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Ligusticum wallichii elevates the proliferation of hypoxia-stimulated human microglia through promoting HIF-1α-mediated MET expression

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During the hypoxia-involved neonatal stroke, microglial cells take part in endogenous defense mechanisms to prevent the brain injury. Thus, the reasonable therapeutic intervention in this disease may be the increase of microglia proliferation. In our study, we primarily found that *Ligusticum wallichii* enhances the proliferation of hypoxia-stimulated human microglia by increasing the cell cycle. Furthermore, *Ligusticum wallichii* differentially regulated the expression of a lot of genes, in which *MET* gene, encoding a cell surface receptor tyrosine kinase for recognizing hepatocyte growth factor ligand, acts an important down-stream effective molecule for *Ligusticum wallichii* in treatment with hypoxia-induced human microglia by using RNAi technique. Moreover, *Ligusticum wallichii* enhances the binding of HIF-1α to the promoter of *MET* gene in hypoxia-treated human microglia, providing the rational explanation why *Ligusticum wallichii* plus hypoxia-administrated human microglia have highest *MET* expression. Collectively, we have identified a potential mechanism by which *MET* regulated by HIF-1α contributes to *Ligusticum wallichii*-mediated increase of proliferation of hypoxia-induced human microglia. Thus *Ligusticum wallichii* and targeting *MET* should be considered as two potential strategies for enhancing the hypoxia-stimulated human microglia.

Biography

Chun Ming Jiang has completed his MM from Wenzhou Medical University and MD studies from Nanjing Medical University of Medicine. He is the Attending Doctor and Senior Researcher of the Affiliated Hangzhou Hospital of Nanjing Medical University. He has published more than 10 papers in peer-reviewed journals and has been serving as an Editorial Board Member of repute.

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