

Monoclonal Antibody to Neurofibromin

The Inventors

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.

Dr. Margaret (Peggy) Wallace is an Associate Professor of Molecular Genetics and Microbiology, with joint appointments in Pediatric Genetics and Biochemistry, all at the College of Medicine. She received her bachelor's degree in Mathematics and Statistics in 1982 from Miami University, and doctorate in Medical Genetics in 1987 from Indiana University. Dr. Wallace has been a primary author or co-author on 11 book chapters and over 60 publications. She serves on peer-review study sections for two non-profit organizations.

Dr. Wallace's research primarily involves molecular genetic studies of inherited disease—mapping genes and analyzing mutation pathogenesis. Her largest and most long-standing research effort is in the field of neurofibromatosis, including studies of the genetic and epigenetic contributions to this condition and the characteristic tumors. Other interests include inherited heart defects and skeletal dysplasias.



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UNIVERSITY OF
FLORIDA

seeks partner to license

Monoclonal Antibody to Neurofibromin

The University of Florida is seeking a company to license an antibody that binds to neurofibromin, a protein that when absent or expressed in an altered form may cause Neurofibromatosis disease. The antibody McNFn27b is a valuable resource for biochemical study of this important oncoprotein since the alterations in neurofibromin structure and function underlying tumor formation in Neurofibromatosis remain largely unknown.

Application

The monoclonal antibody, designated McNFn27b, will improve researcher's ability to identify and isolate full-length and truncated forms of the Neurofibromatosis type 1 gene product, neurofibromin.

Advantages

- ◆ A monoclonal antibody to neurofibromin with defined region of binding
- ◆ Binds to a highly conserved, extreme N-terminal sequence, allowing identification of isoforms and truncated forms of neurofibromin
- ◆ Binds human and rodent neurofibromin (other species not tested)
- ◆ Effective in ELISA, immunoprecipitation, affinity chromatography, and immunohistochemistry
- ◆ Performs well in immunolabeling of paraffin sections without antigen retrieval methods
- ◆ Allows purification of neurofibromin, extending sample utility
- ◆ Provides a singular, consistent and unlimited resource, a guarantee polyclonal antibodies can not issue

The Technology

The developed hybridoma produces a monoclonal antibody, McNFn27b, which is a mouse IgG1 kappa. The antibody was raised against a highly conserved N-terminal peptide unique to neurofibromin, corresponding to amino acids 27-41 of human neurofibromin, and binds to human and rodent neurofibromin. It is particularly useful for immunolabeling of tissue sections including paraffin sections and is potentially useful for quantitative assay and for immunopurification of neurofibromin. Neurofibromin is the product of the Neurofibromatosis type 1 tumor suppressor gene, known to have GTPase activity that modulates the ras pathway. Most of the information known about neurofibromin has been deduced from homology analysis of its gene sequence, since the protein has not been purified. The genes associated with Neurofibromatosis disease may fail to produce or may produce altered forms of neurofibromin. However, the alterations in neurofibromin structure and function underlying tumor formation in Neurofibromatosis remain unknown. The antibody McNFn27b is a valuable resource for immunopathological study of this important oncoprotein.