

Acute toxicity study and antioxidant activity of herbal tonic "၆၀"

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Abstract

Free radicals are highly reactive molecular species with an unpaired electron. The most damaging radical in biological systems are oxygen radicals (sometimes called reactive oxygen species). Antioxidants are normally produced from the body to prevent adverse effects of these free radicals. Antioxidants have antiageing property. Antioxidant from natural substances such as plants, fruits vegetables, spices and herbs that are consumed as food or ingredients have been widely investigated for several biochemical and pharmacological properties. Most of antioxidants compounds in a typical diet are derived from plants sources. The herbal tonic medicine (၆၀) contains honey, Za-deik-pho, Lay- hnyin, Betel leaves, Sindone-ma-nwe, Natha-phyu, Nwe-gyo, Natha-ni, Gant Kaw, five kind of Sa-mone-myo and salt. In the present study, the objectives were to determine the phytochemical constituents, acute toxicity study and the free radical scavenging activity (antioxidant activity) of the test drug to compare with standard ascorbic acid. Preliminary phytochemical constituents of the test drug was done by according to the Harborne methods (Harborne, J.B, 1984) and physico chemical test of the test drug was done by WHO method (1998). Free radical scavenging activity was evaluated using 1,1-diphenyl -2-picrylhydrazyl (DPPH) free radical. Acute Toxicity test was performed according to OECD guideline 423. (Organization for Economic Co-operation and Development). The test drug contains flavonoids, glycosides, resins, polyphenols, carbohydrate, amino acid, saponins, tannins, steroids /triterpene and reducing sugar. Ethanolic extract (50 %) of the test drug was found to have radical scavenging activity (antioxidant activity) with IC₅₀ (50% Inhibition Concentration) values of 12.39 µg/ml. This herbal tonic drug was non toxic up to maximum permissible doses of 5000mg/ kg. It could be concluded that the test drug possess antioxidant activity in the experimental study. Therefore, this herbal tonic "၆၀" is experimentally proven as a safe and a good source of traditional medicine used as tonic drug.