

actin binding protein tensin 1

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Cell adhesion is involved in many physiological and pathological processes (e.g. embryogenesis, cancers). Focal adhesions are transmembrane complexes that connect the extracellular matrix (ECM) to the actin cytoskeleton, via integrin transmembrane receptors and actin-binding proteins (ABPs). Among the ABPs that have been characterised, some proteins regulate actin nucleation, association and elongation. Tensin is thought to be involved in the activation of integrins and the regulation of actin assembly. Tensin has been proposed to interact with vinculin but this point has never been elucidated. Tensin is a barbed end capping protein but like most signal-responsive proteins, it is unlikely that this activity is constitutive. The aim of this project is to characterize the function and the regulation of tensin. More specifically, we will 1) clarify the tensin-vinculin interaction and 2) study the regulation of the capping activity of tensin. As a prerequisite we will first characterize various active fragments of tensin.