

“Novel Therapeutic Marker and Drug Target for Cancer Treatment” VCU #14-64

Applications

- Cancer therapy
- Therapeutic marker for the induction of apoptosis
- Exists in a multitude of cancer cell lines including breast and head and neck

Advantages

- Novel target for cancer treatment
- Can be used for individualistic therapy design
- Companion diagnostic
- Low toxicity in healthy cells

Inventors

[Hisashi Harada, Ph.D.](#)
Wataru Nakajima, Ph.D.
Mark Hicks
Yamileth Chin
June Young Lee

Contact

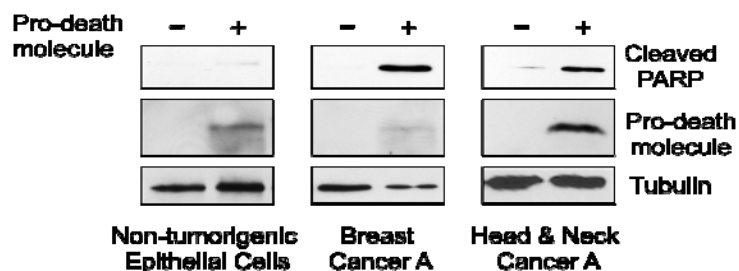
Magdalena K. Morgan, Ph.D.
Licensing Associate
mkmorgan@vcu.edu
Direct 804-827-6095

Market Need

Cancer is the second most common cause of death in the United States with many new diagnoses each year. Despite all of the advances in cancer therapies, more research is necessary to improve the diagnoses and treatment of several types of cancer. The molecular mechanism used to induce cell death by the most commonly utilized anti-cancer drugs for solid tumors remains elusive.

Technology Summary

Dr. Harada and his collaborators have discovered that over-expression of a pro-death molecule has differential binding affinity to a pro-survival molecule. A strong bond between the two molecules leads to cell death, while a weak bond does not. Thus, the bond between the two molecules is a novel target for cancer drug development as well as a companion diagnostic. Strengthening this bond can lead to increased cell death in cancer cells. In normal, healthy cells the expression of the pro-death molecule is at low levels thus targeting this molecule in cancer cells would cause little to no toxicity in healthy tissue.



Overexpression of a pro-death molecule induces apoptosis in breast or head & neck cancer cells, but not in non-tumorigenic cells. Flag-tagged pro-death molecule cDNA was transiently transfected, and the expression of this pro-death molecule and cleaved-PARP (indicative of apoptosis) were monitored by Western blots.

Technology Status

In vitro data available.

Patent Pending: U.S. and foreign rights available.

This technology is available for licensing to industry for further development and commercialization.