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#31549

Cancer Associated Fibroblast Marker Antibody Sampler Kit



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New 11/19

For Research Use Only. Not For Use In Diagnostic Procedures.

Product Includes	Quantity	MW (kDa)	Isotype/Source
PDGF Receptor α (D1E1E) XP [®] Rabbit mAb 3174	20 μ l	190	Rabbit IgG
α -Smooth Muscle Actin (D4K9N) XP [®] Rabbit mAb 19245	20 μ l	42	Rabbit IgG
PDGF Receptor β (28E1) Rabbit mAb 3169	20 μ l	190	Rabbit IgG
Vimentin (D21H3) XP [®] Rabbit mAb 5741	20 μ l	57	Rabbit IgG
FAP (E1V9V) Rabbit mAb 66562	20 μ l	90	Rabbit IgG
S100A4 (D9F9D) Rabbit mAb 13018	20 μ l	12	Rabbit IgG
Anti-rabbit IgG, HRP-linked Antibody 7074	100 μ l		Goat

See www.cellsignal.com for individual component applications, species cross-reactivity, dilutions, and additional application protocols.

Description: The Cancer Associated Fibroblast Marker Antibody Sampler Kit provides an economical means of detecting proteins reported to be expressed in Cancer Associated Fibroblasts (CAFs). The kit includes enough antibodies to perform two western blot experiments with each primary antibody.

Background: The tumor microenvironment (TME) has been shown to play an important role in tumor initiation, development, and metastasis. Numerous factors contribute to the nature of the TME such as the presence of immune cells; T-cells, B-cells, and natural killer (NK) cells, and wider environmental factors, such as extracellular matrix (ECM) stiffness, hypoxia, and interstitial pressure. Amongst all these various factors, fibroblasts have been suggested to play a key role in tumor development.

Fibroblasts have been studied extensively, however, much regarding their influence on the TME remains to be understood. During tumor development, a subpopulation of hyper-activated fibroblasts become prominent in the TME and secretion of cytokines and chemokines from these cells promotes pro-tumorigenic activity. These highly heterogeneous fibroblast populations are known collectively as CAFs (Cancer Associated Fibroblasts).

Due to high plasticity and variability within CAF populations it has been difficult for researchers to define a universal marker for these cells. In lieu of a single marker, a number of markers are currently used to investigate CAFs. PDGFR α and PDGFR β are common markers used for fibroblast identification, although PDGFR α is more widely expressed over the larger fibroblast populations. α -Smooth Muscle Actin is widely used to identify CAFs, however, some reports suggest it is not expressed by all functionally active CAFs. FSP-1/S100A4 is expressed by cells of mesenchymal origins. Although commonly used as a CAF

marker, it too is not expressed by all fibroblasts present in a tumor. Some reports even suggest it to be a marker for quiescent fibroblasts. Fibroblast Activation Protein, or FAP as it is more commonly known, has traditionally been associated with tissue repair, fibrosis, and extracellular matrix degradation. FAP has more recently been described as a useful marker of CAFs. Vimentin strongly characterizes cells of a mesenchymal phenotype. It is frequently used as one marker of CAFs, but it is important to note that it is also highly expressed in fibroblasts of all types, as well as numerous other cell types, such as macrophages and adipocytes, and by epithelial cells undergoing epithelial-to-mesenchymal transition (EMT) (Reviewed in 1,2).

Storage: Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 μ g/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at -20°C . Do not aliquot the antibodies.

Please visit www.cellsignal.com for validation data and a complete listing of recommended companion products.

Background References:

- (1) LeBleu, V.S. and Kalluri, R. (2018) *Dis Model Mech* 11, pii: dmm029447. doi: 10.1242/dmm.029447.
- (2) Nurmik, M. et al. (2019) *Int J Cancer*, doi: 10.1002/ijc.32193.

Specificity/Sensitivity: α -Smooth Muscle Actin (D4K9N) XP[®] Rabbit mAb recognizes endogenous levels of total α -smooth muscle protein. PDGF Receptor α (D1E1E) XP[®] Rabbit mAb detects endogenous levels of PDGFR α . This antibody may cross-react with PDGFR β at overexpressed levels. Nuclear staining has been observed with this antibody in certain tissues. The specificity of this staining is unknown. PDGF Receptor β (28E1) Rabbit mAb detects endogenous levels of PDGF receptor β protein. The antibody may cross-react with PDGF receptor α when highly overexpressed. Vimentin (D21H3) XP[®] Rabbit mAb detects endogenous levels of total vimentin protein. FAP (E1V9V) Rabbit mAb recognizes endogenous levels of total FAP protein. S100A4 (D9F9D) Rabbit mAb recognizes endogenous levels of total S100A4 protein.

Source/Purification: α -Smooth Muscle Actin (D4K9N) XP[®] Rabbit mAb is produced by immunizing animals with a synthetic peptide corresponding to residues near the amino terminus of human α -smooth muscle actin protein. PDGF Receptor α (D1E1E) XP[®] Rabbit mAb is produced by immunizing animals with a synthetic peptide corresponding to residues near the carboxy-terminal sequence of human PDGFR α . PDGF Receptor β (28E1) Rabbit mAb is produced by immunizing animals with a GST fusion protein containing a carboxy-terminal fragment of human PDGF receptor β . Vimentin (D21H3) XP[®] Rabbit mAb is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Arg45 of human vimentin protein. FAP (E1V9V) Rabbit mAb is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Ala497 of human FAP protein. S100A4 (D9F9D) Rabbit mAb is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Ala54 of human S100A4 protein.

U.S. Patent No. 5,675,063.

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