

THE CARDIOPROTECTIVE EFFECTS OF TRAMETES VERSICOLOR POLYSACCHARIDES ON RATS WITH METABOLIC SYNDROME

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Mushrooms are untapped resource of species with both nutritive and medicinal potential, undervalued and underexplored until recent history, but now they have been increasingly utilized in conventional medicine, pharmaceutical and food industry. Among many, *Trametes versicolor* (L.:Fr.) Lloyd has been used in Traditional Chinese Medicine to improve immunity, spleen and liver function etc. Nowadays, it has been used in treatment of various types of cancer and respiratory, urinary and digestive tract infections. However its cardioprotective properties, even though are known, have been poorly investigated. Herein, we present the first data regarding cardioprotective properties of *T. versicolor* polysaccharides using *in vivo* model system. This experimental study was conducted on 36 male Wistar albino rats (12 per group, 8 weeks old, bw: 200-250 g) divided into control group, rats with metabolic syndrome (MetS) and MetS rats treated with 100 mg/kg of *T. versicolor* polysaccharides every day for 4 weeks by oral gavage. Parameters of heart function were estimated according to *Langendorff* technique. Moreover, echocardiograph analyses as well as blood pressure and heart rate were examined. Our results showed that four-week treatment with *T. versicolor* polysaccharides alleviated left ventricular hypertrophy and substantially improved *in vivo* cardiac function. Additionally, evaluating the *ex vivo* obtained results we observed remarkably improved cardiac contractility, systolic and diastolic function of MetS rats treated with *T. versicolor*. Taken together, these findings suggest that *T. versicolor* polysaccharides plays significant role in providing cardioprotection of diabetic rats but further investigation is necessary to elucidate the mechanisms which are in the basis of *T. versicolor*'s cardioprotective properties.

Keywords: *Trametes versicolor*; isolated heart; metabolic syndrome; rat.