Safety Evaluation of Sclerotium from a Medicinal Mushroom, *Lignosus cameronensis* (Cultivar): Preclinical Toxicology Studies

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Twenty-eight days subacute toxicity studies performed in rats using sclerotial powder of *Lignosus cameronensis* cultivar was conducted to assess its safety for consumption prior to other scientific investigations on its medicinal benefits, nutraceutical or pharmaceutical application of the mushroom. The study was conducted at 250, 500, and 1000 mg/kg sclerotial powder of *L. cameronensis* cultivar (*n* = 5 for each respective dose, on both male and female groups) while control groups received only distilled water. At the end of the study (28th day), the animals were sacrificed followed by blood and organs collection for analysis. Subacute toxicity studies done shows that sclerotial powder of *L. cameronensis* cultivar at 250, 500, and 1000 mg/kg did not induce treatment related changes on behavioral patterns, gross physical appearance, growth pattern, body weight gain, values of hematological and clinical biochemical panels as well as histopathological findings on kidneys, spleen, heart, lung and liver of the experimental rats. The no-observed-adverse-effect level dose for sclerotial powder of *L. cameronensis* cultivar in 28-days sub-acute toxicity study is determined to be 1000 mg/kg.

**Keywords:** *Lignosus cameronensis*, sclerotium, toxicity, hematological, histopathological

**INTRODUCTION**

*Lignosus*, a genus of mushroom belonging to the Polyporaceae family, is mainly distributed in the tropical forest of South China, Thailand, Malaysia, Indonesia, Philippines, Papua New Guinea, Africa, and Australia (Ryvarden and Johansen, 1980; Cui et al., 2011; Tan et al., 2012). Six species of the genus (*Lignosus*) have been identified, namely *L. dimiticus*, *L. eckblattii*, *L. geotii*, *L. scottii*, *L. halinanus*, and *L. rhinocerotis* (Douang-Meli and Langer, 2003; Cui et al., 2011; Tan et al., 2012). Two new species of *Lignosus* mushrooms have been collected from the tropical forest in the state of Pahang, Malaysia. They are identified and subsequently named as *L. tigris* and *L. cameronensis* (Tan et al., 2013). These two newly discovered *Lignosus* species and *L. rhinocerotis* were collectively known as Tiger Milk mushroom prior to their discovery and have now been successfully cultivated in the laboratory (Tan et al., 2013; Lau et al., 2015). The sclerotium of *Lignosus* species are the part with medicinal value. In Peninsular Malaysia, the sclerotia of Tiger Milk mushroom are widely utilized by aborigines for the treatment of various ailments including cough, asthma, fever, food poisoning, cancer and as a general tonic.