

## Product Information

### Anti-ARTS antibody, Mouse monoclonal clone ARTS51, purified from hybridoma cell culture

Product Number **A 4471**

#### Product Description

Anti-ARTS antibody, Mouse monoclonal (mouse IgG2b isotype) is derived from the ARTS51 hybridoma produced by the fusion of mouse myeloma cells and splenocytes from a BALB/c mouse immunized with a synthetic peptide corresponding to C-terminus residues (amino acids 247-266) of human ARTS protein, conjugated to KLH. The isotype is determined by a double diffusion immunoassay using Mouse Monoclonal Antibody Isotyping Reagents, Product Number ISO2.

Monoclonal Anti-ARTS recognizes an epitope within amino acids 247-266 of human ARTS molecule. The antibody may be used for ELISA, immunoblotting (32 kDa) and immunocytochemistry. Reactivity has been observed with human ARTS.

Apoptosis, an evolutionary conserved form of cell suicide, requires specialized machinery. A central component of this machinery is the protein TGF- $\beta$ , which is important in both development and tumor regression.<sup>1</sup> Certain signal transduction pathways of TGF- $\beta$  are known to be mediated by SMAD proteins, or by MAP kinase pathways.<sup>2-4</sup>

ARTS (Apoptosis Related protein in the TGF- $\beta$  Signaling pathway), is a novel protein involved in the apoptotic pathways of TGF- $\beta$ .<sup>5</sup> The protein, is derived from the human septin H5/PNUTL2/CDCrel-2a/2b gene. It contains a phosphate-binding site (P-loop) death domain, which is conserved in all septins and in many different classes of ATP/GTPases, including CED-4 and Apaf-1 that are major regulators of apoptosis. Indeed, transient transfection of ARTS into cell lines induces TGF- $\beta$ -dependent apoptosis. In addition, mutations in the P-loop motif impair the ability of ARTS to enter the nucleus and abrogate its competence to induce apoptosis.<sup>5,6</sup> The C-terminus of the ARTS molecule is unique in its amino acids sequence, while the N-terminus is shared with hCDCrel-2b. Unlike other septins, ARTS is localized to mitochondria and translocates to the nucleus, coincident with apoptotic signals induced by TGF- $\beta$ .<sup>6</sup>

Monoclonal antibodies reacting specifically with ARTS are a useful tool for studying the molecular mechanisms of ARTS and its involvement in the apoptotic pathways of TGF- $\beta$  during both development and tumor regression.

#### Reagent

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

Antibody Concentration: Approx. 2 mg/ml.

#### Precautions and Disclaimer

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

#### Storage/Stability

For continuous use, store at 2 to 8 °C for up to one month. For extended 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 dilution samples should be discarded if not used within 12 hours.

#### Product Profile

**Immunoblotting:** a working antibody concentration of 0.5-1  $\mu$ g/ml is recommended using a whole extract of transfected 293T (human embryonal kidney) cells expressing ARTS.

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

#### References

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4. de Caestecker, M.P., et al., *J. Biol. Chem.*, **272**, 13690-13696 (1997).
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DS,PHC 10/16-1