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Anticataract Activity of Betulinic Acid in Chick Embryo Lens Model

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Abstract : In this investigation, anticataract activity was determined using cataract formation in developing chick embryo by hydrocortisone. Lenses were evaluated firstly for the extent of opacity and secondly, for lens glutathione (GSH) levels. Betulinic acid was isolated from the chloroform fraction of the crude ethanolic extract of Bauhinia variegata bark (SBE). Fourteen days old Australorp fertilized eggs were divided into different groups of six eggs each. After 24 hrs incubation in a humidified incubator (37oC), at 15 days of age; hydrocortisone (0.25µM/0.2ml/egg) was administered to the chorioallantoic membrane of chick embryos through a small hole in the egg shell on the air sack. Ascorbic acid (standard) or Betulinic acid (test) were administered at 3, 10 and 20 hr after hydrocortisone administration at a specified dose. The puncture was sealed with a cellophane tape and eggs were incubated for 48 hrs in a humidified incubator at 37oC. After 48 hrs, the lenses were isolated for the determination of the extent of opacity and Glutathione level. The betulinic acid prevented the opacification of the chick embryo lenses induced by hydrocortisone. The betulinic acid also prevented the decline of GSH content caused by hydrocortisone. The results indicate that betulinic acid protect the cataract formation in chick embryo lenses induced by hydrocortisone.

Keywords : betulinic acid, cataract, cloudiness, ovine
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