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(54) Title: HIGH THROUGHPUT MASS SPECTROMETRY

(57) Abstract

Apparatus and methods for high throughput mass spectrometry are provided. The methods involve sample preparation in an off–line parallel purification system. Such methods include but are not limited to the use of an appropriate buffer when generating samples or the use of a solid support for tagged components. The samples prepared in this way do not then need to be column separated. The apparatus provided includes a cell growth plate for growing cells and generating products and/or reactants, an off–line parallel purification system, a mass spectrometer, and an automatic sampler that transports samples and injects them into the mass spectrometer of the apparatus. The methods and apparatus described are used, for example, in screening enzyme reaction pathways.