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Time dependent degradation of polyphenols from thermal processed berries and their *in vitro* antiproliferative effects against melanoma

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Berries are an important source of bioactive compounds, which have showed to have positive health benefits. Those compounds are namely phytochemicals and among them, anthocyanins contribute in high amount to the nutritional and potential health value. Because of berry seasonal availability and also due to their rapid degradation, people found multiple ways to preserve them. The most common options are: freezing, jellies or jams. The last one is also the most popular way of conservation in Romanian household. The most common fruits used as primary ingredient in jams are: berries, plums, cherries. Starting from this we thought what has all this common? The answer was: that they share many bioactive compounds is polyphenols such as anthocyanins, flavonoids or phenolic acids. Their stability is a continuous challenge for food industry. There are also multiple published data providing that they are sensitive to light, pH or high temperature. All those vectors are present during jam preparation. In this context we started a study regarding phytochemical composition and bioactive compounds degradation after jam preparation. We also monitored their degradation during storage time and their *in vitro* antiproliferative potential. However, to the best of our knowledge, no report exists on the effect of processing on the phenolic compounds content of homemade jams from chokeberry, elderberry, blackcurrant or blackthorn. The obtained results revealed that processed and stored in time, the bioactive compounds from berries jam are degraded, they still exert antioxidant and antiproliferative potential. Prior to LC-MS analysis, polyphenolic compounds were identified as: flavonoids (anthocyanins, flavanols) and non-flavonoid (hydroxycinnamic acids (HCA) and hydroxybenzoic acids (HBA). The most significant decrease was observed for HCA comparing to other classes of the quantified compounds. This variation is expected due to variations in constituents and phenolic types among different analyzed berries.

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