

## *Research Letter*

# **Kinetics and Mechanism of Paracetamol Oxidation by Chromium(VI) in Absence and Presence of Manganese(II) and Sodiumdodecyl Sulphate**

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The kinetics of paracetamol oxidation are first order each in [paracetamol] and [HClO<sub>4</sub>]. The kinetic study shows that the oxidation proceeds in two steps. The effects of anionic micelles of sodiumdodecyl sulphate (SDS) and complexing agents (ethylenediamine tetraacetic acid (EDTA) and 2,2'-bipyridyl (bpy)) were also studied. Fast kinetic spectrophotometric method has been described for the determination of paracetamol. The method is based on the catalytic effect of manganese(II) on the oxidation of paracetamol by chromium(VI) in the presence of HClO<sub>4</sub> (= 0.23 mol dm<sup>-3</sup>). Optimum reaction time is 4 to 6 minutes at a temperature of 30°C. The addition of manganese(II) ions largely decreased the absorbance of chromium(VI) at 350 nm. This reaction can be utilized for the determination of paracetamol in drugs.

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