

DIAGNOSTIC FOR CANCER OF THE ADRENAL GLANDS AND ADRENAL CORTEX

SUMMARY

The National Cancer Institute, Endocrine Oncology Branch seeks parties to co-develop a diagnostic method for adrenocortical cancer (ACC) through analysis of DNA methylation patterns in tissue.

REFERENCE NUMBER

E-135-2012

PRODUCT TYPE

- Diagnostics

KEYWORDS

- DNA methylation
- adrenocortical carcinoma (ACC)
- malignancy
- CpG methylation

COLLABORATION OPPORTUNITY

This invention is available for licensing and co-development.

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DESCRIPTION OF TECHNOLOGY

The National Cancer Institute, [Endocrine Oncology Branch](#) seeks parties to co-develop a diagnostic method for adrenocortical cancer (ACC) through analysis of DNA methylation patterns in tissue.

Adrenocortical carcinoma (ACC) is a very rare form of adrenal cancer. Diagnosis is often done during surgical removal of the tumor. Since the tumor pathology is not diagnosed prior to surgery, large numbers of patients with benign tumors undergo this surgery unnecessarily. There remains a need for a less invasive diagnostic method to reduce both the healthcare costs and the unnecessary risks of invasive surgery on patients who do not have ACC.

This technology represents new methods to distinguish malignant adrenocortical tumors from benign tumors and normal tissue in the adrenal glands/cortex using the methylation patterns of cytosine-phosphate-guanine dinucleotide (CpG) sequences. Patient samples can be obtained using noninvasive

means, such as a needle biopsy, and can allow clinicians to determine the malignancy and tumor type through analysis of the individual's CpG methylation patterns. The different CpG methylation patterns associated with normal, benign and malignant tissues may also serve as target sites for development of adrenocortical cancer therapeutics.

POTENTIAL COMMERCIAL APPLICATIONS

- Nucleic acid-based diagnostic tests or kits to identify malignant adrenocortical tumors and distinguish them from common benign tumors or normal adrenocortical tissue
- Identify CpG methylation sequences and patterns that could serve as targets for nonsurgical therapeutic interventions against adrenocortical tumors
- Companion diagnostic test for candidate demethylation agent therapies for treating adrenocortical malignancies

COMPETITIVE ADVANTAGES

- Malignant adrenocortical tumors can be differentiated from benign tumors without invasive surgery on individuals with benign tumors
- Tissue collection for diagnosis is minimally invasive

INVENTOR(S)

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DEVELOPMENT STAGE

- Pre-clinical (in vivo)

PUBLICATIONS

[Rechache N, et al. \[PMID 22472567\]](#)

PATENT STATUS

- **U.S. Filed:** U.S. Patent Application No. 14/384,583 filed September 11, 2014
- **Foreign Filed:** PCT Application No. PCT/US13/30347 filed 12 Mar 2013

RELATED TECHNOLOGIES

- [E-026-2011 - Diagnostics and Therapeutics for Adrenocortical Carcinomas](#)

THERAPEUTIC AREA

- Cancer/Neoplasm