

Effects of pregnenolone-16 α -carbonitrile on vitamin E status and protein levels of antioxidant enzymes in male rats fed a vitamin E-supplemented diet. H.M. Shaw, W.H. Chen, *Redox Rep.*, 14, 61-68 (2009).

The aim of this study was to evaluate the effects of the administration of pregnenolone-16 α -carbonitrile (PCN), an inducer of the cytochrome P450 3A gene in rats, on vitamin E status and antioxidant enzyme protein levels in rats fed a vitamin E-supplemented diet. Two groups of male Wistar rats were fed for 3 weeks with a basal diet containing 50 ppm of α -tocopherol or the same diet containing 10 times more α -tocopherol. In the final 3 days, each group was divided into two subgroups which were given a single daily intraperitoneal injection of PCN at 75 mg/kg (groups PCN and PCN+VE) or DMSO (groups DS and DS+VE). PCN treatment alone significantly reduced the α -tocopherol content of the liver and plasma and this effect was prevented by supplementation with 10-fold more α -tocopherol. α -Tocopherol levels in the kidneys, lung, heart, and testes were significantly higher in both vitamin E-supplemented groups than in the control groups. TBARS levels

in the liver and lung were significantly increased in both PCN-treated groups, as shown by two-way ANOVA analysis. PCN also caused a significant reduction in protein levels of catalase and glutathione peroxidase (GPx) in both groups. Dietary vitamin E supplementation caused a decrease in liver protein levels of GPx and superoxide dismutase, but not catalase, in both groups and protected against PCN-induced lipid peroxidation, which was caused by CYP3A induction and a reduction in antioxidant enzyme levels.