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**Alteration in the liver metabolome of rats with metabolic syndrome after treatment with Hydroxytyrosol. A Mass Spectrometry and Nuclear Magnetic Resonance - based metabolomics study**

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**ABSTRACT**

Metabolic syndrome (MetS) represents a group of abnormalities that enhances the risk for cardiovascular disease, diabetes and stroke. The Mediterranean diet seems to be an important dietary pattern, which reduces the incidence of MetS. Hydroxytyrosol (HT) - a simple phenol found in olive oil - has received increased attention for its antioxidant activity. Recently, the European Foods Safety Authority (EFSA) claimed that dietary consumption of HT exhibits a protective role against cardiovascular disease. In this study, an experimental protocol has been setup, including isolated HT administration in a diet induced model of MetS in young Wistar rats, in order to find out whether HT has a protective effect against MetS. Rats were randomly divided into two groups nurtured by high-carbohydrate high-fat (H) (MetS inducing diet) and

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