# New Markers Which Predict Tumor Sensitivity for Existing Therapies

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## Technology description

Technical Summary
Heat shock proteins (HSPs) are a class of chaperone proteins that are up- regulated in response to elevated temperature and other environmental stresses such as ultraviolet light, nutrient deprivation, and oxygen deprivation. The heat shock protein 90 (HSP90) has significant roles in maintaining transformation properties of cancer cells and in maintaining survival and growth potential of cancer cells. The biological role of HSP90 is mediated by its ability to interact with client proteins such as EGFR, RAF-1, Her2, Bcr-Abl, and STK11/LKB1 (serine/thronine kinase 11/LKB1). Due to its impact on multiple major hallmarks of tumorigenesis and development, HSP90 has emerged as a promising target for cancer therapeutic development. Through experimentation and database mining, researchers at Emory identified molecular markers which are predictive of tumor sensitivity to Hsp90 inhibitors. This invention describes novel predictive molecular markers to determine the sensitivity of tumor cells to Hsp90 inhibitors. This technology will provide a new treatment regime for a wide range of devastating cancers.

## Application area

This technology offers novel predictive molecular markers for identifying cancer patient populations with enhanced sensitivity to Heat shock protein (Hsp90) targeting therapies and a potential therapeutic target to enhance the therapeutic effect of chemotherapeutics and radiotherapeutics.

## Advantages

Novel personalized treatment for cancer patients, through the identification of particular patient populations, which are more likely to benefit from treatment with Hsp90 inhibitors.
HSP90 drugs represent a novel class of therapeutic agents that exhibit a broad range of anti-tumor activity: lung, cervical, breast, intestinal, testicular, pancreatic, and skin cancer.

## Institution

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