Title: **Analysis of arsenic species in food by HPLC-ICP-MS: samples selection for the preparation of reference materials**

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Arsenic is an element considered toxic although not all of its species are dangerous. While the exposition to inorganic arsenic may present symptoms of disease, the arsenobetaine is harmless.

One of the ways in which humans are exposed to inorganic arsenic is through food. The organisms that live in the aquatic environment are some of the most likely to contain it, for this reason is necessary create effective analytical methods and reference materials that allow legislation on these foods.

In previous investigations it has been established that the most effective method for seafood speciation is the HPLC-ICP-MS coupling, since other possible methods give overquantification.

The task of this research is to make the selection of a reference material through the HPLC-ICP-MS coupling method and carry out the preparation of it. To achieve these objectives four different samples of seafood (clams and razor-clams) were selected, prepared and the yields of each stage were established. Subsequently the samples were characterized by the aforementioned method quantifying total arsenic and its species. Finally, it seems that clams meet all the features evaluated to be a suitable candidate for reference material.