

# **Species and sex differences in the oxidative metabolism of cimetidine and metiamide.**

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**Abstract:**

The oxidative metabolism of cimetidine (CM) and metiamide (MA) was investigated in seven animal species (one amphibian, two reptiles, one avian and three mammals). Both qualitative and quantitative differences in oxidative metabolism were observed for the two drugs in the different species.

C-Oxidation resulting in the formation of 5-hydroxymethyl cimetidine was not detected in toads and lizards, while it was low in tortoise and rats compared to pigeon, cats and rabbits. In the metabolic conversion of CM, the urinary excretion of the sulphoxide and 5-hydroxymethyl CM was significantly different in rats of both sexes treated at two dose levels whereas for MA only the excretion of the sulphoxide metabolite was significantly different ( $P < 0.01$ ).

S- and C- Oxidation of both drugs were found to be dependent on the compound, animal species and their sex.

**Keywords:** Metabolism/ animals/ mammals/ oxidation/ metabolic conversion/ sulphoxide/ metabolite

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