

## Preliminary Study of the Location of the Her2 Proteins by Molecular Imaging (MALDI-IMS) in a Histological Section of the Breast

Laura Cantero<sup>1\*</sup>, Luz Valero<sup>1</sup>, Manuel Mateo Sánchez Del Pino<sup>1</sup> and Laia Bernet<sup>2</sup>

<sup>1</sup>Department of Proteomics, University of Valencia, Spain

<sup>2</sup>Department of Anatomic Pathology, La Ribera Hospital, Valencia, Spain

\*Corresponding author: Laura Cantero, Department of Proteomics, University of Valencia, 46100-Spain, Tel: +34963543235; E-mail: laura.cantero@uv.es

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### Clinical Image

MALDI Imaging (MALDI-IMS) is a promising molecular imaging technique in biomedical research that allows the detection and localization of markers such as proteins, peptides and metabolites directly on histological sections using mass spectrometry [1].

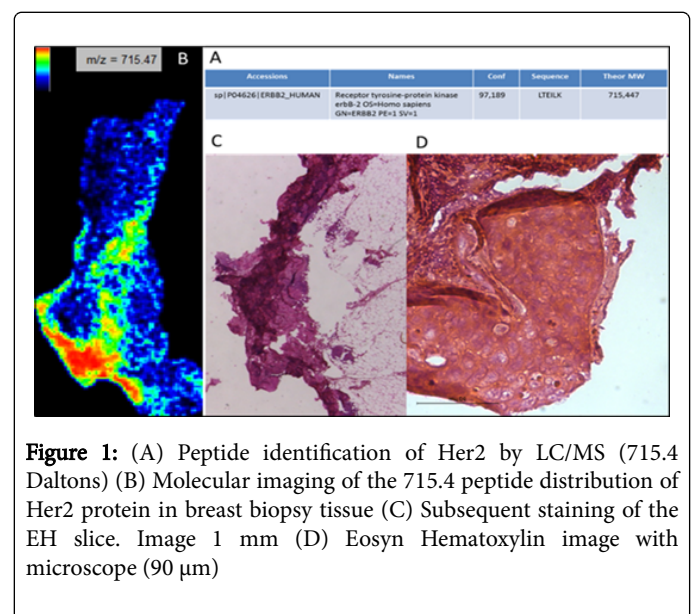
This work shows the molecular image (mass spectrometry, MALDI-TOF) of a biopsied breast tissue of a patient. In the histological section can be appreciated the spatial distribution of one of the tryptic peptides of the Her2 marker protein in breast cancer [2].

The image shows the tissue distribution of the peptide LTEILK of the Her2 proteins.

The peptide ion (715.4 Daltons) had previously been detected in the sample by mass spectrometry analysis with liquid chromatography (LC/MS).

Different colors indicate the abundance of the peptide, from red (the most abundant) to dark blue (the less) (Figure 1).

Subsequent staining of the slice with eosin/hematoxylin indicates that the peptide signal is in a cell proliferation zone in the tissue.



**Figure 1:** (A) Peptide identification of Her2 by LC/MS (715.4 Daltons) (B) Molecular imaging of the 715.4 peptide distribution of Her2 protein in breast biopsy tissue (C) Subsequent staining of the EH slice. Image 1 mm (D) Eosyn Hematoxylin image with microscope (90 μm)

### References

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