

Signaling triggered by Thy-1 interaction with $\alpha 3$ integrin on astrocytes is an essential step towards unraveling neuronal Thy-1 function

Avalos, Ana Maria

Labra, Cecilia V.

Quest, Andrew F.G.

Leyton, Lissette

Thy-1 is an abundant neuronal glycoprotein in mammals. Despite such prevalence, Thy-1 function remains largely obscure in the absence of a defined ligand. Recently described evidence that Thy-1 interacts with $\alpha 3$ integrin on astrocytes will be discussed. Thy-1 binding to $\alpha 3$ integrin triggers tyrosine phosphorylation of focal adhesion proteins in astrocytes, thereby promoting focal adhesion formation, cell attachment and spreading. Thy-1 has been reported to modulate neurite outgrowth by triggering a cellular response in neurons. However, our data indicate that Thy-1 can also initiate signaling events that promote adhesion of adjacent astrocytes to the underlying surface. Preliminary results suggest that morphological changes observed in the actin cytoskeleton of astrocytes as a consequence of Thy-1 binding is mediated by small GTPases from the Rho family. Our findings argue that Thy-1 functions in a bimodal fashion, as a receptor on neuronal cells and as a ligand for $\alpha 3$ integrin recepto