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**PHENOLIC PROFILES OF HORSE CHESTNUT (*AESCULUS HIPPOCASTANUM* L.)  
SEED EXTRACTS OBTAINED BY ULTRASOUND-ASSISTED EXTRACTION**

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The horse chestnut (*Aesculus hippocastanum* L.) is a deciduous tree widely cultivated in urban areas with temperate climate across the Northern hemisphere [1]. Among the scientific community, this species is known mainly for the steroidal glycosides or polycyclic terpenes resulting from the secondary metabolism, among which aescin is the main active component and responsible for most of its medicinal properties [2,3]. While the bark has been used to treat dermatitis, the leaves and seeds are used due to their anti-inflammatory effects [3]. In fact, horse chestnut seed is an important raw material in the pharmaceutical industry. On the other hand, bioactive phenolic compounds such as quercetin and kaempferol glycosides can also be found in this raw material [4]. Therefore, this study was carried out to characterize the phenolic composition of the horse chestnut seed kernel, shell, and pellicle. The different parts of the seed were hand-separated with a knife, lyophilized, and ground to a fine powder. Hydroethanolic extracts were then obtained by ultrasound-assisted extraction, using 20% ethanol and 40 min sonication at 400 W (at 20 kHz frequency). The phenolic profiles were characterized by high-performance liquid chromatography coupled with diode array detector and electrospray ionization tandem mass spectrometry (HPLC-DAD-ESI/MS<sup>n</sup>). Quantification was made based on calibration curves contracted with commercial standards of the most similar phenolic compounds. The horse chestnut seed kernel was particularly rich in flavonoids, among which kaempferol-*O*-pentoside-*O*-hexoside-*O*-hexoside and isorhamnetin-*O*-pentoside-*O*-di-hexoside were predominant compounds. In turn, the seed pellicle extract contained mostly flavan-3-ols ( $\beta$ -type (epi)catechin derivatives). The shell also contained flavan-3-ols and flavonoids, where (-)-epicatechin and kaempferol-*O*-deoxyhexoside-*O*-deoxyhexoside were the phenolic compounds with the highest abundance in each group, respectively. In general, the pellicle was the seed part with the highest content of phenolic compounds, followed by the kernel. Thus, this study showed that the different parts of the inedible horse chestnut seeds have different phenolic profiles in qualitative and quantitative terms. Further analyses to assess the *in vitro* antioxidant, anti-inflammatory, antimicrobial, and cytotoxic activities of the obtained seed extracts are underway.

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