

S007 Protein evolution - a reconstructive approach

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In spite of the robustness and perfection of their mechanism of action, proteins possess a remarkable ability to rapidly change and adopt new functions. I will describe experimental work aimed at reproducing the evolution of new proteins in the laboratory, and unraveling the evolvability traits of proteins. Specifically, I will describe how the functional promiscuity of proteins, their conformational plasticity, and their modularity of fold, accelerate their rate of evolution. I will also address the issue of neutral (or actually, seemingly neutral) mutations, and neutral networks, as facilitators of protein evolution.