**Therapy for Treatment of Myelodysplastic Syndrome (MDS)**

**Brief Description of Technology**
IRAK1 is a drugable target for treatment of MDS, and IRAK1/BCL2 inhibitors synergistically co-treat MDS.

**Technology ID**
2013-0502 (Complementary Technology: 2014-0307)

**Technology Overview**
MDS results from expansion of defective hematopoietic stem cells. There is a need to develop targeted therapies capable of eliminating the defective MDS clones. Dr. Starczynowski has identified that IRAK1, an immune modulating kinase, is overexpressed and hyperactivated in MDS. MDS-propagating clones treated with a small-molecule IRAK1 inhibitor exhibited impaired expansion and increased apoptosis, which coincides with TRAF6/NF-κB inhibition. This indicates that IRAK1 is necessary for survival, proliferation, and NF-κB activation in MDS clones. Dr. Starczynowski has shown that treating with an IRAK1 inhibitor or co-treating with IRAK1 and BCL2 inhibitors eliminate MDS clones with more selectivity and efficiency.

**Applications**
- Therapeutic target for treatment of MDS
- Combination therapy for treatment of MDS

**Advantages**
- Increased efficiency of treatment
- Increased selectivity of treatment

**Market Overview**
Approximately 12,000 people in the United States are diagnosed with MDS each year. The average annual cost of treating MDS symptoms is estimated at more than $63,000 per patient.

**Investigator Overview**
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