Anti-Actin, α-Smooth Muscle antibody, Mouse monoclonal
clon 1A4, purified from hybridoma cell culture
Catalog Number A5228

Product Description
Anti-Actin, α-Smooth Muscle antibody, Mouse monoclonal (mouse IgG2a isotype) is derived from
the 1A4 hybridoma produced by the fusion of mouse myeloma cells and splenocytes from mice immunized
with the NH₂ terminal synthetic decapeptide of α-smooth muscle actin, coupled to keyhole limpet
hemocyanin (KLH).¹ The isotype is determined by a
double diffusion immunoassay using Mouse Mono-
clonal Antibody Isotyping Reagents, Catalog Number
ISO2.

Anti-Actin, α-Smooth Muscle antibody, Mouse monoclonal is specific for the single isoform α-actin
using indirect immunofluorescent labeling of
formalin-fixed, paraffin-embedded human,¹ rabbit,⁴
rat,¹ mouse,⁵ bovine, frog, goat, guinea pig, dog,
sheep, snake, and chicken¹ tissue sections. This
antibody can be used in ELISA, immunobloting,³ and
immunocytochemistry.⁵-⁶

The two major cytoskeletal proteins implicated in cell
motility are actin and myosin. Actin and myosin are
constituents of many cells types and are involved in
a myriad of cellular processes including locomotion,
secretion, cytoplasmic streaming, phagocytosis, and
cytokinesis. Although actin is one of the most
conserved eukaryotic proteins, it is expressed in
mammals and birds as six isoforms characterized by
electrophoresis and amino acid sequence analysis.
Four of the six represent differentiation markers of
muscle tissues. The other two are found in
practically all cells. Actin isoforms show >90%
overall sequence homology, but only 50-60%
homology in the 18 NH2-terminal residues. The
NH2-terminal region of actin appears to be a major
antigenic region, and may be involved in the
interaction of actin with other proteins such as
myosin. It has been shown that the relative
proportion of actin isoforms are different in smooth
muscles of different organs and change within the
same population of smooth muscle cells during
development, pathological situations and different
culture conditions. The actin in cells of various
species and tissue origin are very similar in their
immunological and physical properties.

Anti-Actin, α-Smooth Muscle antibody, Mouse monoclonal may help in the characterization of stromal
cell heterogeneity in various organs and distinguishing
smooth muscle cells from fibroblasts in mixed cultures.

Reagent
Supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide.

Antibody Concentration: ~2 mg/ml.

Precautions and Disclaimer
This product is for R&D use only, not for drug,
household, or other uses. Please consult the
Material Safety Data Sheet for information regarding
hazards and safe handling practices.

Storage/Stability
For continuous use, store at 2-8 °C for up to one
month. For prolonged storage, freeze in working
aliquots. Repeated freezing and thawing, or storage
in frost-free freezers, is not recommended. If slight
turbidity occurs upon prolonged storage, clarify the
solution by centrifugation before use. Working
dilutions should be discarded if not used within
12 hours.

Product Profile
Indirect immunofluorescence: a working antibody
concentration of 5-10 µg/ml is recommended for
labeling of blood vessels in formalin-fixed, paraffin-
embedded human tonsil or appendix tissue.

Note: In order to obtain the best results using
various techniques and preparations, we
recommend determining the optimal working dilution
dby titration.

References
2787-2796 (1986).
3. Durand-Arczynska, W., et al., Histochemistry, 100,
4. van Royen, N., et al., FASEB, 16,
432-434 (2002).