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Advances and
Perspectives**

**Abstracts
Book**

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HPLC analysis of catechins in *Quercus Rubra* and *Parthenocissus Quinquefolia* raw materials

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Aim: to determine the qualitative composition and quantitative content of catechins in *Quercus rubra* L. and *Parthenocissus quinquefolia* (L.) Planch. raw materials for detection of new promising raw material source for the development of phytomedicines and dietary supplements.

Methodology: *Q. rubra* leaves and annual shoots and *P. quinquefolia* leaves and fruits used for investigation were harvested in Kyiv region, Ukraine, in September 2021. Determination of the qualitative composition and quantitative content of catechins was performed by high performance liquid chromatography (HPLC) using an Agilent Technologies 1200 liquid chromatograph (USA) with a diode-matrix detector with signal registration at 280 and 365 nm and fixation of absorption spectra in the range of 210–700 nm [1].

Results: using HPLC, 4 catechins in the *Q. rubra* leaves and annual shoots and *P. quinquefolia* leaves and fruits were identified, namely: catechin, epicatechin, epicatechin gallate, galocatechin. The results of chromatographic separation are given in table 1.

Table 1
The content of catechins in *Q. rubra* and *P. quinquefolia* raw materials

No	Substance	Quantitative content, mg/100 g in terms of absolutely dry raw materials		
		<i>Q. rubra</i> leaves and shoots	<i>P. quinquefolia</i> leaves	<i>P. quinquefolia</i> fruits
1	Catechin	2.28	2.85	3.16
2	Epicatechin	1.54	3.34	3.89
3	Epicatechin gallate	25.45	1.32	2.29
4	Galocatechin	1.67	3.08	1.05

Analysis of the results shows that content of catechins in the studied samples of raw materials of *P. quinquefolia* is similar and rather small. It is worth noting that the highest of quantitative content among catechins is epicatechin gallate (25.45 mg/100g) in the *Q. rubra* leaves and shoots. Epicatechin gallate is characterized by

pronounced antioxidant, anti-inflammatory properties, established its anticancer activity and potentially it also can be used in treatment of Parkinson's disease [2, 3].

Conclusions: the qualitative composition and the quantitative content of catechins have been determined in *Q. rubra* leaves and annual shoots and *P. quinquefolia* leaves and fruits. The results obtained can be used for standardization of *Q. rubra* leaves and shoots and it is advisable to further investigate its antioxidant and anti-inflammatory activity.

References

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3. Siddique Y, Jyoti S, Naz F (2014) *Journal of Dietary Supplements* 11(2): 121-30.