

**Technology**

Method of diagnosis and detections of unknown primary tumors

**Inventor**

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**Key Features**

- Earlier detection and better staging of cancers
- Localization and visualization of very small tumors
- Cost-effective
- Delivery either intravenously or intraperitoneally

**Stage of Development**

Reduced to practice with successful demonstration in both animal models and in a clinical setting

**Keywords**

- Diagnostic
- Radiolabeled cytotoxic T lymphocytes
  - Cancer diagnosis
  - Imaging technologies
  - Tumor staging

**Patent Status**

US Pat. Pub. No. 2006/0171883

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## Detection, Localization and Staging of Tumors using Labeled Activated Lymphocytes Directed to a Tumor Specific Epitope (VA Reference No. 02-100)

*Novel method of using pf activated radiolabeled cytotoxic T lymphocytes to identify unknown primary tumors*

**Technology**

The Department of Veterans Affairs has developed a method of using pf activated radiolabeled cytotoxic T lymphocytes to identify unknown primary tumors with a known immunogenic epitope on mucin-producing adenocarcinomas, common in breast, ovarian, lung, colon and other tumors.

**Description**

The technology developed by the VA includes methods for detecting and localizing a cell-specific antigen comprising exposing peripheral blood mononuclear cells (PBMCs) to an immunogenic peptide epitope of the antigen. This occurs under conditions for antigen-specific activation of T lymphocytes in the PBMCs, thereby producing antigen-specific T lymphocytes that at least bind to the cell-specific antigen. Labeled antigen-specific T lymphocytes are administered to a patient, typically without IL-2, and the distribution of these cells is determined by imaging, thereby detecting and localizing cell-specific antigen. The technology represents a significant accomplishment in nuclear medicine, although further work to fully establish clinical utility would be required prior to commercialization

**Competitive Advantage**

There are a number of standard imaging technologies used for the diagnosis and detection of tumors including MRI, CT, PET, and laboratory tests.

This invention:

- Is more cost effective than existing methods.
- Could allow radiologists to locate and visualize tumors which previously could not be visualized.
- Could prevent unnecessary surgery.
- Has the ability to amplify the localization of very small tumors (less than 2mm in diameter).

**Status**

The Department of Veterans Affairs is looking for a partner for further development and commercialization of this technology through a license, and the VA inventors are available to collaborate with interested companies through a Cooperative Research and Development Agreement (CRADA).