

J Forensic Toxicol Pharmacol 2018, Volume: 7 DOI: 10.4172/2325-9841-C6-024

October 24-25, 2018 Paris, France

In vitro genotoxic potential of D-004 on the blood lymphocytes chromosomal aberration test

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D-004, a lipid extract of Roystonea regia fruits, contains oleic, lauric, palmitic and myristic acids as major components, has been shown to ameliorate experimentally-induced prostate hyperplasia and to produce antioxidant effects in rodents. This study investigated the in vitro genotoxic potential of D-004 to produce chromosomal aberrations in peripheral blood lymphocytes. Fresh suspensions of D-004 were added (500, 750 and 1000 $\mathbb{Z}g/ml$) to cultures with (microsomal liver fraction S9 mix) or without metabolic activation. Concurrent negative (Tween/water vehicle) and positive controls (cyclophosphamide 15 $\mathbb{Z}g/ml$ and mitomicyn C 0.3 $\mathbb{Z}g/ml$ in the tests with and without metabolic activation, respectively) were included. Two hundred metaphases by group were examined and the

numbers and frequencies of cells with aberrations and the mitotic index were quantified. D-004 added up to 1000µg/ ml of culture did not induce chromosomal aberrations in presence or not of S9 mix compared with negative controls and no trends with the doses were observed. Positive controls evidenced increases of the numbers and frequencies of chromosomal aberrations. Mitotic indexes were unchanged with the treatment, which indicates that D-004 does not affect cell proliferation. In conclusion, D-004 added in vitro (500-1000 @g/mL) to peripheral blood lymphocyte cultures did not show evidences of cytotoxic or genotoxic potential in the chromosomal aberrations test.

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