COMPOSITION OF LICHEN SUBSTANCES ANALYZED BY HIGH PERFORMANCE LIQUID CHROMATOGRAPHY

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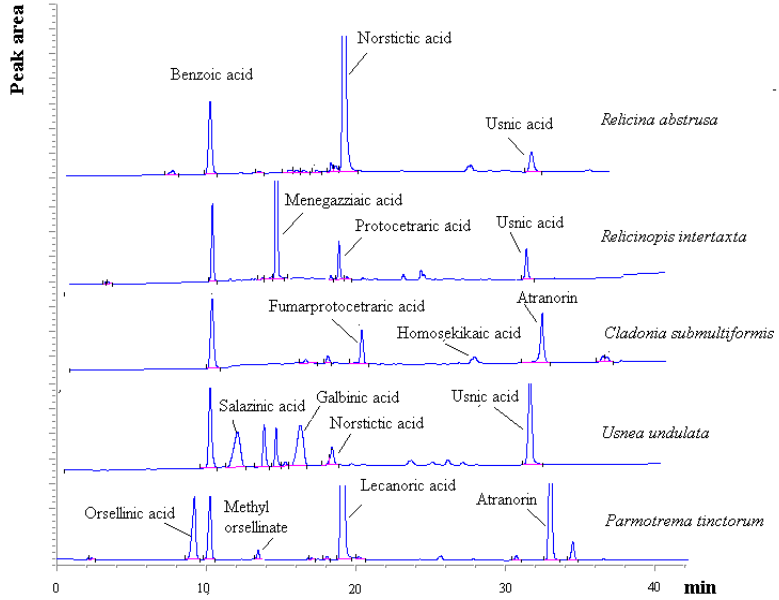
Abstract: Five species of lichens from Khao Yai National Park were analyzed for their secondary metabolic products or generally known as lichen substances. The analysis was performed by HPLC under the following condition, which was developed specifically for lichens. Hypersil C18 column (250 mm x 4.6 mm, 5 μm) under gradient elution and UV detection at λ 254 nm were used. Two mobile phases were methanol as solvent B and 1% phosphoric acid as solvent A, the run start with 30% B at flow rate 0.7 ml/min, solvent B was increased to 70% within 14 min, then up to 100 % in 30 min. Lichen samples were ground and extracted by using acetone. Benzoic acid was used as internal standards and using peak areas to determine their amounts. The quantities of known lichen substances were calculated by normalization method. The results showed the highest amount of lichen substances in these lichens were norstictic acid 95.9% in *Relicina abstrusa*, menegazziaic acid 85.7% in *Relicinopis intertaxta*, homosekikaic acid 89.6 % in *Cladonia submultiformis*, galbinic acid 47.6% in *Usnea undulata* and Lecanoric acid 86.1 % in *Parmotrema tinctorum.* Moreover the HPLC chromatograms exhibited different pattern for each lichen species. Therefore, HPLC chromatogram should be used as a fingerprint to confirm morphological identification, which frequently have problems. More importantly, further studies on this aspect are essential to link the production of lichen substances and related genes.



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