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# Thymoquinone influences the expression of genes involved in self-renewal and immunomodulatory potential of mouse bone marrow-derived mesenchymal stem cells in vitro

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## Highlights:

- Low concentrations of Thymoquinone (TQ) have no toxic effect on BM-MSCs in vitro.
- TQ induces MSCs self-renewal through up-regulation of *Sox2* and *Rex1*.
- *Sox2* may act as a hub for the effect of TQ on the BM-MSCs self-renewal.
- TQ influences the expression of *Tlr3*, *Tlr4*, *Ccl2*, and *Ccl3* in mouse BM-MSCs in vitro.
- TQ may influence the immunomodulatory function of MSCs.

## Abstract

Thymoquinone (TQ) is an active ingredient of some medicinal herbs. Despite extensive studies on **the** biological and pharmacological properties of TQ, its effect on the characteristics of stem cells remains to be clarified. Therefore, this study was aimed to investigate the effect of TQ

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