

## Ion-chromatography-high resolution mass spectrometry (IC-HRMS) for the detection of glyphosate and its metabolites in food of animal origin

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**G**lyphosate and glufosinate are broad spectrum herbicides, widely used in agriculture and in inhabited or industrialised areas, whereas aminomethylphosphonic acid is a degradation product of glyphosate. In 2015, the International Agency for Research on Cancer reported that glyphosate is a probable carcinogenic. In 2017, however a scientific opinion of the European Chemicals Agency concluded that glyphosate is not proven to be carcinogenic, mutagenic or to have negative effects on reproduction. Nevertheless, aminomethylphosphonic acid was not considered. Due to their chemical-physical

characteristics these molecules present difficulties that have not yet allowed routine monitoring to be carried out. For these reasons, we developed and validated a simple and versatile liquid extraction before the IC-HRMS analysis of three different complex matrices: honey, bass fish and bovine muscle. Among the satisfactory validation parameters, the LOQs in the range of 4.30-9.26 ng g<sup>-1</sup> demonstrated high method sensitivity, compared to the few works present in literature.

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