic biological paradigm that governs outcomes and long-term sequelae in almost every hepatic disease condition. (*Robert F. Schwabe, Nat Rev Gastro Hepat 2018*)
9. Medicine comprises two parts, one theoretical, and one practical, though both are really speculative science. (*Ibn Sina*)
10. Man's yesterday may never be like his morrow; Naught may endure but mutability. (*Percy Bysshe Shelley*)
11. 《易经·系辞上》:一阴一阳之谓道。The Book of Changes (Yijing), "one yin and one yang, this is the Dao." (Dao first determines itself as the One (or Oneness) and then through the One gives birth to the two).