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# Copper catalyzed arylsulfenylation of thiohydantoin using elemental sulfur and arylhalide: C-S coupling

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The generation and applications of carbon-sulfur (C-S) bonds in numerous natural and medicinal products have led to the development of efficient techniques for C-S bond creation. Thiohydantoin is a privileged scaffold for biological activities, which has aroused our interest in developing the C-S bond formation by clubbing it with another nucleus. Herein, we have developed a C-S bond between thiohydantoin and phenyl nucleus with elemental sulfur and aryl halides using copper(I) iodide as catalyst. Optimization has been carried out using various catalyst loadings, base, temperature and solvent. The reaction is highly effective with broad functional group tolerance and affords yield in good to better range.

**Keywords**: Thiohydantoin, Elemental sulfur, Copper(I) iodide, C-S-C bond formation, Arylsulfenylation