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**Short communication**

## Digoxin increases hydrogen sulfide concentrations in brain, heart and kidney tissues in mice

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**Abstract:**

The interest in digoxin has recently increased due to the expanding knowledge regarding endogenous cardiac glycosides and a potential oncological application of this drug. Hydrogen sulfide (H<sub>2</sub>S), a crucial co-modulator of various physiological processes, is involved in the pathophysiology of different disorders and may be useful in the treatment of some diseases. The interaction between cardiac glycosides and H<sub>2</sub>S is unknown. The aim of the study is to assess the influence of digoxin on H<sub>2</sub>S tissue concentrations in mouse brain, heart and kidney. Thirty male BALB/c mice were given intraperitoneal injections of digoxin at 0.5 mg/kg body weight (b.w.) per day (group D1, n = 10) or 1 mg/kg b.w. per day (group D2, n = 10). The control group (n = 10) received physiological saline. Free H<sub>2</sub>S tissue concentrations were measured *via* the Siegel spectrophotometric modified method. There was a significant, progressive increase in the H<sub>2</sub>S concentrations for both the low and high digoxin doses in the brain (7.7% and 8.5%, respectively), heart (by 6.0% and 22.1%, respectively) and kidney (by 7.6% and 13.0%, respectively). This report shows that digoxin administration is followed by an increase in the free H<sub>2</sub>S concentrations in mouse brain, heart and kidney tissues.

**Key words:**

hydrogen sulfide, cardiac glycosides, digoxin, heart, mice

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