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#83200

AhR (D5S6H) Rabbit mAb

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Entrez-Gene ID #196
UniProt ID #P35869

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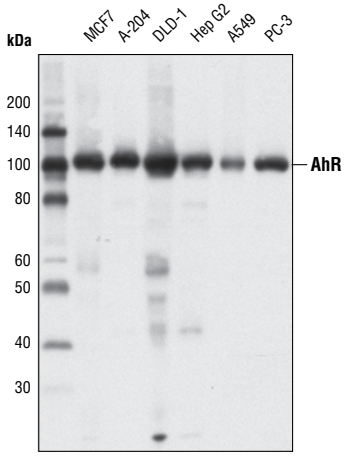
Applications	Species Cross-Reactivity*	Molecular Wt.	Isotype
W, IP, ChIP	H	100 kDa	Rabbit IgG**
Endogenous			

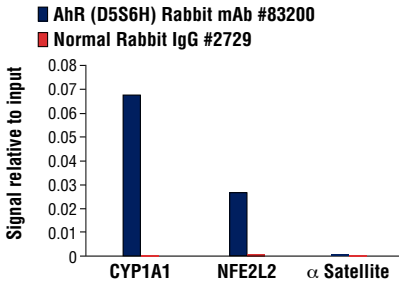
Background: The aryl hydrocarbon receptor (AhR) is a ligand activated transcription factor involved in xenobiotic metabolism, cell cycle regulation, and development in response to both endogenous and environmental signals (1,2). AhR was initially identified as a receptor for dioxins, which are environmental 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).

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.



Western blot analysis of extracts from various cell lines using AhR (D5S6H) Rabbit mAb.



Chromatin immunoprecipitations were performed with cross-linked chromatin from T47D cells treated with BNF (1 µM, 45 min) and either AhR (D5S6H) XP® Rabbit mAb #83200 or Normal Rabbit IgG #2729 using SimpleChIP® Enzymatic Chromatin IP Kit (Magnetic Beads) #9003. The enriched DNA was quantified by real-time PCR using human CYP1A1 promoter primers, SimpleChIP® Human NFE2L2 Intron 1 Primers #81126, and SimpleChIP® Human α Satellite Repeat Primers #4486. The amount of immunoprecipitated DNA in each sample is represented as signal relative to the total amount of input chromatin, which is equivalent to one.

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.*

***Species cross-reactivity is determined by western blot.**

****Anti-rabbit secondary antibodies must be used to detect this antibody.**

Recommended Antibody Dilutions:

Western blotting	1:1000
Immunoprecipitation	1:100
Chromatin IP	1:50

Optimal ChIP conditions: 10 µl of antibody & 10 µg of chromatin (4 x 10^6 cells) per IP. Antibody validated using SimpleChIP® Enzymatic ChIP Kits.

For product specific protocols and a complete listing of recommended companion products please see the product web page at www.cellsignal.com

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.

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

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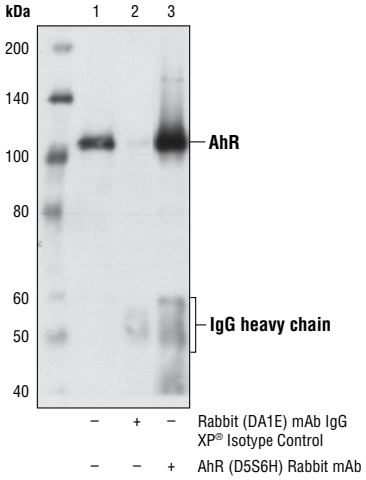
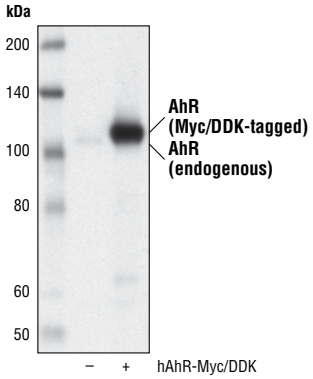
Applications: **W**—Western **IP**—Immunoprecipitation **IHC**—Immunohistochemistry **ChIP**—Chromatin Immunoprecipitation **IF**—Immunofluorescence **F**—Flow cytometry **E-P**—ELISA-Peptide **Species Cross-Reactivity:** **H**—human **M**—mouse **R**—rat **Hm**—hamster **Mk**—monkey **Mi**—mink **C**—chicken **Dm**—D. melanogaster **X**—Xenopus **Z**—zebrafish **B**—bovine **Dg**—dog **Pg**—pig **Sc**—S. cerevisiae **Ce**—C. elegans **Hr**—Horse **All**—all species expected Species enclosed in parentheses are predicted to react based on 100% homology.



Immunoprecipitation of AhR from A-204 cell extracts. Lane 1 is 10% input, lane 2 is immunoprecipitation with Rabbit (DA1E) mAb IgG XP® Isotype Control #3900, and lane 3 is immunoprecipitation with AhR (D5S6H) Rabbit mAb. Western blot analysis was performed using AhR (D5S6H) Rabbit mAb.



Western blot analysis of extracts from 293T cells, mock transfected (-) or transfected with a construct expressing Myc/DDK-tagged full-length human AhR protein (hAhR-Myc/DDK; +), using AhR (D5S6H) Rabbit mAb.