MONOCLONAL ANTI-PS2 ESTROGEN-REGULATED PROTEIN
CLONE PS2.1
Purified Mouse Immunoglobulin

Product Number **P 3742**

Product Information

Product Description
Monoclonal Anti-pS2 Estrogen-Regulated Protein (also known as TFF1) (mouse IgG_1 isotype) is derived from the hybridoma produced by the fusion of mouse myeloma p3-NS1-Ag4-1 cells with splenocytes from BALB/c mice immunized with a 31 amino acid synthetic peptide from the C-terminus of human pS2 protein. The antibody is purified by protein G chromatography.

Monoclonal Anti-pS2 Estrogen-Regulated Protein specifically recognizes human pS2 Estrogen-Regulated Protein (6.5 kDa). It may be used in immunohistochemistry with frozen or formalin-fixed, paraffin-embedded tissue sections.

Human pS2 and SP (spasmolytic proteins) cDNA were originally isolated from the human breast cancer cell line MCF-7 and from pig pancreas, respectively. These proteins share a common novel sequence motif named trefoil (TFF) or P domain and constitute the trefoil factor (TFF) family. All TFFs and related proteins are normally expressed in tissues expressing mucins, namely the gastrointestinal tract mucosa. They are also found in the skin of *Xenopus*. Besides their normal sites, TFFs are ectopically expressed in various human diseases. pS2 is found in a number of carcinomas including breast, pancreas, stomach and large intestine.[1,2]

The gene expression of pS2 in breast carcinoma is directly regulated by estradiol, and is classified as an estrogen-responsive gene. Estrogen receptor β (ERβ) activates transcription of reporter plasmids containing A2, pS2, B1, and oxitocin estrogen response elements (EREs). Subsequently, ERβ undergoes ERE-dependent conformational changes resulting in differential recruitment of AIB1 and TIF2 to the DNA-bound receptor. Recent findings indicate that transcription of the pS2 gene is modulated by alterations in protein binding to multiple sites upstream of the basal promoter, but not by changes in protein-DNA interactions in the basal promoter.[3,4]

A positive correlation exists between the expression of pS2/TFF1 and the ER status of the breast tumor. Presence of pS2 is significantly associated with a positive response to endocrine therapy. Thus, the pS2/TFF1 expression assay is useful in the characterization of human breast tumors and the predicted positive response to endocrine therapy.

Under normal conditions pS2/TFF1 is expressed exclusively in the stomach and its expression is independent of estradiol. In disease states pS2/TFF1 may be ectopically expressed in the entire gastrointestinal tract and the distribution of pS2 and SP suggests that both may be involved in gastrointestinal tract repair. The absence of pS2/TFF1 may lead to intestine mucosal barrier defects accompanied by a local lymphoproliferative response. pS2 appears necessary for normal differentiation of the antral and pyloric gastric mucosa and it may serve as a gastric-specific tumor suppressor gene. Experiments on mice have shown that all mice lacking pS2 developed gastric adenoma, but only 30% developed gastric carcinoma, which indicates that the loss of pS2 protein may not be sufficient for malignancy.[5,6]

Reagent
Monoclonal Anti-pS2 Estrogen-Regulated Protein is supplied as a solution in phosphate buffered saline, pH 7.4, with 0.08% sodium azide as a preservative.

Precautions and Disclaimer
Due to the sodium azide content, a material safety data sheet (MSDS) for this product has been sent to the attention of the safety officer of your institution. Consult the MSDS for information regarding hazards and safe handling practices.

Storage/Stability
Store at –20 °C. Upon initial thawing freeze the solution in working aliquots for extended storage. Avoid repeated freezing and thawing to prevent denaturing the antibody. Do not store in a frost-free freezer. The antibody is stable for at least 12 months when stored appropriately. Working dilutions should be discarded if not used within 12 hours.

Product Profile
A recommended working concentration of 2-4 µg/ml is determined by immunohistochemical

staining of formalin-fixed paraffin-embedded human breast carcinoma tissue.

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

References

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