



Molecular Signatures for Statin Sensitivity in Multiple Myeloma Patients

Overview of Technology:

There is substantial evidence that the statin family of drugs, presently used in the control of hypercholesterolemia, is able to trigger an anti-proliferative response of tumor cells. This anti-cancer activity has been evaluated in preclinical studies showing that some cells undergo growth arrest or cell death (apoptosis); epidemiological studies showing that some patients taking statins have a lower risk of cancer incidence; and clinical trials showing that some cancer patients show a tumor response.

The UHN group, led by Dr. Linda Penn has recently presented data on a cohort of 17 Multiple Myeloma (MM) cell lines and identified that approximately half underwent apoptosis in response to statin therapy (called statin-sensitive) and half were less responsive (called statin-insensitive). Another group has independently conducted basal microarray expression studies on over 40 MM cell lines, including the 17 that were characterized by the UHN group for their statin sensitivity. The UHN researchers were thus able to show that there are molecular differences between the sensitive and insensitive MM cell lines that the researchers have developed into predictive signatures: they have developed 4, 5 and 20 gene signatures with high predictive values for statin therapy sensitivity in MM.

Although a relatively uncommon cancer, the global MM market was \$1,8183M in 2009 and is expected to grow at a CAGR of 5.2% over the next six years to reach \$2,600M by 2016. The reason that MM is one of the most profitable niche tumor markets is due to the high volume usage of drug therapies. Myeloma by its very nature is a disseminated tumor, present in a number of bones and with malignant cells in the blood. This eliminates surgery and radiotherapy as effective treatment options, leaving only drug therapy as a systemic treatment. With a relatively low 5-year survival rate (35%) new and better targeted therapies are essential. It is estimated that personalized medicine will greatly increase the survival rate and decrease costs, as many MM patients who currently undergo multiple lines of drug therapy, would be able to identify the appropriate therapy at diagnosis.

Related Publications:

Publication and additional information available under a CDA as has yet to be released.

Patents:

US61/301,304 - Filed 4 February 2010

Inventors:

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