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(54) Title: PROTEOMIC ANALYSIS

(57) Abstract: The present invention provides methods for analyzing proteomes, as cells or lysates. The analysis is based on the use of probes that have specificity to the active form of proteins, particularly enzymes and receptors. The probes can be identified in different ways. In accordance with the present invention, a method is provided for generating and screening compound libraries that are used for the identification of lead molecules, and for the parallel identification of their biological targets. By appending specific functionalities and/or groups to one or more binding moieties, the reactive functionalities gain binding affinity and specificity for particular proteins and classes of proteins. Such libraries of candidate compounds, referred to herein as activity-based probes, or ABPs, are used to screen for one or more desired biological activities or target proteins.