

P015 Interaction of opticin with $\alpha_4\beta_1$ and $\alpha_v\beta_3$ integrins.

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Opticin is a member of the extracellular matrix small leucine-rich repeat protein family that was first isolated from vitreous collagen fibrils. In the mouse, opticin expression is confined to the non-pigmented ciliary epithelium of the eye. To date, very little is known about its function. In this study we investigated the potential interaction of opticin with cellular receptors such as integrins.

Methods: Purified recombinant bovine opticin was used to study its interaction with A375-SM melanoma cells by cell spreading assay. These cells expressed a variety of integrins. To identify the integrins responsible for interactions, anti-functional antibodies raised against α and β chains were used as inhibitors.

Results: The cell spreading assays on opticin showed 30-40% of the cells spreading when opticin was coated on the wells at 100 $\mu\text{g/ml}$. Inhibition assays revealed that the interaction between A375-SM cells and opticin could be blocked by anti-functional antibodies raised against α_4 , α_v , β_1 and β_3 chains.

Discussion: These results suggest that opticin is a ligand for the $\alpha_4\beta_1$ and $\alpha_v\beta_3$ integrins. Therefore, opticin could be a key regulator of physiological and pathological processes within the eye, including angiogenesis within the vitreous cavity.