

METABOLOMICS HAS GREAT POTENTIAL FOR CLINICAL AND NUTRITIONAL CARE AND RESEARCH WITH EXOTIC ANIMALS

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ABSTRACT

This essay explores the potential of metabolomics for exotic animal research in a zoological setting. Metabolomics is a suite of analytical tools aimed at gaining a holistic understanding of animal metabolism without prior knowledge of the compounds to be measured. These metabolic fingerprints can be used to define normal metabolism for an unstudied species, to characterize the metabolic deviation of diseased animals from the normal state over time, to identify biomarker compounds that best capture such deviations, and to measure the metabolic impact of clinical and nutritional interventions. Two approaches, nuclear magnetic resonance (NMR) and mass spectrometry (MS) provide large amounts of complimentary pure and applied biological data. Metabolomic methods hold great potential for researchers, clinicians and nutritionists studying exotic and aquatic animals because they can produce a huge data return on research effort, and because they don't require much *a priori* knowledge of the animals' metabolism, which is so often the case in zoological settings.

