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Evaluation of a novel rodenticide: welfare assessment of fatal methaemoglobinaemia in adult rats (*Rattus norvegicus*)

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Abstract

*This study assessed the welfare of rats (*Rattus norvegicus*) poisoned with a lethal dose of the methaemoglobin (MetHb) inducing compound para-aminosalicylic acid (PAS). Twenty rats were orally gavaged with either PAS (treated) or the vehicle only (control). Spontaneous and evoked behaviours were recorded and blood samples collected post mortem for analysis of MetHb%. Female and male rats received a mean (\pm SEM) dose of 263 (\pm 3) and 199 (\pm 6) mg PAS kg⁻¹, respectively. Mean (\pm SEM) time to death was 67 (\pm 16) and 354 (\pm 71) min for female and male rats, respectively. Control animals did not show any signs of intoxication. The time to death from methaemoglobinaemia in rats was significantly shorter than that reported for anticoagulants and there were no obvious signs of distress or pain.*

Keywords: animal welfare, death, hypoxaemia, methaemoglobin (MetHb), methaemoglobinaemia, rat