ANTICATARACTOGENIC PROPERTY OF γ-GLUTAMYLCYSTEINE ETHYL ESTER IN AN ANIMAL MODEL OF CATARACT

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The anticataractogenic potential of γ-glutamylcysteine ethyl ester was investigated in model cataracts induced by L-buthionine sulfoximine. Subcutaneous injection of the ester (0.625-2.5 mmol/Kg) effectively inhibited cataractogenesis in suckling mice. Treatment of mice with L-buthionine sulfoximine alone resulted in a marked reduction of the glutathione content in the eyes. This deprivation of glutathione was mitigated to a significant degree ($p < 0.05$) by coadministering γ-glutamylcysteine ethyl ester. In an experiment with rat lens in culture, γ-glutamylcysteine ethyl ester was found to elevate the lenticular level of glutathione. These results indicate that γ-glutamylcysteine ethyl ester is able to permeate across biomembranes and serves as an excellent precursor for glutathione biosynthesis, thereby exerting its anticataractogenic activity.