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seeks partner to license

Monoclonal Antibodies to MMP-2

The University of Florida is seeking companies interested in antibodies that detect matrix metalloproteinase-2 (MMP2), an enzyme active only in invasive tumors and therefore critical in their study. This enzyme promotes the spread of tumor cells by deteriorating collagen in basement membranes. The antibodies raised against the activated form of recombinant human MMP2 are specifically designed to bind to the enzyme as shown by ELISA and Western blotting. Of the panel of antibodies developed, several are versatile enough to cross-react with other species, making them extremely important in research studies.

Applications

Research on MMP2 including studies using lower species such as rodent

Advantages

- ◆ May develop future treatments that could block MMP2 action, preventing the structure of basement membranes that guard against tumor cell degradation
- ◆ Antibodies cross-react with lower species such as rodent, a feature rarely available or completely unavailable in previous antibodies
- ◆ Enhances studies of MMP2 and its role in degrading extracellular matrix pieces such as collagen, laminin, and proteoglycans
- ◆ These antibodies may be able to differentiate the activated form of MMP2, making them the first of their kind
- ◆ Recognition of various epitopes across the MMP2 molecule, proven useful for effective capture and detection in ELISA

The Technology

The monoclonal antibodies developed against MMP2 detect the enzyme accurately and makes it easily recognizable on ELISA, Western blotting and tissue immunocytochemistry. This aids in the research of MMP2, the signaling mechanism for cells to begin migration. The movement is triggered when MMP2 splits laminin-5 and exposes an integrin-binding site on this component of epithelial basement membrane. The changed form of laminin was found in tumors and in tissues being altered. The activated form of MMP2 is not found in benign tumors, making the detection of the enzyme a possible early indicator of tumor cells.

Monoclonal Antibodies to MMP-2

The Inventor

Dr. David Muir is the Director of the Developmental Neuro-oncology Laboratory at the University of Florida and an Associate Professor in the Neurology division of the Department of Pediatrics. He is also an affiliate Associate Professor for the University of Florida College of Medicine's Department of Neuroscience. He has a bachelor's degree in psychobiology and a master of philosophy in biomedical sciences. He earned his doctorate degree in 1987 from City University of New York. In addition to dozens of publications, Dr. Muir has also contributed writing for three book chapters.

Dr. Muir's research focuses mainly on examining invasive tumor cells and developing tests to understand their behavior. His interests range from cell culture to the nervous system and oncology. Other areas of Dr. Muir's expertise include monoclonal antibody production and nuclear magnetic resonance imaging. Dr. Muir's research efforts also focus on nerve grafting and development of animal models of peripheral nerve tumors.



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