

Tempol: A Commercially-Available Nitroxide as a Cancer Therapeutic

Summary

The National Cancer Institute's Urologic Oncology Branch is seeking statements of capability or interest from parties interested in collaborative research to further develop, evaluate, or commercialize the use of Tempol to target HIF-2a in cancer.

NIH Reference Number

E-133-2009

Product Type

- Therapeutics

Keywords

- tempol
- HIF-2
- nitroxide
- Tempol
- clear cell, kidney cancer

Collaboration Opportunity

This invention is available for licensing and co-development.

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Description of Technology

The National Cancer Institute's [Urologic Oncology Branch](#) is seeking statements of capability or interest from parties interested in collaborative research to further develop, evaluate, or commercialize the use of Tempol to target HIF-2a in cancer.

Elevated HIF-2a is associated with clear cell kidney cancer characterized by mutation of the VHL tumor suppressor gene and with many other cancers. A commercially-available stable nitroxide, TEMPOL, can effectively reduce the level of hypoxia-inducible transcription factor (HIF)-2a. Therefore, TEMPOL can potentially be developed into a cancer drug to treat patients with elevated HIF-2a, whether due to compromised VHL function or not.

The potential drug could target a population that suffers from genetic diseases such as inherited von Hippel-Lindau (VHL) disease and patients with kidney and other cancers characterized by elevation of HIF-2a. Inherited VHL disease is a cancer syndrome caused by germ line mutations of the VHL tumor suppressor gene. VHL is characterized by angiomas and hemangioblastomas of the brain, spinal cord, and retina.

Renal clear cell carcinoma (RCC) develops in approximately 75% of VHL patients by age 60 and is a leading cause of death in this population. Inactivation (mutation or methylation) of the VHL gene is associated with greater than 90% of all clear cell RCC (including sporadic cases). Nickerson et al. Clin Cancer Res 2008;14:4726-34. Thus, subjects with compromised VHL function represent a significant population that has or is at risk for developing cancer, including RCC. There is data that HIF-2a may be important in all or most cancers. Franovic, et al. Proc Natl Acad Sci U S A 2009.

Inventor(s)

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Development Stage

- Pre-clinical (in vivo)

Patent Status

- **U.S. Patent Issued:** U.S. Patent Number 8853277

Therapeutic Area

- Cancer/Neoplasm

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