Stephanie Chaousis

BSc (Hons)

steph.chaousis@griffithuni.edu.au

orcid.org/0000-0002-6885-6150

https://www.researchgate.net/profile/Stephanie_Chaousis

https://scholar.google.com.au/citations?user=7gHgcwcAAAAJ&hl=en&oi=ao

Summary

Exposure of wildlife to anthropogenic chemical pollutants can cause adverse effects to the individual leading to a reduced reproductive output ultimately resulting in population decline. Population impacts due to contaminant exposure are especially devastating for already threatened species of wildlife that are currently affected by other human impacts such as climate change. Due to these compounding pressures, by the time the effects of contaminant exposure on the individual become apparent at the population level, it may be too late to prevent severe population decline. In order to manage the adverse impacts of contaminant exposure on threatened wildlife, we need to be able to detect these effects as early and accurately as possible. Common effects of contaminant exposure, such as endocrine disruption and immune suppression, first manifest at the molecular level. Therefore, detection of these molecular changes in wild individuals provides the first evidence of adverse effects and potentially allows time to manage negative population-level outcomes. Molecular changes that have been directly linked to contaminant exposure are called biomarkers of effect that can be used to confidently determine exposure and effects of contaminants in an individuaL. However, currently, the molecular effects of contaminants on wildlife are not well established and making the link between contaminant exposure and potential biomarkers is challenging due to the numerous other factors that can cause changes at this level. The most direct method for identifying biomarkers of effect, in vivo experiments, is not possible on threatened wildlife due to ethical and practical limitations. This project aims to address this issue by using cell lines cultured from wildlife in order to link molecular changes at the protein level with contaminant exposure. Resulting biomarker candidates will be verified in non-destructive samples collected from wild individuals with the hopes of enhancing conservation efforts for threatened wildlife.

Research Expertise

- Cell culture
- Proteomics
- Bioassays