

Biochemical evidence for adhesion-promoting role of major intrinsic protein isolated from both normal and cataractous human lenses

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In this study, we tested the adhesion-promoting role of major intrinsic protein from both normal human (cadaver) and senile cataractous lenses. Junctional membrane solubilized proteins and pure major intrinsic protein obtained from both type of lenses were reconstituted in neutral phosphatidylcholine liposomes. The interaction of these liposomes with phosphatidylserine vesicles was studied by resonance energy transfer. Our results show that normal human lens junction solubilized proteins and pure major intrinsic protein isolated from them promote adhesion. No quenching effect was observed when major intrinsic protein was omitted in the vesicle reconstitution, no other intrinsic protein of normal human junctional membrane provoked the adhesive effect. In contrast, major intrinsic protein isolated from human senile cataractous lens fails to induce adhesion. The proteolytic cleavages that in vitro originate major intrinsic protein 22 000 Da did not blunt its adhesive capability, suggestin