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98892 *Tasmannia lanceolata* extracts: anti-Proteus activity and potential for the treatment and prevention of rheumatoid arthritis

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Introduction. A wide variety of herbal medicines are used in indigenous Australian traditional medicinal systems to treat RA and inflammation. *Tasmannia lanceolata* (Tasmanian pepper) has received recent attention as a potential medicine due to its high antioxidant content (Cock 2013) and antibacterial activity (Winnett et al 2014).

Aims The current study was undertaken to test the ability of a panel of Tasmanian pepper extracts for the ability to block the microbial trigger of RA and to use metabolomics fingerprint analysis to detect anti-inflammatory compounds.

Methods. Tasmanian pepper berry and leaf were extracted with solvents of varying polarity and investigated for the ability to inhibit the growth of the bacterial trigger of RA (*P. mirabilis*). The extracts were tested for toxicity in the *Artemia nauplii* bioassay. The most potent inhibitor of *P. mirabilis* growth was further analysed by RP-HPLC coupled to high accuracy TOF mass spectroscopy.

Results. The Tasmanian pepper berry extracts were determined to be the most effective inhibitors of *P. mirabilis* growth, with MIC values as low as 11 and 126 µg/ml for the methanolic and aqueous extracts respectively. Subsequent analysis of the *T. lanceolata* fruit extracts by RP-HPLC coupled to high resolution TOF mass spectroscopy detected the resveratrol glycoside piceid and 2 combretastatin stilbenes in both *T. lanceolata* fruit extracts. All extracts were also shown to be non-toxic in the *Artemia nauplii* bioassay.

Discussion. The low toxicity of these extracts and their inhibitory bioactivity against *Proteus* spp. indicate their potential in blocking the onset of rheumatoid arthritis.

Cock IE (2013) *Pharmacog Commn* 3(4) pp 1-13.

Winnett et al (2014) *Pharmacog Commn* 4(1) pp. 42-52.