Title: Anti 14-3-3 epsilon monoclonal antibody (WU Ref: 012324)

Technology: Irradiation of cancer cells elicits a stress response resulting in the transport of stored proteins to the surface of cancer cells. These inducible surface proteins can be exploited as targets for antibody based immunotherapy to destroy cancer cells. The inventors discovered that 14-3-3 epsilon protein is one of the proteins transported to the surface of cancer cells upon irradiation. 14-3-3 proteins are a family of conserved regulatory molecules expressed in all eukaryotic cells and have the ability to bind a multitude of functionally diverse signaling proteins, including kinases, phosphatases, and transmembrane receptors. This protein is transported to the surface of cancer cells upon irradiation.

The technology relates to a murine mAb that selectively binds to the 14-3-3 epsilon protein expressed on the surface of tumor cells with increased intensity upon irradiation. The anti-14-3-3 epsilon mAb is a promising cancer immunotherapeutic agent.

Advantages:
- Novel composition for targeting and killing a variety of cancer cells
- Antibody demonstrates high affinity and specificity to irradiated human lung cancer cells

Stage of Development:
- Preclinical studies underway - in vivo efficacy testing in mouse lung cancer model
- Antibody and it’s epitope have been sequenced and efforts are underway to humanize it
- Clinical studies in lung cancer will be undertaken in the near future

Field:
- Therapeutic
- Diagnostic/Imaging

Indications:
- Oncology

Patent Information:
- U.S. patent pending

Lead Inventor: Dr. Dennis Hallahan, Professor & Chair, Radiation Oncology
- Elizabeth H. and James S. McDonnell Distinguished Professor in Medicine
- Founder of GenVec, Inc.

Expertise: Identification of new molecular targets, antibodies, peptides for cancer therapy, drug development to improve cancer response to radiation therapy while minimizing effects on normal tissues.