Interaction of Ostreolysin A, a membrane raft binding protein from the oyster mushroom, with natural and artificial lipid membranes

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Membrane microdomains, such as membrane rafts, are transient, dynamic and unstable membrane entities that are involved in numerous cellularfunctions (Simons and Ikonen, 1997). An increasing amount of experimental data urge for the development of new techniques and approaches that would allow their structural and functional characterization. In particular, fluorescently labeled cytolytic proteins that interact specifically with molecules enriched in lipid rafts are gaining interest.

Ostreolysin A (OlyA), a 15-kDa protein from the edible oyster mushroom (*Pleurotus ostreatus*), is a representative of aegerolysin protein family. In concert with a 59-kDa protein, PlyB, it forms transmembrane pores and causes lysis of cells. Even when alone, OlyA specifically recognizes and binds to cholesterol/sphingomyelin-enriched membrane domains of living cells and artificial lipid bilayers (Sepčić et al., 2004), and therefore, it seems appropriate candidate for development of a cholesterol-specific membrane marker.