

RADIOPROTECTIVE ACTIVITY OF CuDIPS IN RATS.

Dhasanai Suriyachan*, Supen Patarakitvanit*, Pichit Ratananakorn, Charlie Kanistachart****

* Department of Pharmacology, Pramongkutklao College of Medicine, Bangkok 10400.

**Department of Radiology, Pramongkutklao Hospital, Bangkok 10400

Toxicity and radioprotective activity of copper (II)₂ (3, 5- diisopropylsalicylate)₄ or CuDIPS were investigated in adult Sprague Dawley rats. The LD50/30 values of CuDIPS in male animals using corn oil as vehicle were 40 and 90 mg/kg for intraperitoneal and subcutaneous administrations, respectively. Subcutaneous injection of CuDIPS in corn oil produced a depot lesion at the site of administration in some rats. Depots were also found in some corn oil-treated animals. Thus, this route was not employed in survival studies. Treatment of male rats with CuDIPS 10 mg/kg, I.P. 3 hr before or just after whole body gamma irradiation (8.0 Gy, 0.51 Gy/min) increased survival of the animals from 40% to 60 and 75%, respectively. Since intraperitoneal injection of CuDIPS may induce connective tissue synthesis (adhesion) in the peritoneal cavity, the compound was given by oral or subcutaneous route. And the vehicle was switched from corn oil to propyleneglycol and 1.4% polyvinylalcohol in normal saline solution to avoid depot lesion induced by subcutaneous administration of the former solvent.

The LD50/30 values of CuDIPS dissolved in these vehicles were 250 and 200 mg/kg for oral and subcutaneous administrations in male rats, respectively. The corresponding values in female animals were 320 and 160 mg/kg. CuDIPS at a dose of 50 mg/kg P.O. or S.C. 3 hr prior to gamma irradiation offered no radioprotective effect in either sex of rats. These may be due to an incomplete dissolution of CuDIPS in propyleneglycol and 1.4% polyvinylalcohol solvents.