XIV Congreso Nacional de Biotecnología y Bioingeniería

AMBIENT IONIZATION TECHNIQUES: TOWARDS *in vivo* MONITORING OF MOLECULES

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Palabras clave: biomolecules, mass spectrometry, ambient ionization

The characterization of molecules using mass spectrometry (MS) is nowadays one of the central analytical methods in biological research and biotechnology. However, even if so-called “soft” ionization techniques such as MALDI and (D/E)ESI have been developed, the monitoring of molecules in vivo is still fraught with various problems.

A recently developed ionization method using Low Temperature Plasma (LTP) for molecule charging circumvents existing obstacles, since it works at ambient conditions and without organic solvents. Additionally, the technical requirements and related costs are relatively low.

Up to now, two LTP-MS devices are known to be functional, one in the USA and one in China. A third prototype has been constructed at the CINVESTAV, Unidad Irapuato, Gto., Mexico. Unlike the other devices, the CINVESTAV prototype will be optimized and employed for biological in vivo studies.

The presentation will cover basics of ambient ionization techniques and recent advances in the development of a LTP-MS device in our lab.

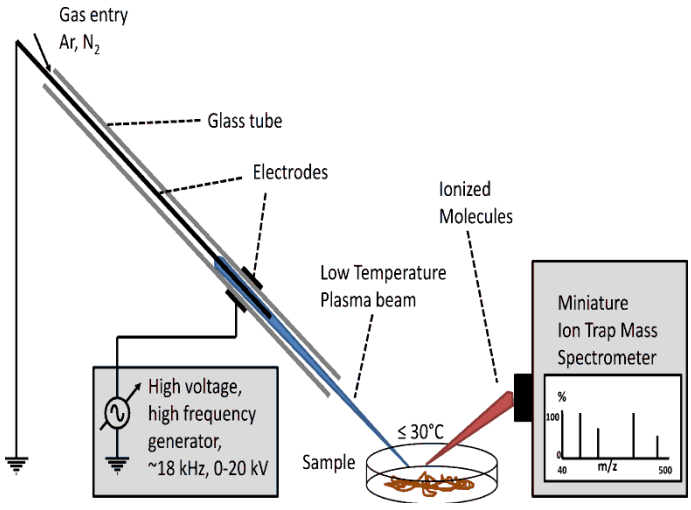

Fig. 1. Technical design of a LTP-MS.

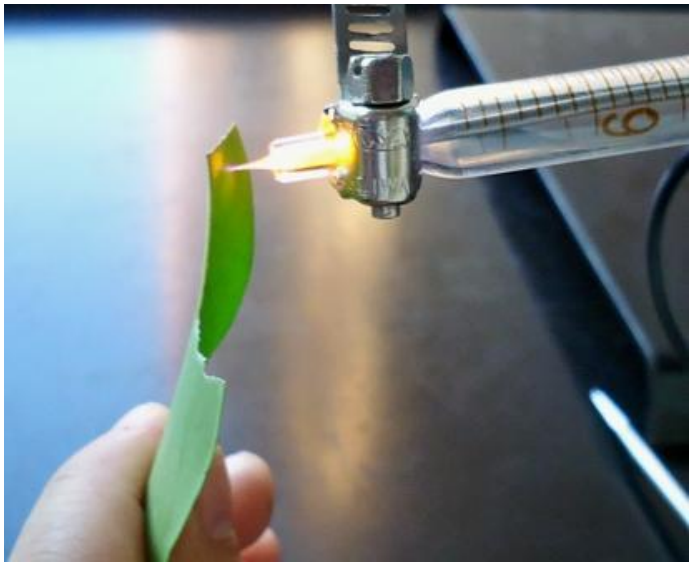

Fig. 2. Cold plasma jet applied to a plant leaf.

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