Revision 4

Store at -20C

#83200

AhR (D5S6H) Rabbit mAb

Cell Signaling TECHNOLOGY®

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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W, IP, ChIP, C&R	H	Endogenous	100	Rabbit IgG	#P35869	196

Product Usage Information

For optimal ChIP results, use 10 µl of antibody and 10 µg of chromatin (approximately 4 x 10^6 cells) per IP. This antibody has been validated using SimpleChIP® Enzymatic Chromatin IP Kits.

Application	Dilution
Western Blotting	1:1000
Immunoprecipitation	1:100
Chromatin IP	1:50
CUT&RUN	1:50

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

AhR (D5S6H) Rabbit mAb recognizes endogenous levels of total AhR protein.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues near the carboxy terminus of human AhR protein.

Background

The aryl hydrocarbon receptor (AhR) is a ligand activated transcription factor involved in xenobiotic metabolism, cell cycle regulation, and development in response to both endogenous and environmental signals (1,2). AhR was initially identified as a receptor for dioxins, which are environmental pollutants generated by waste incineration and other industrial processes (3,4). AhR ligands include polycyclic aromatic hydrocarbons, including the carcinogen benzo(a)pyrene and other components of cigarette smoke (3,4). Naturally occurring AhR ligands include flavonoids, which are aromatic plant secondary compounds commonly found in vegetables and fruits (3). Cytoplasmic aryl hydrocarbon receptors are found in protein complexes with heat shock proteins. Upon ligand binding, AhR dissociates from heat shock proteins and translocate to the nucleus where it dimerizes with AhR nuclear translocator (ARNT, HIF-1β). The AhR/ARNT heterodimer binds to nuclear xenobiotic response elements to control the expression of genes associated with xenobiotic metabolism, including several cytochrome P450 genes (5,6). AhR is ubiquitously expressed and is thought to play a role in regulation of cell proliferation and differentiation, cytokine expression, and xenobiotic metabolism (2). Research studies link AhR activity with the control of regulatory T-cell and T-helper 17 cell differentiation, regulation of the inflammatory response, and the onset of lung cancer (1,2,7,8).

Background References

1. Quintana, F.J. (2013) *Immunology* 138, 183-9.
2. Tsay, J.J. et al. (2013) *Anticancer Res* 33, 1247-56.
3. Denison, M.S. and Nagy, S.R. (2003) *Annu Rev Pharmacol Toxicol* 43, 309-34.
4. Poland, A. and Knutson, J.C. (1982) *Annu Rev Pharmacol Toxicol* 22, 517-54.
5. Denison, M.S. et al. (2002) *Chem Biol Interact* 141, 3-24.
6. Beischlag, T.V. et al. (2008) *Crit Rev Eukaryot Gene Expr* 18, 207-50.
7. Quintana, F.J. et al. (2008) *Nature* 453, 65-71.
8. Hayden, M.S. and Ghosh, S. (2004) *Genes Dev* 18, 2195-224.

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 nonfat dry milk, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

W: Western Blotting **IP:** Immunoprecipitation **ChIP:** Chromatin IP **C&R:** CUT&RUN

Cross-Reactivity Key

H: Human

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