DESCRIPTION

The first systematic summary of biophysical mass spectrometry techniques

Recent advances in mass spectrometry (MS) have pushed the frontiers of analytical chemistry into the biophysical laboratory. As a result, the biophysical community's acceptance of MS-based methods, used to study protein higher-order structure and dynamics, has accelerated the expansion of biophysical MS.

Despite this growing trend, until now no single text has presented the full array of MS-based experimental techniques and strategies for biophysics. Mass Spectrometry in Biophysics expertly closes this gap in the literature.

Covering the theoretical background and technical aspects of each method, this much-needed reference offers an unparalleled overview of the current state of biophysical MS. Mass Spectrometry in Biophysics begins with a helpful discussion of general biophysical concepts and MS-related techniques. Subsequent chapters address:

* Modern spectrometric hardware

* High-order structure and dynamics as probed by various MS-based methods

* Techniques used to study structure and behavior of non-native protein states that become populated under denaturing conditions

* Kinetic aspects of protein folding and enzyme catalysis

* MS-based methods used to extract quantitative information on protein-ligand interactions
* Relation of MS-based techniques to other experimental tools

* Biomolecular properties in the gas phase

Fully referenced and containing a helpful appendix on the physics of electrospray mass spectrometry, Mass Spectrometry in Biophysics also offers a compelling look at the current challenges facing biomolecular MS and the potential applications that will likely shape its future.

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