

NEW SOURCES OF CONDENSED TANNINS - INVESTIGATION OF BRANCHES OF SAME SHRUBS SPECIES THROUGH HPTLC ANALYSIS

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Abstract. *R. canina L., H. rhamnoides L. and P. spinosa L. species are used traditionally as medicinal plants due to phytotherapeutical and nutritional potential of fruits. The aim of this study is to identify and quantify the catechin and epicatechin in branches of these species, using qualitative (HPTLC) and quantitative (HPTLC densitometry) methods. HPTLC fingerprinting of crude methanolic extracts showed specific peaks, with different R_f values, corresponding to catechin (at R_f 0.46) evidenced in branches of all three species and epicatechin (at R_f 0.43) highlighted only in samples of P. spinosa. The quantitative evaluation by HPTLC densitometry indicated the amount of catechin in branches of R. canina (0.17% g/g in dried plant material), H. rhamnoides (0.10% g/g in dried plant material) and P. spinosa (0.25% g/g in dried plant material) and the amount of epicatechin in branches of P. spinosa (0.22% g/g in dried plant material). These vegetal species can be considered a new source of catechins.*

Keywords: dog rose, sea buckthorn, blackthorn, condensed tannins, densitometry

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1. Introduction

Condensed tannins are a group of polyphenolic compounds belonging to flavonoid class (flavan 3-ols) present in high concentration in a variety of medicinal plants. They are recognized to possess antibacterial [1,2], antifungal [3], antioxidant [4-7], antihypercholesterolemic [8,9], antimutagenic [10], antiviral [11] and anticarcinogenic activities [6,12], their effect consisting in improving human health by preventing various diseases. Catechins have received considerable attention due to their various biological activities, in particular by their effects on arteriosclerosis [13] and their scavenger ability of reactive oxygen species [14,15].

The condensed tannins occur almost universally in ferns and gymnosperms and are widespread among the angiosperms, especially in trees and shrubs. Regarding the localization of condensed tannins, they are found distributed throughout the organs of the plant; are accumulated in larger amounts in bark, branches, leaves, flowers, where they are found free or combined with proteins, alkaloids, mucilages [16-21].

Rosa canina L. (Rosaceae), *Hippophae rhamnoides L.* (Elaeagnaceae) and *Prunus spinosa L.* (Rosaceae) species are used traditionally as medicinal plants due
