Cincinnati Children's | Innovation and Commercialization

Hematology

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

BUSINESS OPPORTUNITY

Exclusive License

TECHNOLOGY TYPE

Therapeutic Target

PATENT INFORMATION

Nationalized

LEARN MORE

CTC Business Development

partnering@cchmc.org

1.513.636.4285

innovation.cincinnatichildrens.org

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

Daniel Starczynowski, PhD, Division of Experimental Hematology and Cancer Biology