

SMA (1A4)

Format	Catalog No.	Pack size	Dilution
Concentrated	G0001 A, B, C	0.1, 0.5, 1.0 mL	1:100 - 200
Prediluted	G0001 AA, BB	6.0, 3.0 mL	Ready to use

ANTIBODY SPECIFICATIONS

- **HOST SPECIES:** Mouse
- **CLONE:** 1A4
- **ISOTYPE:** IgG2a/kappa
- **CELLULAR LOCALIZATION:** Cytoplasm, Cytoskeleton
- **IMMUNOGEN:** N-Terminal decapeptide of alpha smooth muscle isoform of actin and conjugated to KLH.
- **MOLECULAR WEIGHT:** ~42 kDa
- **SPECIES REACTIVITY:** Baboon, Cat, Chicken, Cow, Dog, Goat, Guinea pig, Human, Monkey, Mouse, Pig, Rabbit, Rat, Sheep
- **POSITIVE CONTROL:** HeLa cells, smooth muscle or leiomyosarcoma, Mouse 3T3 cells

INTENDED USE

This antibody is intended **for research use only (RUO)** and is not approved for diagnostic or therapeutic applications. It is optimized for the detection of SMA protein in formalin-fixed, paraffin-embedded (FFPE) human tissues by immunohistochemistry (IHC).

SUMMARY AND APPLICATION

Alpha-Smooth Muscle Actin, or SMA, has a molecular weight of about 42 kDa (kilodaltons). Specifically found in vascular smooth muscle cells, uterine smooth muscle, and gastrointestinal tissues, this protein is an essential constituent of the smooth muscle cytoskeleton. It is essential for force production and cellular contractility.

SCIENTIFIC BACKGROUND:

Actin is found in most cell types and is a key part of the cytoskeleton. The actin from smooth muscles is the only protein that this MAb targets. The first four amino acids at the N-terminus include its epitope. Skeletal and cardiac muscle are not stained by this MAb, but myofibroblasts and myoepithelial cells are. The diagnosis of smooth muscle and skeletal muscle tumours may be made using this antibody in conjunction with anti-muscle specific actin and myogenin. While anti-muscle specific actin and myogenin show positive results, this antibody shows negative results in the majority of rhabdomyosarcoma cases. Anti-myogenin is negative in leiomyosarcomas, while only anti-muscle specific and anti-smooth muscle actin are positive.

RECOMMENDED USAGE

- **IHC Protocol Highlights:**
 - Dilution: 1–2 µg/mL

- o Incubation: 30 minutes at room temperature
 - o Antigen Retrieval: Heat in 10 mM Tris with 1 mM EDTA (pH 9.0) at 95°C for 45 minutes, followed by cooling
- **Specimen Type:** FFPE sections, preferably ~4 µm

FORMULATION & STORAGE:

- Buffer: 10 mM PBS, 0.05% BSA, 0.05% sodium azide
- Storage:
 - o Dilution: 1–2 µg/ML
 - o Without azide: –20 to –80°C
- Shelf Life: 24 months under proper conditions
- Hazard Classification: Non-hazardous; no MSDS required

LIMITATIONS

- Interpretation must be made by a qualified pathologist
- Tissue fixation and handling may affect staining quality
- Negative results do not always indicate absence of antigen—consider panel testing

PRECAUTIONS

- Contains 0.05% sodium azide – avoid ingestion and contact with skin or mucosa
- Wear gloves and avoid contact with eyes or mucosa
- Do not use reagents past expiration or if packaging appears compromised
- Do not pipette by mouth or reuse slides/containers without proper sterilization

TECHNICAL SUPPORT

For technical assistance, please contact GeneBio Solution's Technical Support at www.genebiosolution.com