

UOK 268 CELL LINE FOR HEREDITARY LEIOMYOMATOSIS AND RENAL CELL CARCINOMA

SUMMARY

The National Cancer Institute's Urologic Oncology Branch seeks parties to co-develop the UOK 262 immortalized cell line as research tool to study aggressive hereditary leiomyomatosis and renal cell carcinoma (HLRCC)-associated recurring kidney cancer.

REFERENCE NUMBER

E-254-2010

PRODUCT TYPE

- Research Materials

KEYWORDS

- Research tool
- Cell line
- cancer
- Kidney
- HLRCC

COLLABORATION OPPORTUNITY

This invention is available for licensing.

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DESCRIPTION OF TECHNOLOGY

HLRCC is an extremely aggressive cancer syndrome with no effective treatment regimen and currently no cure. The progress of identifying HLRCC treatments and cures has likely been hindered due to the lack of an HLRCC model for studying the cancer syndrome and for screening therapeutic drug candidates.

This technology describes the UOK 268 cell line, a spontaneously immortalized renal tumor cell line that may be of great interest to industry for studying HLRCC, drug screening, and searching for tumor markers related to diagnosis, prognosis, and drug resistance. This cell line is only the second

spontaneously immortalized cancer cell line of its kind in the world and is unique in that it is a primary tumor cell model (the other cell line, UOK 262, is from a metastasis cell model). The UOK 268 cell line is an established, clonal, immortalized renal cancer cell line derived from the long-term culture of aggressive tumor tissues of HLRCC in a specially designed culture medium under strict culture conditions. The UOK 268 exhibits an array of HLRCC kidney cancer characteristics that can promote protein and fatty acid biosynthesis and modulate HIF activities in a manner conducive to cancer cell proliferation.

Benefits:

- This is only one of two immortalized HLRCC cell lines, and is unique in that it is from a primary tumor cell model.
- Developing a diagnostic to search for tumor targets and screen for HLRCC and related cancers drug candidates will have significant benefits, including early detection and treatment.

POTENTIAL COMMERCIAL APPLICATIONS

- In vitro and in vivo cell model for understanding the biology of HLRCC and related cancers, including growth, motility, invasion, and metabolite production.
- High throughput screening to test for drug candidates that could be used to treat particular cancers, such as HLRCC.
- Diagnostic tool for the diagnosis, prognosis, and drug resistance of tumor markers.

COMPETITIVE ADVANTAGES

- Cell line is derived from a HLRCC patient: This cell line is anticipated to retain many features of primary HLRCC samples and novel HLRCC antigens identified from this cell line are likely to correlate with antigens expressed on human HLRCC tumors. Studies performed using this cell lines may have a direct correlation to the initiation, progression, treatment, and prevention of HLRCC in humans.
- Molecular and genetic features are well characterized: The inventors have elucidated many physical characteristics of the cell lines and their data reveals previously unrecognized coordination between mammalian glucose and iron metabolisms through AMPK signaling, and a novel mechanism for modulating HIF activities in renal cancers.

INVENTOR(S)

- [Marston W. Linehan, MD](#) (NCI)

DEVELOPMENT STAGE

- Prototype

PUBLICATIONS

- Yang, Y., et al., PMID: 19963135

PATENT STATUS

- Not Patented

THERAPEUTIC AREA

- Cancer/Neoplasm