**Title of Project:** Effect of preparation methods on the bioactivity of traditional medicines

**(FOR Code/s):** 1104

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**Location of Project:** Campbelltown

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**Project Background**

Ethnopharmacology studies how people from various cultures have traditionally treated diseases, often with the use of plants. This may potentially provide clues to an alternate understanding of the treatment of disease and for the novel treatment of problem conditions. The method of preparation of the treatment may affect the bioactivity of the preparation which may or may not be retained in the modern sample preparation techniques [1, 2].

Metabolomic analysis involves the simultaneous identification and quantitation of all small molecules in a given sample. This is usually done with NMR and/or LC-MS analysis followed by data reduction techniques and multivariate data analysis. The main objective is to identify chemical differences between different samples. Using this technique it is possible to link the bioactivity of one sample with the compound responsible for the observed activity. [3]

**Aim of Study:**

Study the chemistry of a selection of medicinal plants and assess the influence that the preparation method can have on the final formulation and bioactivity.

**Methods:**

As small selection of plants, used in traditional medicine in Australia and China, will be tested in a range of bioassays including for antibacterial, anticancer and anti-HIV activity. A range of preparation and extraction techniques will be applied and compared. Metabolomic analysis will be conducted on each of these plants and the bioactive compounds responsible for the activity will be identified.

**Ethics Application Requirements:**

Appropriate Biosafety approval will be sought.

**Key References:**

