



Antimycobacterial polyacetylenes from *Levisticum officinale*

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Titre Antimycobacterial polyacetylenes from *Levisticum officinale*
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No conflicts of interest concerning financial matters or personal relationships exist between the authors and those who might bias this work. The present work is in part included the PhD thesis of A. Schinkovitz (University of Graz) but has not been published elsewhere previously. The dichloromethane extract of the roots of *Levisticum officinale* L. (Apiaceae) exhibited significant antimycobacterial activity against *Mycobacterium fortuitum* and *Mycobacterium aurum* in a microtiter plate dilution assay and was further analysed following a bioassay-guided fractionation strategy. 3(R)-Falcarinol (3(R)-(-)-1,9-heptadecadien-4,6-diin-3-ol) and 3(R)-8(S)-falcarindiol [3(R)-8(S)-(+)-1,9-heptadecadien-4,6-diin-3,8-diol] could be identified as the active components in this extract. The minimal inhibitory concentration (MIC) of 3(R)-falcarinol against *M. fortuitum* and *M. aurum* was 16.4 microM while that of 3(R)-8(S)-falcarindiol was 30.7 microM against *M. fortuitum* and 61.4 microm against *M. aurum*, respectively. Previously, 3(R),8(R)-dehydrofalcarindiol was isolated from *Artemisia monosperma* and surprisingly this polyacetylene exhibited no antimycobacterial activity at 128 microg/mL. This indicates that the terminal methyl group is vital for retention of antimycobacterial activity. Reference antibiotics ethambutol and isoniazid exhibited an activity of 115.5 microM and 14.6 microM against *M. fortuitum*, and 3.4 microM and 29.2 microM against *M. aurum*, respectively.

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