

**Anti-Proteus Activity of Some South African Medicinal Plants:  
Their Potential for the Treatment and Prevention of Rheumatoid  
Arthritis**

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### **Anti-proteus activity of some South African medicinal plants: their potential for the treatment and prevention of rheumatoid arthritis**

Rheumatoid Arthritis (RA) is a chronic inflammatory disorder of the joints which afflicts 0.5 - 1 % of the world's population, with approximately three times as many women affected as men. The causes of RA are poorly understood although it is generally accepted that it is an autoimmune disorder triggered by microbial infection (particularly by *Proteus* spp.). Whilst there is currently no known cure for RA, a wide variety of herbal remedies are used in traditional African medicine to treat (RA) and inflammation. Thirty four extracts from 13 South African plant species with a history of ethnobotanical usage in the treatment of inflammation were investigated for their ability to control two microbial triggers for RA (*P. mirabilis* and *P. vulgaris*). The *Artemia nauplii* bioassay was used to screen the extracts for toxicity.

Twenty nine of the extracts (85.3 %) inhibited the growth of *P. mirabilis* and 23 of them tested (67.7 %) inhibited the growth of *P. vulgaris*. Methanol and water extracts of *Carpobrotus edulis*, *Lippia javanica*, *Pelargonium viridiflorum*, *Ptaeroxylon obliquum*, *Syzygium cordatum* leaf and bark, *Terminalia pruinoides*, *Terminalia sericea*, *Warburgia salutaris* bark and an aqueous extract of *W. salutaris* leaf were effective *Proteus* inhibitors, with MIC values < 2000 µg/ml. The most potent extracts were examined by RP-HPLC and UV-Vis spectroscopy for the presence of resveratrol. Only extracts from *T. pruinoides* and *T. sericea* contained resveratrol, indicating it was not responsible for the anti-*Proteus* properties reported here. All extracts with *Proteus* inhibitory activity were also either non-toxic, or of low toxicity in the *Artemia nauplii* bioassay. The low toxicity of these extracts and their inhibitory bioactivity against *Proteus* spp. indicate their potential for blocking the onset of rheumatoid arthritis.

