Novel Markers for the Treatment and Diagnosis of Chronic Lumphocytic Leukemia (CLL)

Tech ID: 19546 / UC Case 2006-052-0

BACKGROUND

Therapeutic options for patients with chronic lymphocytic leukemia (CLL) are limited, and in most cases ineffective, or with a limited period of effectiveness. Relapse of the disease often occurs and patients acquire resistance, not only to the drug used, but to other drugs as well. Moreover, a specific marker for CLL does not exist on the market today. Patients 'wait and see' if the symptoms progress in the early stages of the disease before a diagnosis is made. Instead of being treated immediately, the disease could lurk for years.

TECHNOLOGY DESCRIPTION

Researchers at UC San Diego have developed a novel technology to diagnose CLL. They have demonstrated an enhanced expression of phosphodiesterase isoform 7B (PDE7B) in lymphocytes of CLL patients. Thus PDE7B can be used as a biomarker for diagnosis and prognosis of CLL.

Features of this technology include:

- PDE7B mRNA and protein levels are increased in CLL patients to up to 70- and 90-fold, respectively.
- Potential therapeutic agents comprise PDE7B inhibitors, antagonists, and antibodies.

STATE OF DEVELOPMENT

- Increase in PDE7B levels has been detected in CLL patients.
- This technology is offered exclusively or nonexclusively in the U.S.

ADVANTAGES

- Technology can be used in the form of a kit for CLL diagnostics.
- Potential CLL therapy by inhibiting PDE7B, resulting in apoptosis of CLL lymphocytes.

RELATED MATERIALS

- Zhang, L., et al., Cyclic Nucleotide Phosphodiesterase Profiling Reveals Increased Expression of Phosphodiesterase 7B in Chronic Lymphocytic Leukemia. Proc Natl Acad Sci USA, 2008. 105(49): p. 19532-7.
- News release at http://ucsdnews.ucsd.edu/newsrel/health/04-09AACR.asp
- Zhang L, Murray F, Rassenti LZ, Pu M, Kelly C, Kanter JR, Greaves A, Messer K, Kipps TJ, Insel PA. Cyclic nucleotide phosphodiesterase 7B mRNA: an unfavorable characteristic in chronic lymphocytic leukemia. Int J Cancer. 2011 Sep 1;129(5):1162-9. doi: 10.1002/ijc.25785. Epub 2011 Feb 11.

INTELLECTUAL PROPERTY INFO

Patent application (No. 12/960,955) allowance granted.

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	8,114,590	02/14/2012	2006-052

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OTHER INFORMATION

KEYWORDS

cancer, therapy, chronic lymphocytic leukemia, CLL, lymphoma, diagnostic, diagnosis, treatment, drug, cAMP, phosphodiesterase, PDE, PDE7B

CATEGORIZED AS

- **Medical**
  - Diagnostics
  - Disease: Cancer

RELATED CASES

2006-052-0

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