

Novel ELISA assay to detect SULF2 in patient samples

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INVENTION NOVELTY

This ELISA technique detects Sulfatase2 (SULF2), an extracellular heparan sulfate-degrading enzyme that is overexpressed in many cancers. Furthermore, this technique can potentially serve as a diagnostic for cirrhosis.

VALUE PROPOSITION

SULF2 is a key enzyme in cancer and metabolic disease processes. It drives tumorigenesis in non-small cell lung cancer, pancreatic cancer, hepatocellular carcinoma and glioblastomas; it is overexpressed in breast cancer, pancreatic cancer, gastric cancer, head and neck cancer, kidney cancer, central nervous system neoplasms and multiple myeloma. Furthermore, SULF2 regulates lipid metabolism and is overexpressed in mice with type 2 diabetes.

This invention is the only ELISA technique that can successfully quantify SULF2 protein levels. Therefore, it could be used to measure SULF2 protein levels in patient samples for improved diagnosis of cancer and diabetes and as a research tool.

TECHNOLOGY DESCRIPTION

UCSF scientists generated a novel monoclonal antibody (mAb), clone 5C12, that recognizes human SULF2 by immunizing SULF2 knockout mice with human SULF2 protein. The inventors then developed a novel sandwich ELISA assay that uses 5C12 to capture SULF2 and a biotinylated anti-SULF2 mAb, 8G1, to detect SULF2. Clone 8G1 was previously developed by the same investigators at UCSF.

APPLICATION

- Research tool
- Diagnostic for cancer, cirrhosis, diabetes or metabolic disease

ADVANTAGES

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OTHER INFORMATION

CATEGORIZED AS

- ▶ **Medical**
 - ▶ Diagnostics
 - ▶ Disease: Cancer
 - ▶ Disease: Digestive System
- ▶ **Research Tools**
 - ▶ Antibodies

RELATED CASES

2014-195-1

Previous SULF2 ELISA assays rely on capture by heparin and have high background. 5C12 is the first SULF2 antibody found to serve as a successful ELISA capture antibody. The high sensitivity and low background makes this the first assay capable of detecting SULF2 in human serum samples.

LOOKING FOR PARTNERS

Available for commercial license in the research tool or diagnostic space.

STAGE OF DEVELOPMENT

- Fully developed research tool
- Potential diagnostic applications

RELATED MATERIALS

► <http://www.sciencedirect.com/science/article/pii/S0009898114004811>

OTHER INFORMATION

INVENTORS' PROFILES:

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