Monoclonal Antibodies Specific for the Cytoplasmic Gamma-actin Isoform

WARF: P05366US

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The Wisconsin Alumni Research Foundation (WARF) is seeking commercial partners interested in developing five monoclonal antibodies to cytoplasmic gamma-actin.

Overview

The six mammalian actin genes encode a highly conserved family of cytoskeletal protein isoforms important in cell structure, mechanical stability, and motility. Actin isoforms exhibit tissue-specific expression and distinct subcellular distributions, suggesting that each isoform may serve a different function. Although commercially available monoclonal antibodies exist for most isoforms of actin, the only available antibodies specific for the gamma-cytoplasmic isoform were extremely variable polyclonal antibodies.

The Invention

UW-Madison researchers have developed five monoclonal antibodies to cytoplasmic gamma-actin. They purified full-length cytoplasmic gamma-actin from bovine brain and then co-immunized mice with the purified gamma-actin and a synthetic peptide containing 15 amino acids from a unique sequence in the N-terminus of gamma-actin. Western blots of purified actin isoforms and tissue extracts confirmed that the resulting antibodies were specific to gamma-actin, while images of muscle biopsies from a dystrophic mouse model validated the antibodies for use in immunofluorescence microscopy and as potential diagnostics in muscular dystrophy.

Applications

- Potentially useful in the diagnosis of muscular dystrophy

Key Benefits

- Provides—for the first time—monoclonal antibodies to the gamma-cytoplasmic isoform of actin
- Effective research tools

Tech Fields

- Research Tools : Antibodies

For current licensing status, please contact Jennifer Gottwald at jennifer@warf.org or 608-960-9854