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**HPLC-MS/MS analysis of willow bark extracts contained in pharmaceutical preparations**

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**Abstract**

Preparations containing willow bark extract are popular herbal remedies, but they are mostly standardised with respect to only one compound (usually salicin). RP-HPLC using a C18-column eluted with water:methanol:tetrahydrofuran and coupled to electrospray triple-quadrupole MS and MS/MS was used for the characterisation of dried extracts of Salix spp. and for the identification of their constituents. Comparison with reference substances led to the identification of 13 compounds (saligenin, salicylic acid, salicin, isosalicin, picein, salidroside, triandrin, salicoylsalicin, salicortin, isosalipurposide, salipurposide, naringenin-7-O-glucoside and tremulacin). Two pharmaceutical preparations containing willow bark extract, used in clinical trials and labelled Salix daphnoides and S. purpurea x daphnoides extracts, were compared using the described method and exhibited several clear differences, the most prominent of which was the possible presence of picein in the former preparation. The described method may be utilised for the characterisation of herbal medicines in order to ensure comparability of medication in further clinical trials.

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