Cell Lines, Microarrays, Drugs and Disease: Trying to Predict Response to Chemotherapy.

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Abstract:
Over the past few years, microarray experiments have supplied much information about the disregulation of biological pathways associated with various types of cancer. Many studies focus on identifying subgroups of patients with particularly aggressive forms of disease, so that we know who to treat. Given the treatment options available today, this means trying to predict which chemotherapeutic regimens will be most effective. We can try to predict response to chemo with microarrays by defining signatures of drug sensitivity. Recent studies have suggested how this approach might work using a widely-used panel of cell lines, the NCI60, to assemble the response signatures for several drugs. Unfortunately, ambiguities associated with analyzing the data have made these results difficult to reproduce. We will describe how we have analyzed the data, the implications of the ambiguities for the clinical findings, and methods for making such analyses more reproducible, so that progress can be made more steadily.