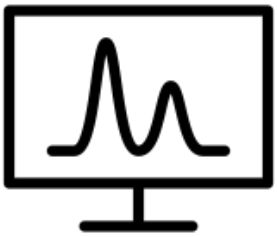
STEMMING EDU PRESENTS

LIQUID CHROMATOGRAPHY-MASS SPECTRONMETRY

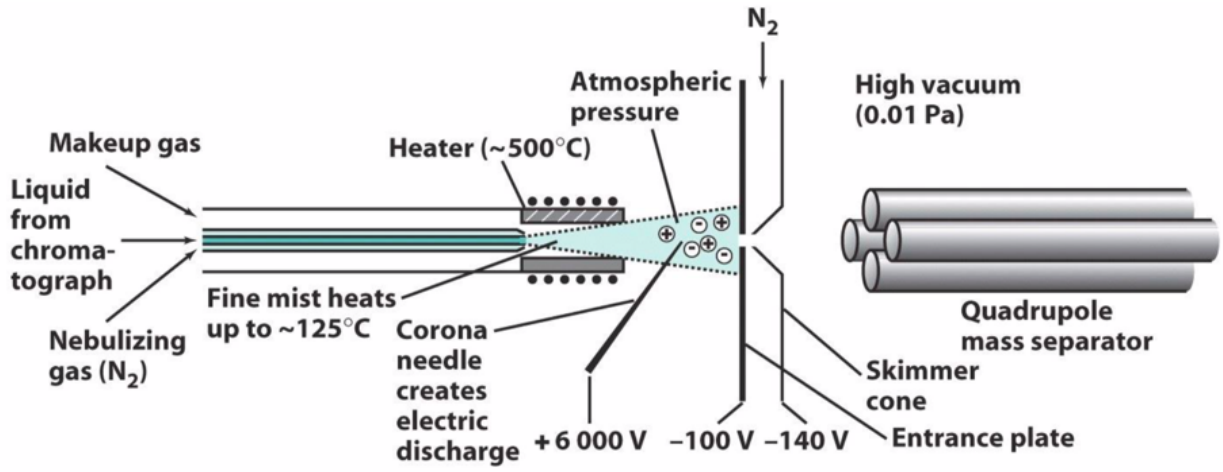
WHAT IS THE LIQUID CHROMATOGRAPHY-MASS SPECTROMETRY?

Liquid chromatography-mass spectrometry (LC-MS) is a combined analytical technique of chromatography and spectrometry used to both separate mixtures of different compounds and identify the molecules. Liquid chromatography separates the mobile phase from the stationary phase molecules. Mass spectrometry determines the structural identity of the compound through mass-to-charge ratio. Using both the techniques, LC-MS is used to analyze different compounds in chemistry.



HOW DOES IT WORK?

Liquid chromatography separates the solutes based on polarity. Mass spectrometry converts the sample components into fast gaseous ions and separates these molecules based on mass-to-charge ratios. As the liquid from chromatograph enters the technology as in the picture below, the sample is heated up to gas and is analyzed mass-to-charge ratios.



WHY IS IT IMPORTANT?

LC-MS is commonly used to find the pharmacokinetics of drugs. LC-MS is used to determine the clearance of small molecules in the patients' body organs. Before introduction of drugs into market, small molecule substances are analyzed using LC-MS to and the half-life and determine the paths taken to be metabolized, distributed and excreted. During drug development stage, LC-MS is used to generate fast analysis of drug weights and structural identification. The technology allows for faster screening of drugs to be ready for the market.