

High Throughput Nanoelectrospray Ionization Mass Spectrometry

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Categories:

- Chemistry and Chemical Analysis
- Pharmaceuticals

Keywords:

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- Mass Spectrometry
- Pharmaceuticals
- Proteins

Mass spectrometry has many applications including: pharmaceutical development, environmental sampling analysis, and investigative forensics. One growing application of mass spectrometry is high throughput screening is bio-assaying in pharmaceuticals. The lengthy sample pre-treatment in traditional mass spectrometry methods creates a challenging bottleneck for its users.

Researchers at Purdue University have developed an automated high throughput design for nanoelectrospray ionization mass spectrometry (nESI-MS) sample pre-treatment. The pre-treatment time has been reduced from 1 minute in traditional LC-MS to 1.4 seconds for each sample.. This design requires a minimum of 100 nL and can be loaded into a 384 well plate for multiplexed detection. The technology has been used to quantify peptide BACE1 at concentrations as low as 300 nM.

Advantages:

- Faster screening of mass spectrometry samples
- Small volume samples

Potential Applications:

- High throughput mass spectrometry
- Chemical structure analysis
- Bio-assay in pharmaceuticals

People:

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