Revision 1

#52033 Store at -20°C

Small Cell Lung Cancer Biomarker Antibody Sampler Kit

1 Kit (9 x 20 microliters)

Cell Signaling TECHNOLOGY®

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Product Includes	Product #	Quantity	Mol. Wt	Isotype/Source
ASCL1 (E5S4Q) XP® Rabbit mAb	10585	20 µl	30 kDa	Rabbit IgG
NeuroD1 (D90G12) Rabbit mAb	7019	20 µl	49 kDa	Rabbit IgG
YAP (D8H1X) XP® Rabbit mAb	14074	20 µl	65-78 kDa	Rabbit IgG
POU2F3 (E5N2D) XP® Rabbit mAb	36135	20 µl	45-60 kDa	Rabbit IgG
Thyroid Transcription Factor 1 (TTF-1) (D2E8) Rabbit mAb	12373	20 µl	39, 42 kDa	Rabbit
DLL3 (E3J5R) Rabbit mAb	71804	20 µl	65 kDa	Rabbit IgG
NCAM1 (CD56) (E7X9M) XP® Rabbit mAb	99746	20 µl	120 to 220 kDa	Rabbit IgG
Enolase-2 (E2H9X) XP® Rabbit mAb	24330	20 µl	47 kDa	Rabbit IgG
CHGA (E8X7R) Rabbit mAb	85798	20 µl	80 kDa	Rabbit IgG
Anti-rabbit IgG, HRP-linked Antibody	7074	100 µl		Goat

Please visit cellsignal.com for individual component applications, species cross-reactivity, dilutions, protocols, and additional product information.

Description

The Small Cell Lung Cancer Biomarker Antibody Sampler Kit provides a means of detecting common biomarkers studied in small cell lung cancer (SCLC). The kit includes enough antibodies to perform two western blot experiments with each primary antibody.

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 antibodies.*

Background

Lung cancer is the leading cause of cancer-related mortality worldwide (1). It is generally divided into two broad histological classifications: small cell lung cancer (SCLC) and non-small cell lung cancer (NSCLC). SCLC is particularly aggressive and has been further subdivided by biological heterogeneity. Subtypes of SCLC have recently been described based on expression distinct transcriptional regulators (2,3). These subtypes were labeled as SCLC-A expressing achaete-scute homolog 1 (ASCL1), SCLC-N expressing neurogenic differentiation factor 1 (NeuroD1), SCLC-Y expressing yes-associated protein 1 (YAP), and SCLC-P expressing POU class 2 homeobox 3 (POU2F3). ASCL1 and NeuroD1 drive a neuroendocrine phenotype through regulation of distinct genes. DLL3, an inhibitor of NOTCH signaling, is upregulated by ASCL1 (4). NCAM1 (neural cell adhesion molecule, CD56) is an adhesion glycoprotein that mediates neuronal attachment, neurite extension, and is a marker for the neuroendocrine phenotype (5). Thyroid transcription factor 1 (TTF-1), a member of the NKX homeobox transcription factor family, is expressed in malignant tumors of the thyroid and lung, and it is commonly used as a marker for both primary and malignant lung cancers (6-8). Enolase-2 is a glycolytic enzyme that is involved in the conversion of 2-phosphoglycerate to phosphoenolpyruvate (9). Research studies have shown elevated levels of neuro-specific enolase-2 in neuroblastoma and SCLC (10,11). Chromogranin A (CHGA) is a member of the chromogranin/secretogranin family of neuroendocrine secretory proteins. It is expressed in the secretory vesicles of neurons and endocrine cells (1,2). CHGA is also useful as a serological and immunohistological marker for the presence of neuroendocrine tumors from various tissue sources (12,13). POU2F3 and YAP drive non-neuroendocrine phenotypes. POU2F3 is normally selectively expressed in chemosensory tuft cells, and SCLC expressing POU2F3 resemble that cell type (14). YAP is widely recognized as a key mediator of the Hippo growth signaling pathway (15). Expression of these key biomarkers in SCLC are thought to help predict therapeutic treatment (16).

Background References

1. Sung, H. et al. (2021) *CA Cancer J Clin* 71, 209-249.
2. Baine, M.K. et al. (2020) *J Thorac Oncol* 15, 1823-1835.
3. Rudin, C.M. et al. (2019) *Nat Rev Cancer* 19, 289-297.
4. Borromeo, M.D. et al. (2016) *Cell Rep* 16, 1259-1272.
5. Seidenfaden, R. et al. (2003) *Mol Cell Biol* 23, 5908-18.
6. Whithaus, K. et al. (2012) *Arch Pathol Lab Med* 136, 155-62.
7. Yoshida, A. et al. (2011) *Lung Cancer* 72, 309-15.

8. Moldvay, J. et al. (2004) *Pathol Oncol Res* 10, 85-8.
9. Van Obberghen, E. et al. (1988) *J Neurosci Res* 19, 450-6.
10. Stern, P. et al. (2007) *Tumour Biol* 28, 84-92.
11. O'Shea, P. et al. (1995) *Ir J Med Sci* 164, 31-6.
12. Weisbrod, A.B. et al. (2013) *Horm Cancer* 4, 165-75.
13. Annaratone, L. et al. (2014) *Endocr Pathol* 25, 219-28.
14. Rudin, C.M. et al. (2019) *Nat Rev Cancer* 19, 289-297.
15. Zhao, B. et al. (2010) *Genes Dev* 24, 862-74.
16. Wang, W.Z. et al. (2022) *Semin Cancer Biol* 00095-5, doi: 10.1016/j.semcancer.2022.04.001.

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