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(54) Title: COMPOSITIONS AND METHODS FOR PREDICTION OF DRUG SENSITIVITY, RESISTANCE, AND DISEASE PROGRESSION

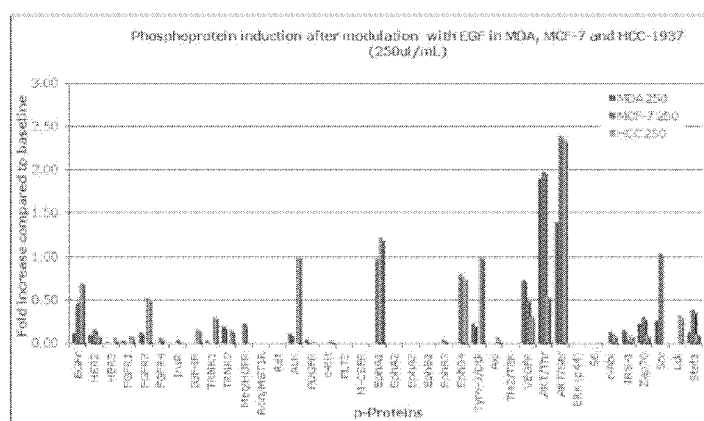


Fig. 1

(57) **Abstract:** The present invention is based on the discovery that functional stratification and/or signaling profiles can be used for diagnosing disease status, determining drug resistance or sensitivity of cancer cells, monitoring a disease or responsiveness to a therapeutic agent, and/or predicting a therapeutic outcome for a subject. Provided herein are assays for diagnosis and/or prognosis of diseases in patients. Also provided are compositions and methods that evaluate the resistance or sensitivity of diseases to targeted therapeutic agents prior to initiation of the therapeutic regimen and to monitor the therapeutic effects of the therapeutic regimen. Also provided are methods for determining the difference between a basal level or state of a molecule in a sample and the level or state of the molecule after stimulation of a portion of the live sample with a modulator ex vivo, wherein the difference is expressed as a value which is indicative of the presence, absence or risk of having a disease. The methods of the invention may also be used for predicting the effect of an agent on the disease and monitoring the course of a subject's therapy.