

# **Triacylglycerol Compositional Profile Characterization in Food Fat Extracts, that Contains Olive Oil, using HPLC Coupling to a Charged Aerosol Detector (CAD)**

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The Corona charged aerosol detector (CAD) is a new type of universal detector designed for coupling to any liquid chromatograph. It was introduced in the market by ESA Biosciences in 2004. CAD is based on the nebulization of the column eluent with nitrogen stream which is dried to eliminate the drops of mobile phase, producing an aerosol that contains the particles of the analytes. A secondary stream of nitrogen becomes positively charged by corona effect. The charge is transferred to the opposing stream of analyte particles. The total charge acquired by the analyte particles is transferred to a collector and measure by a high sensitive electrometer generating a signal that is proportional to the concentration of the particles charged (analytes) in the aerosol.

The CAD has showed some excellent abilities to detect common lipids and it could be used for quantitative analysis of lipid classes and lipid molecular species.

In this communication, a (RP)HPLC-CAD method, to separate and characterize triacylglycerols (TAGs), will be presented. The method was performed on a C18 column in a HPLC HP 1100, using a gradient mobile phase of acetonitrile and hexane/isopropanol (50/50 v/v). The total time of the chromatographic analysis was 40 min.

This method was applied to characterize fat extracts of different types of commercially foodstuffs which contain olive oils as valuable ingredient. The food samples used in the analysis were bakery, cold meat and potato chips products. The fat was extracted from the samples using a Pressurized Liquid Extractor (PLE) by applying an in-home developed extraction method.

The complete description of the analytical method, the results and discussion on the TAGs characterization will be showed in the definitive communication. The method could be easy adopted by any food quality control laboratories.