Yu-Syuan Lin, Metabolomics 2016, 6:2(Suppl)
http://dx.doi.org/10.4172/2153-0769.C1.032

Ferrous glycinate reverses epithelial mesenchymal transition and drug resistance to BCNU by suppression of hypoxia-induced factor in human U87 glioma cells

Yu-Syuan Lin
Taipei Medical University, Taiwan

Hypoxia-inducible factor (HIF)-1α has been shown to play important roles in regulating cancer metastasis, invasion and drug resistant. In present study, we showed that treatment of human U87 glioma cells with ferrous glycinate reduced HIF-1α accumulation, which is dependent upon prolyl hydroxylase activity. Suppression of HIF-1α by ferrous glycinate reduced MMP-2 and MMP-9 secretion in the media. Ferrous glycinate decreased cell invasiveness, which was associated with decreased expression of transcription factors Twist and Nestin, and the mesenchymal marker, Vimentin. Consistently, ferrous glycinate increased expression of differentiation marker, the glial acidic fibrillary protein. Taken together, these suggest that ferrous glycinate may reverse the epithelial-mesenchymal transition (EMT). In addition, treatment with ferrous glycinate reversed drug resistance to 1,3-bis(2-chloroethyl)-1-nitrosourea, a second line chemotherapeutic agent for malignant gliomas. Given ferrous glycinate may reverse the EMT and drug resistance in malignant gliomas cells, these data suggest that ferrous glycinate may be used in the treatment of malignant gliomas.

Biography

Yu-Syuan Lin is a graduate student at the School of Department of Medical Laboratory Sciences and Biotechnology, College of Medical Science and Technology, Taipei Medical University, Taipei, Taiwan.

m609103003@tmu.edu.tw

Notes: