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Pharmacokinetics of Oxytetracycline in the Giant Danio (*Devario aequipinnatus*) Following Bath Immersion

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Abstract

Oxytetracycline is one of three antimicrobials approved by the United States Food and Drug Administration (FDA) for use in fish aquaculture, but there are few bath pharmacokinetic studies for its use in fish. The objective of this study is to provide data-driven recommendations for the use of oxytetracycline as a bath therapy in the giant danio (*Devario aequipinnatus*). The pilot study was conducted from 25 mg/L to 400 mg/L concentration of oxytetracycline in bath. Based on initial pilot study data, a oxytetracycline bath concentration of 400 mg/L was used for the final study. At this dose, a maximum plasma concentration (C_{max}) for oxytetracycline of 1.31 $\mu\text{g/mL}$ was achieved with a half-life of excretion of 13.21 hr. Water quality parameters for the study included a hardness of <17.1 mg/dL, a calcium level of 5.07 mg/L, and a magnesium level

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