Mind-Saving Turmerones

THE STUDY ABSTRACT:

Anti-inflammatory effects of aromatic-turmerone through blocking of NF-κB, JNK, and p38 MAPK signaling pathways in amyloid β-stimulated microglia.

Amyloid β (Aβ) induces the production of neuroinflammatory molecules, which may contribute to the pathogenesis of numerous neurodegenerative diseases. Therefore, suppression of neuroinflammatory molecules could be developed as a therapeutic method. Aromatic (ar)-turmerone, turmeric oil isolated from Curcuma longa, has long been used in Southeast Asia as both a remedy and a food. In this study, we investigated the anti-inflammatory effects of ar-turmerone in BV2 microglial cells. Aβ-stimulated microglial cells were tested for the expression and activation of MMP-9, iNOS, and COX-2, the production of proinflammatory cytokines, chemokines, and ROS, as well as the underlying signaling pathways. Ar-turmerone significantly suppressed Aβ-induced expression and activation of MMP-9, iNOS, and COX-2, but not MMP-2. Ar-turmerone also reduced TNF-α, IL-1β, IL-6, and MCP-1 production in Aβ-stimulated microglial cells. Further, ar-turmerone markedly inhibited the production of ROS. Impaired translocation and activation of NF-κB were observed in Aβ-stimulated microglial cells exposed to ar-turmerone. Furthermore, ar-turmerone inhibited the phosphorylation and degradation of IκB-α as well as the phosphorylation of JNK and p38 MAPK. These results suggest that ar-turmerone impaired the Aβ-induced inflammatory response of microglial cells by inhibiting the NF-κB, JNK, and p38 MAPK signaling pathways. Lastly, ar-turmerone protected hippocampal HT-22 cells from indirect neuronal toxicity induced by activated microglial cells. These novel findings provide new insights into the development of ar-turmerone as a therapeutic agent for the treatment of neurodegenerative disorders.

Source: Park SY, Jin ML, Kim YH, Kim Y, Lee SJ. *Int Immunopharmacol.* 2012 Sep;14(1):13-20.

WHAT IT MEANS TO YOU:

Turmerones from turmeric essential oil are rising stars in research. These components of the oil have already been used to enhance the absorption of curcumin, the primary compound from turmeric, but have strong anti-inflammatory and anticancer properties of their own. In fact, studies are figuring out that turmerones are as potent as curcuminoids.

One of the turmerones in particular, aromatic turmerone, (better known as "ar-turmerone") may help preserve cognition. This study found that ar-turmerone suppressed amyloid-beta, which is considered responsible for the plaques and tangles in the brain that stop neural connections and ultimately lead to Alzheimer's disease. It also inhibited inflammatory cytokines that begin the spiral of cognitive decline in the brain.

If you have a family history of susceptibility to Alzheimer's Disease or dementia, incorporating turmerones from turmeric essential oil into your daily regimen may be one of the best—and simplest—ways to keep your mind clear for years to come.