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Determinant of receptor-preference switch in influenza hemagglutinin

Hemagglutinin (HA) is one of the two major glycoproteins on the surface of influenza virus. One main function of HA is to selectively bind to sialic-acid receptors on host cells to trigger viral entry by endocytosis. There are two types of sialic-acid receptors that HA recognize: α(2, 3)-linked avian-like receptors and α(2, 6)-linked humans-like receptors. Frequently, a small number of substitutions in HA would endorse a switch in receptor-binding specificity from avian-like to human-like receptors, thus allowing cross-species transmission. However, the set of residues required for such a receptor-binding specificity switch differs among various subtypes of influenza type A virus. In my talk, I will discuss the results of our most recent study in understanding the underlying principles of this process.

Biography

Qinghua Wang has her expertise in Structural Biology with a focus on mechanistic studies of actin-mediated signal transduction. She has pioneered a novel double-mutant strategy that for the first time allowed the capture of stable actin nuclei for structural studies. By applying this novel strategy, she has elucidated the molecular mechanisms of mammalian tandem-actin-binding nucleators.

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