

Phytochemical Investigation and Antioxidant Activity of *L. decidua* for Nutraceutical Application

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In the last few years the increasing of nutraceuticals and food supplements trade has led to a research of new raw material.

Larix decidua is a common specie of central Europe and Alps traditionally used for respiratory affection and for topical treatment. Nowadays this tree is mainly used in wood industry and the bark is a waste material, so working from a sustainable point of view, we decided to study the bark of larch. The principal compound is the arabinogalactan, approved as source of dietary fiber and for the treatment of flu and cold infections. However, in literature there are few data regarding the phytochemical composition of bark, different aqueous and ethanolic extracts were prepared and their composition were studied using a multitechnical approach.

The bark is rich in proanthocyanidins and with an HPLC-fluorimetric method we have evaluated the content of PAC. Using HPLC-DAD and HPLC-MS we have characterized the flavonoids and phenols content and the main compound found is larixinol, a spiro-biflavonoid. In vitro free radical scavenging activities of the extracts were assessed against DPPH; the extract composition after radical reaction was monitored by HPLC-MS.

PAC and flavonoids have a several recognized health benefit for their antioxidant activity so the chemical composition of *L. decidua* allows considering it as a potential new raw material for food supplements.

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