

Caveolin-1: An ambiguous partner in cell signalling and cancer

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Caveolae are small plasma membrane invaginations that have been implicated in a variety of functions including transcytosis, potocytosis and cholesterol transport and signal transduction. The major protein component of this compartment is a family of proteins called caveolins. Experimental data obtained in knockout mice have provided unequivocal evidence for a requirement of caveolins to generate morphologically detectable caveolae structures. However, expression of caveolins is not sufficient per se to assure the presence of these structures. With respect to other roles attributed to caveolins in the regulation of cellular function, insights are even less clear. Here we will consider, more specifically, the data concerning the ambiguous roles ascribed to caveolin-1 in signal transduction and cancer. In particular, evidence indicating that caveolin-1 function is cell context dependent will be discussed. © 2008 The Authors.