Diagnostic and treatment for chronic and acute phase myeloid leukemia

Meet the Inventors

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Value Proposition

While cancer therapies have increased survival for many tumor types, the reality is that 50-60% of cancer patients will die from the disease. This highlights a need for the continued search for targeted therapies and early diagnostics to improve interventions. Chronic and acute phase myeloid leukemias represent two tumor types with differing growth rates and differentiation states, which suggests that methods are needed in order to identify efficacious therapies for these different phases of leukemia and to ultimately successfully treat them.

Technology

This invention harnesses gene expression data comparing CML and AML tissues and control tissues, noting that the proteins Numb and Msi are highly predictive of tyrosine kinase inhibitor efficacy at killing the cell, as well as a useful prognostic tool for determining probability of advancement to a more aggressive phenotype. This is due to increased Numb and decreased Msi correlating with increased tumor cell proliferation, decreased differentiation, and a more aggressive phenotype. Thus, the invention could be a highly innovative and useful diagnostic, prognostic, and therapeutic tool for treatment of CML and AML.

Advantages

- This invention is a novel predictor of tyrosine kinase inhibitor efficacy, the standard of care in treatment of AML and CML
- This invention can also predict tumor progression to a more aggressive form
- Unique identification of proteins Numb and Msi as a marker of tumor aggressiveness in AML and CML, potentially critical proteins in modulating the aggressiveness of AML and CML tumor types