Technology offer

CIC biomaGUNE
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Matrix-free LDI-MS sample plates

Surface Assisted Laser Desorption Ionization – Mass Spectrometry

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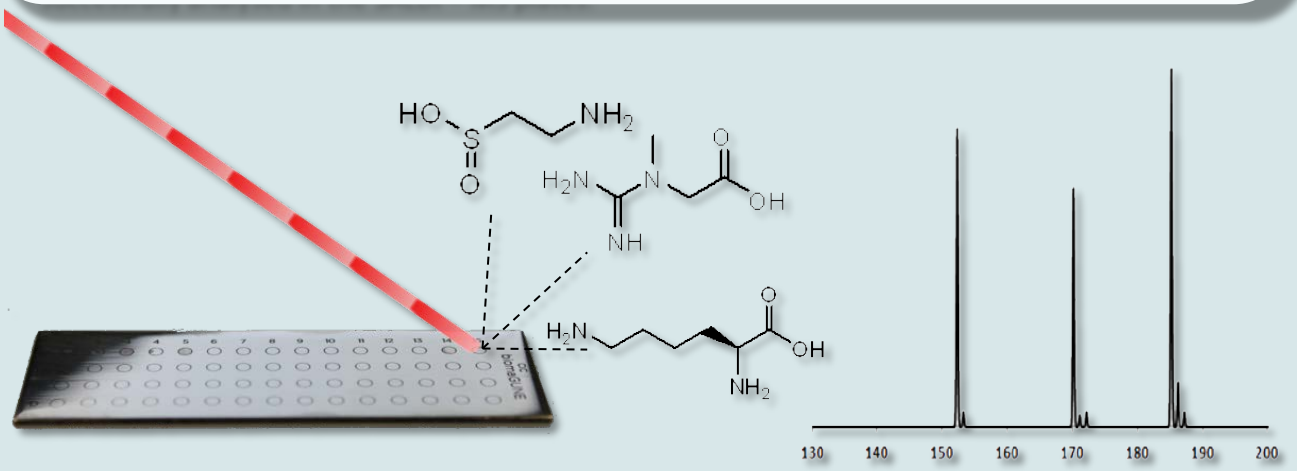
Excellent performance sample plates for matrix-free laser desorption ionization – mass spectrometry (LDI - MS) produced from inexpensive weathering steel. Different analyte classes including serum metabolites, lactose, milk lipids, antibody-bound glycosides and brain tissue samples have been successfully analysed in the SALDI – MS plates.



Background:

Matrix assisted LDI – MS is a very important analytical tool due to excellent robustness, speed, resolution and buffer tolerance. However, issues associated to matrix interference, sample preparation and matrix – sample compatibility have been strong motivation to seek matrix-free methods in LDI – MS analysis in the last decades. Current alternatives for matrix-free LDI – MS are too sophisticated, costly or present low stability under ambient conditions or limitations in the choice of analytes. Therefore, inexpensive, easy to handle sample plates that produce low analyte fragmentation and work for a broad spectra of compounds remained to be developed.

Technology:

Sample plates for Surface Assisted Laser Desorption Ionization - Mass Spectrometry (SALDI-MS) built from weathered steel with a nanostructured surface and high UV absorption. Plates produced according to the invention have shown improved performance and reduced production costs compared to available alternatives.

Example applications:

SALDI - MS analysis of small molecules, serum metabolites, lipids and glycans.

Imaging mass spectrometry, including low mass metabolites (label-free histology method for visualizing distribution of molecules on tissue slides in single experiments).

References:
•Etxebarria, J. et al. Nanostructured weathering steel for matrix-free laser desorption ionisation mass spectrometry and imaging of metabolites, drugs and complex glycans. Analyst, 2014, 139, 2873.

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