Differences in anti-inflammatory effects between two specifications of Scutellariae Radix in LPS-induced macrophages in vitro.

Chen QY[1], Wang CQ[1], Yang ZW[1], Tang Q[1], Tan HR[2], Wang X[3], Cai SQ[4].

https://www.ncbi.nlm.nih.gov/pubmed/28807225

Abstract

Scutellariae Radix (SR), the root of Scutellaria baicalensis Georgi, is used as an antipyretic drug and has been demonstrated to have anti-inflammatory activity. SR is divided into two specifications, "Ku Qin" (KQ) and "Zi Qin" (ZQ), for use against different symptoms (upper energizer heat or lower portion of the triple energizer), according to the theory of traditional Chinese medicine (TCM). However, differences in the efficacies of these two specifications have not been determined. In the present study, we aimed to characterize the differences in the anti-inflammatory activities between KQ and ZQ and to explore how their differences are manifested in lipopolysaccharide (LPS)-induced macrophages. Our results showed that, in RAW264.7 cells (a mouse macrophage cell line derived from ascites), KQ and ZQ displayed anti-inflammatory effects by inhibiting the release of nitric oxide (NO), inducible NOS (iNOS), and nuclear factor-κB (NF-κB) in a dose-dependent manner without distinction. In NR8383 cells (a rat alveolar macrophage cell line), KQ and ZQ displayed similar effects on NO, iNOS, and NF-κB as seen in RAW264.7 cells, but KQ showed a higher inhibition rate for NO and iNOS than that shown by ZQ at the same concentration. These results indicated that there were differences in efficacy between KQ and ZQ in treating lung inflammation. Our findings provided an experimental evidence supporting the different uses of KQ and ZQ in clinic, as noted in ancient herbal records.

KEYWORDS:

Anti-inflammatory activity; Efficacy differences; NR8383 cells; RAW264.7 cells; Scutellaria baicalensis; “Ku Qin”; “Zi Qin”