

The acquisition of a proper dendrite morphology is a critical aspect of neuronal development toward formation of the functional network. The role of extracellular matrix and its cellular receptors in acquisition of proper dendrite morphology in neurons has remained enigmatic. We report here that CD44 adhesion molecule, the main hyaluronan receptor, localizes in dendrites and plays a crucial inhibitory role in dendritic tree arborization in vitro and in vivo. This novel function is exerted by the activation of Src tyrosine kinase, leading to the alteration of the Golgi apparatus morphology. Overall, our results point to a novel role of CD44 as an essential regulator of dendritic arbor complexity in both health and disease.