Effect of saffron extract and crocin in serum metabolites of induced obesity rats

ABSTRACT

The effect of saffron extract (Crocus sativus L.) and its primary compound crocin was studied on an induced obesity rat model. Our study is aimed at investigating and comparing the metabolite changes in obese and obese treated with saffron extract and crocin and at improving the understanding of the therapeutic effect of saffron extract and crocin. Two different doses of saffron extracts and crocin (40 and 80 mg/kg) were incorporated in a high-fat diet (HFD) and were given for eight weeks to the obese rats. The changes in metabolite profiles of the serum were determined using proton nuclear magnetic resonance (1H-NMR). Pattern recognition by multivariate data analysis (MVDA) showed that saffron extract and crocin at 80 mg/kg was the best dosage compared to 40 mg/kg. It also showed that both treatments work in different pathways, especially concerning glucose, lipid, and creatinine metabolism. In conclusion, although the pure compound, crocin, is superior to the saffron crude extract, this finding suggested that the saffron extract can be considered as an alternative aside from crocin in treating obesity.