Revision 2

Store at -20C

#95830

ATRX/Daxx Antibody Sampler Kit

1 Kit (4 x 20 microliters)

Cell Signaling TECHNOLOGY®

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

Product Includes	Product #	Quantity	Mol. Wt	Isotype/Source
ATRX (D1N2E) Rabbit mAb	14820	20 µl	280 kDa	Rabbit IgG
Daxx (25C12) Rabbit mAb	4533	20 µl	110 kDa	Rabbit IgG
Tri-Methyl-Histone H3 (Lys9) (D4W1U) Rabbit mAb	13969	20 µl	17 kDa	Rabbit IgG
Histone H3 (D1H2) XP® Rabbit mAb	4499	20 µl	17 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 ATRX/Daxx Antibody Sampler Kit provides an economical means of detecting ATRX and Daxx as well as related histone marks using antibodies. 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

α-thalassemia/mental retardation X-linked (ATRX) is a transcriptional regulator and helicase that belongs to the SNF2 family of chromatin remodeling proteins (1,2). Together with its binding partner death-associated protein 6 (Daxx), ATRX acts as histone chaperone to deposit histone variant H3.3 at repetitive DNA sequences such as telomeric, pericentric, and ribosomal gene repeats (3-6). ATRX is involved in many nuclear functions that ensure proper sister chromatid cohesion during mitosis and chromosome alignment during meiosis (7,8). The ATRX transcriptional regulator also plays a role in the maintenance of telomere integrity and the regulation of gene expression during mammalian development by influencing DNA methylation patterns at high DNA repeat sequences (9,10). Mutations in the corresponding *ATRX* gene results in ATR-X syndrome, an X-linked disorder characterized by intellectual disabilities, craniofacial abnormalities, and mild α-thalassemia (11,12). Research studies indicate that the loss of ATRX protein occurs in numerous cancers, including pancreatic neuroendocrine tumors (PanNETs) and pediatric glioblastoma, where telomere maintenance occurs independently of telomerase (13-16).

Daxx is a ubiquitously expressed protein that was originally identified through a yeast two-hybrid screen as an interactor with the cytoplasmic domain of Fas. It was found to enhance Fas-mediated apoptosis and activate the JNK pathway (17). However, additional studies have revealed that Daxx is actually a nuclear protein localizing to promyelocytic leukemia oncogenic domains (PODs) (18,19). Nuclear interactions have since been observed with CENP-C (20), Pax3 (22), DNA methyltransferase I (21) and chromatin-associated proteins, including histone deacetylase II, H2A, H2B, H3, H4, and Dek. Roles for Daxx have been suggested in transcriptional repression and cell cycle control. Loss of Daxx in mice leads to embryonic lethality with extensive developmental apoptosis, suggesting a role for Daxx directly or indirectly in suppressing cell death (22). Furthermore, inhibition of Daxx expression using RNAi has confirmed Daxx to be anti-apoptotic and to repress transcriptional activity of targets, including NF-κB and E2F-1 (23).

Background References

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