

THE STYRENE-MALEIC ACID COPOLYMER: A VERSATILE TOOL IN MEMBRANE RESEARCH

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ABSTRACT

A promising tool in membrane research is the solubilization of membranes by styrene-maleic acid (SMA) copolymers. These amphipathic molecules are able to solubilize lipid bilayers in the form of nanodiscs that are bounded by the copolymer. Much insight into the mode of action of SMA copolymers has been obtained by using model membrane systems of lipids that spontaneously self-assemble into bilayers. Here I will discuss recent results in our group that illustrate some of the applications of SMA in membrane research. These include the isolation and characterization of membrane proteins and studies of preferential protein-lipid interactions. I will also discuss how the composition of the copolymers affects their membrane solubilizing power and how it influences the properties of the nanodiscs that are formed.