Title: **Characterization of the dissolved organic matter in the Besos river aquifer by HPLC and molecular fluorescence: influence of the water treatment systems.**

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Water is essential for all living beings on earth. From all the water present, only about 0.04% of it can be consumed by the human being. Such low proportion has led us to the search of new purification processes to extract the organic matter contained in it, given the potential harm it can cause to our organisms.

The growing interest for the extraction of this organic matter from water has led scientists to the study and characterization of its different naturest, classifying it mainly as humic and non-humic substances.

In order to identify the nature of the matter present in water, methods such as molecular fluorescence, obtaining an excitation/emission matrix (EEM), or the high-performance size exclusion chromatography (HPSEC), coupled to different types of detectors, like absorbance (DAD), fluorescence (FLD), carbon (DOC) or nitrogen (OCN); have been used together with quimiometric methods with parallel factor analysis methodology (PARAFAC).

This project is contained within the framework of a greater project about the purification of the water in Besòs River's aquifer. It is mainly focused in the analysis of water samples treated with different sorts of sorbents, in specifically, the efficiency of the extraction of organic matter from each of these materials has been studied, as well as they nature, by EEM and HPSEC.

Finally, the differences between the techniques used to identify the fractions have been studied, being them complementary to each other.

Keywords: EEM, HPSEC, PARAFAC, water purification, dissolved organin matter, Besos river.