



VCU

VIRGINIA COMMONWEALTH UNIVERSITY

“Mouse model for analyzing the hepatocarcinogenic function of Astrocyte elevated gene-1 (AEG-1)”

Applications

- *In vivo* study of AEG-1's effect on tumors of the liver
- Analysis of the efficacy of therapies designed to target AEG-1 in tumors
- Further research into AEG-1's involvement in hepatocarcinogenesis

Advantages

- Selective expression of human AEG-1 in mouse liver
- Mimics aggressive phenotypes in humans to aid development of new therapies

Inventors

[Devanand Sarkar, Ph.D.](#)
[Paul Fisher, Ph.D.](#)

Contact

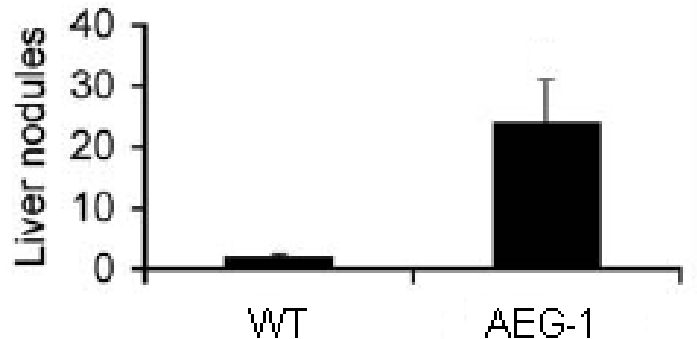
Magdalena K. Morgan, Ph.D.
Director of Licensing
mkmorgan@vcu.edu
Direct 804-827-6095

Market Need

The Astrocyte elevated gene-1 (AEG-1) has been extensively documented to associate with tumor pathogenesis and has been identified as a potential marker for a multitude of cancers. Overexpression of AEG-1 has been shown in tumors afflicting a myriad of organs and is indicative of very aggressive cancers. Of cancers, AEG-1 is expressed in 90% of all hepatocarcinomas. While human HCC cell lines expressing AEG-1 exist, they are only effective to study the mediation of gene and protein expression *in vitro*. Currently, there is no means for studying AEG-1 expression and its effects *in vivo*.

Technology Summary

VCU researchers have developed a transgenic mouse selectively expressing the human AEG-1 oncogene in the liver. Upon induction, AEG-1 expression is shown to induce significant tumor formation in the liver. In a comparison study, all seventeen AEG-1 expressing mice exhibited numerous tumors of increased size, while only two of eleven wild type (WT) mice showed very small nodules. Therefore, researchers are able to selectively express human AEG-1 in a manner similar to the aggressive phenotypes exhibited in human patients. This new line of transgenic mice provides a novel model for studying the effects of AEG-1 expression *in vivo* as well as study the effects of new therapies designed to treat hepatocarcinomas.



Technology Status

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