

Antifungal and Antibacterial Activities of *Araucaria araucana* (Mol.)

K. Koch Heartwood Lignans

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Five lignans (secoisolariciresinol, pinoresinol, eudesmin, lariciresinol, and lariciresinol-4-methyl ether) were isolated from an MeOH extract from *Araucaria araucana* (Mol.) K. Koch wood for the first time in this species and their structures determined with spectroscopic methods. The antimicrobial activities of these compounds were determined for the bacteria *Citrobacter* sp., *Bacillus subtilis*, *Escherichia coli*, *Micrococcus luteus*, *Staphylococcus aureus*, and *Pseudomonas aeruginosa*, and for the white rooting and staining fungi *Mucor miehei*, *Paecilomyces variotii*, *Ceratocystis pilifera*, *Trametes versicolor*, and *Penicillium notatum*, and in addition, the MeOH extract was evaluated against *Aspergillus niger*, *Candida albicans*, *Fusarium moniliforme*, *F. sporotrichum* and *Trichophyton mentagrophytes*. The most sensitive bacteria against pinoresinol were the Gram-positive. However, secoisolariciresinol exhibited a significant antifungal activity on fungi of white rooting and wood staining and this compound completely inhibited the mycelial growth of *T. versicolor* and *C. pilifera* at 300 and 400 µg per disc, respectively, whereas pinoresinol showed a moderate inhibitory activity. On the other hand, the MeOH extract had the highest activity against rooting and staining and pathogenic fungi as well as *T. versicolor*, *Fusarium* spp. and *Trichophyton mentagrophytes*, inhibiting completely the growth at 400 µg per disc.

Key words: *Araucaria araucana*, Lignans, Antibacterial Activity