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Changes of Glutathione and Taurine Concentrations in Lenses of Rat Eyes induced by Galactose-cataract Formation or Ageing

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Sulfur-containing compounds in the lens were studied in relation to galactose cataract formation. Female Wistar rats were fed a 35% galactose diet and the changes in lens sulfur concentration and its distribution on a gel filtration column were compared with age-related changes. Concentration of sulfur in the whole lens decreased with time. A low constant level was attained on the fifth day of the galactose diet. A decrease of sulfur concentration in the soluble fraction of the lens paralleled that of the whole lens which was correlated with the decrease of glutathione and taurine concentrations on a gel filtration column by high-performance liquid chromatography-inductively coupled argon plasma atomic emission spectrometry (HPLC-ICP). Concentration of magnesium in the lens decreased after the fifth day, while the ratio of sodium to potassium increased. These changes in sulfur-containing compounds and metals were observed prior to the onset of cataract formation.

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