
ANALYSIS OF ANTIMICROBIAL PEPTIDE EFFICACY AGAINST CHYTRIDIOMYCOSIS FROM SKIN SECRETIONS OF COLUMBIA SPOTTED FROGS (*LITHOBATES LUTEIVENTRIS*)

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Amphibian populations have been declining in size in recent years. A major contributing factor to this decline is the fungal disease chytridiomycosis. Chytridiomycosis occurs when the zoospores of the fungus *Batrachochytrium dendrobatidis* (Bd) imbed into amphibian skin and disrupt the homeostatic functions the skin provides, leading to death in most amphibians. Amphibian skin can produce antimicrobial peptides (AMPs) that inhibit Bd infection. The goal of this experiment was to determine whether or not the amount and type of AMPs a frog produces affects its ability to defend against chytridiomycosis. Columbia spotted frogs were chosen as a model organism because they vary in susceptibility to the disease, yet their populations have not been drastically affected by the fungus. AMP samples were collected from ten Columbia spotted frogs at four different locations in western Montana (40 samples total). The AMP concentration for each sample was determined using a micro BCS assay. The minimal inhibitory concentrations (MICs) were determined using 96 well plate growth inhibition assays. In the assay a set of ten AMP dilutions from each frog (ranging from 100-1000 $\mu\text{g}/\text{mL}$) were used. The Bd was grown in each dilution and growth was measured after four days as change in absorbance measured at 492 nm. Infection load of frogs was determined using Quantitative PCR analysis. From the data collected, there was no statistically significant correlation between the MIC observed and infection load.