

**Phospho-Keratin 20 (Ser13) (D9M6O)
Rabbit mAb****Orders:** 877-616-CELL (2355)
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For Research Use Only. Not for Use in Diagnostic Procedures.

Applications: W, IF-IC	Reactivity: H	Sensitivity: Endogenous	MW (kDa): 48	Source/Isotype: Rabbit IgG	UniProt ID: #P35900	Entrez-Gene Id: 54474
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**Product Usage
Information****Application**Western Blotting
Immunofluorescence (Immunocytochemistry)**Dilution**1:1000
1:400**Storage**

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

Specificity/Sensitivity

Phospho-Keratin 20 (Ser13) (D9M6O) Rabbit mAb recognizes endogenous levels of keratin 20 protein only when phosphorylated at Ser13.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Ser13 of human keratin 20 protein.

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.

Keratin 20 is primarily expressed in gastric and intestinal epithelium, urothelium, and Merkel cells (7). Research studies have shown that keratin 20 is an important marker of colon, liver, pancreatic, Merkel cell, and gastric cancer (8). Serine 13 of keratin 20 is phosphorylated in response to stress in intestinal epithelia, likely through the p38 MAPK pathway (9, 10).

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.
 7. Moll, R. et al. (1992) *Am J Pathol* 140, 427-47.
 8. Karantza, V. (2011) *Oncogene* 30, 127-38.
 9. Zhou, Q. et al. (2006) *J Biol Chem* 281, 16453-61.
 10. Menon, M.B. et al. (2010) *J Biol Chem* 285, 33242-51.
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Species Reactivity

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

Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v BSA, 1X TBS, 0.1% Tween@ 20 at 4°C with gentle shaking, overnight.

Applications Key

W: Western Blotting **IF-IC:** Immunofluorescence (Immunocytochemistry)

Cross-Reactivity Key

H: Human

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