The effects of *Zataria multiflora* extract on *Dyrk1B* gene expression in metabolic syndrome and coronary artery disease

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**Introduction:** *Zataria multiflora*, known as Avishan-e-Shirazi in Persian, is a wild plant that grows in Central and Southern Iran. In Iran, *Zataria multiflora* is used in traditional folk remedies for its antiseptic, pain-relieving and carminative. Cardiovascular disease (CVD) is the most common cause of death in developed countries and many developing countries. Metabolic syndrome (MS) is a collection of disorders that occur together and increase the risk of developing type 2 diabetes or cardiovascular diseases (stroke or heart disease). In addition, recent studies have shown *Dyrk1b* gene involved in metabolic syndrome.

**Methods:** Mesenchymal cells were grown in Dulbecco's modified eagle medium (DMEM) supplemented with 10% fetal bovine serum, and 1% pen/strep. After differentiating of mesenchymal cells, cells were treated separately in the presence of *Zataria multiflora* extract. RNA extraction from mesenchymal cells was performed and *Dyrk1b* expression levels were examined by real-time PCR method.

**Results:** Expression of *Dyrk1b* when subjected to differentiation, increased 4.34 fold (p value=0.0062). It was also seen that *Dyrk1B* expression in differentiated cell groups treated with Zataria (6 µg/ml: thyme 1, 12 µg/ml: thyme 2) decreased gene expression compared to differentiated cell group.

**Discussion:** This study provides evidence that *Zataria multiflora* can reduce *Dyrk1B* expression and it may be used as an effective and safe therapy for treatment in MS patients.

**Biography**
Reza Naderipour a MS student in Genetics. He has done research on *Dyrk1B* gene and medicine plants. He has worked in a genetic counseling center for a while.

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