Revision 9

Store at +4C

#4528

Pan-Keratin (C11) Mouse mAb (Alexa Fluor® 647 Conjugate)

Cell Signaling TECHNOLOGY®

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For Research Use Only. Not for Use in Diagnostic Procedures.

Applications:	Reactivity:	Sensitivity:	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
IHC-P, IF-F, IF-IC, FC-FP	H M R Mk	Endogenous	Mouse IgG1	#P48668, #P13645, #P04259, #P05787, #P13646, #P02538, #P05783, #P13647, #P19013	286887, 3858, 3854, 3856, 3860, 3853, 3875, 3852, 3851

Product Usage Information

Application	Dilution
Immunohistochemistry (Paraffin)	1:50 - 1:200
Immunofluorescence (Frozen)	1:100 - 1:400
Immunofluorescence (Immunocytochemistry)	1:800 - 1:3200
Flow Cytometry (Fixed/Permeabilized)	1:800

Storage

Supplied in PBS (pH 7.2), less than 0.1% sodium azide and 2 mg/ml BSA. Store at 4°C. Do not aliquot the antibody. Protect from light. Do not freeze.

Specificity/Sensitivity

Pan-Keratin (C11) Mouse mAb (Alexa Fluor® 647 Conjugate) detects endogenous levels of total keratins 4, 5, 6, 8, 10, 13 and 18. The antibody does not cross-react with other keratins.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a cytoskeleton preparation from A-431 cells. This antibody was conjugated to Alexa Fluor® 647 under optimal conditions with an F/P ratio of 2-6. The Alexa Fluor® 647 dye is maximally excited by red light (e.g. 633 nm He-Ne laser). Antibody conjugates of the Alexa Fluor® 647 dye produce bright far-red-fluorescence emission, with a peak at 665 nm.

Description

This Cell Signaling Technology® antibody is conjugated to Alexa Fluor® 647 fluorescent dye under optimal conditions. This antibody conjugate is expected to exhibit the same species cross-reactivity as the unconjugated Pan-Keratin (C11) Mouse mAb #4545.

Background

Keratins (cytokeratins) are intermediate filament proteins that are mainly expressed in epithelial cells. Keratin heterodimers composed of an acidic keratin (or type I keratin, keratins K9-K28) and a basic keratin (or type II keratin, keratins K1-K8 and K71-K80) assemble to form filaments. Keratin isoforms demonstrate tissue- and differentiation-specific profiles that make them useful as research and clinical biomarkers (1,2).

Dysregulation/mutations in keratin genes can lead to a variety of disorders affecting the skin, hair, nails, and other epithelial tissues (3). While expression of keratins can be variable, immunohistochemical staining of keratins is widely used to help in the identification and classification of epithelial tumors, and may also provide prognostic information.

Keratins 8 and 18 (K8/K18) are expressed in simple epithelia of normal tissue, as well as in adenocarcinomas of the breast, lung, ovary, and gastrointestinal tract. Keratin 17 is expressed in basal keratinocytes of stratified epithelia, hair follicles, and sebaceous glands. Onset of keratin 17 expression coincides with the definition of major epithelial lineages during skin development (4). Keratin 14 (K14) is expressed in basal cells of stratified epithelia, and in basal-like subtypes of breast cancer and squamous cell carcinomas. Keratin 19 (K19) is expressed in glandular epithelia, including the liver, gallbladder, and pancreas, as well as in adenocarcinomas of the breast, thyroid, and bile duct. Keratin 20 (K20) is expressed in gastrointestinal epithelium, urothelium, and Merkel cells in the skin, as well as in colorectal carcinomas and some urothelial carcinomas. Keratin 5/6 (K5/6) is expressed in basal cells of stratified epithelia, including the skin, prostate, and breast, as well as in basal-like breast cancers, squamous cell carcinomas, and some lung carcinomas. Keratin 7 (K7) is expressed in glandular epithelia, such as those in the lung, breast, and female reproductive tract, as well as in adenocarcinomas of the lung, breast, and ovary (5,6).

Keratins, particularly K8, K18, and K19, serve as biomarkers for identification of circulating tumor cells (CTCs) (5).

Post-translational modifications, including phosphorylation, acetylation, ubiquitylation, sumoylation, glycosylation, and transamidation, have been shown to affect the functions of keratins in normal and disease states (6). Understanding the molecular mechanisms underlying these PTMs may provide insights into cancer pathogenesis.

Background References

1. Chang, L. and Goldman, R.D. (2004) *Nat Rev Mol Cell Biol* 5, 601-13.
2. Schweizer, J. et al. (2006) *J Cell Biol* 174, 169-74.
3. Sarma, A. (2022) *Int J Biol Macromol* 219, 395-413.
4. McGowan, K.M. and Coulombe, P.A. (1998) *J Cell Biol* 143, 469-86.
5. Werner, S. et al. (2020) *Mol Aspects Med* 72, 100817.
6. Dmello, C. et al. (2019) *J Biosci* 44, 33.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Applications Key

IHC-P: Immunohistochemistry (Paraffin) **IF-F:** Immunofluorescence (Frozen) **IF-IC:** Immunofluorescence (Immunocytochemistry) **FC-FP:** Flow Cytometry (Fixed/Permeabilized)

Cross-Reactivity Key

H: Human **M:** Mouse **R:** Rat **Mk:** Monkey

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Limited Uses