The effect of Brazilin compound to circulated iron level in rat iron overload model

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Abstract

Brazilin is a group of orthodihydroxy catechol and an active compound in Sappan wood (Caesalpinia sappan, L.). The molecular structure indicates that brazilin is capable to chelate metal. The aim of this study was to determine the effect of brazilin to circulate iron level in rats with iron overload. A total of 3 female Wistar rats were given iron dextran and treated without or with brazilin at various dosages for 14 days, via oral. At the end of experiment, 5 ml of blood was collected from heart and further centrifuged in 1500 rpm for 15 minutes to collect serum. Serum was stored -20°C before used. Ferritin was measured by Ferritin ELISA kit (Novus Biologicals, KA0211), and Iron and TIBC (Total Iron Binding Capacity) were measured by Iron assay (Randox, SI257) and TIBC assay (Randox, TI1010) respectively based on manufacturer’s protocols. Administration of iron dextran at dosage of 60 mg/kg body weight/day dramatically increased serum iron and ferritin (722.7% and 98.71% respectively). Brazilin given at a dosage of 17.5 mg/kg body weight/day was able to reduce iron level to normal condition, as indicated by a decrease in the activity of serum iron and ferritin, (87.1% and 42.3% respectively), and increased of TIBC level 54.2%. As conclusion, brazilin at a dosage 17.5 mg/kg body weight/day has effect to reduce iron level in rat with iron overload condition.

Keywords: Brazilin, Caesalpinia sappan, ferritin, serum iron, TIBC

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