

Monoclonal Antibody to Aromatase (376-390) - Supernatant

Alternate names:	ARO1, CYAR, CYP19, CYP19A1, CYPXIX, Cytochrome P450 19A1, Estrogen synthetase, P450AROM
Catalog No.:	SM2222PT
Quantity:	50 µl
Background:	Aromatase is a key enzyme in steroidogenesis and plays an important role in sexual differentiation, oestrogen biosynthesis, fertility and carcinogenesis. It is highly conserved amongst mammals, and is highly expressed in placental tissue. Many environmental chemicals may influence aromatase activity and thereby disrupt endocrine function.
Uniprot ID:	P11511
NCBI:	9606
GeneID:	1588
Host / Isotype:	Mouse / IgG2a
Clone:	H4
Immunogen:	Synthetic peptide corresponding to amino acids 376-390 of Human Aromatase.
Format:	State: Liquid 10 x Concentrated Tissue Culture Supernatant Preservatives: 0.09% Sodium Azide
Applications:	Immunocytochemistry (See Ref. 15; Oki 2012). Immunohistochemistry on Paraffin Sections: 1/100. Heat induced antigen retrieval with citrat buffer, pH 6.2 using a pressure cooker was preformed. Sections were blocking using a commercially available casein solution. Signal was generated using a commercially available polymer HRP detection system and DAB. This antibody has been described to work on paraffin sections without antigen retrieval using heat treatment. Recommended Positive Control Tissue: Human placenta (See Ref. 11; Jeong 2010). Western Blot: 1/250. Detects a band of approximately 55 kD in human placental extracts (See Ref. 4; Sirianni 2009). P450 aromatase is highly expressed in placental tissue. For tissues where there may be low expression of P450 aromatase, the use of microsomal extracts may improve the staining for Western blots using this antibody (See Ref. 1; Turner 2002). Other applications not tested. Optimal dilutions are dependent on conditions and should be determined by the user.

- Specificity:** This antibody SM2222P (Clone H4) recognizes a conserved epitope within Cytochrome P450 Aromatase (P450 arom).
Negative Species: Giraffe.
Species: Human, Rat, Marmoset, Chicken, Mouse, Pig, Baboon, Bovine, Horse, Great fruit eating bat, Rabbit, Sheep, Collared peccary and Goat.
Other species not tested.
- Storage:** Store undiluted at 2-8°C for one month or (in aliquots) at -20°C for longer.
Avoid repeated freezing and thawing.
Shelf life: one year from despatch.
- Product Citations:** **Purchased from Acris:**
1. Colette S, Lousse JC, Defrère S, Curaba M, Heilier JF, Van Langendonck A, et al. Absence of aromatase protein and mRNA expression in endometriosis. *Hum Reprod.* 2009 Sep;24(9):2133-41. doi: 10.1093/humrep/dep199. Epub 2009 Jun 2. PubMed PMID: 19493871.
 2. Bender RA, Zhou L, Wilkars W, Fester L, Lanowski JS, Paysen D, et al. Roles of 17 β -estradiol involve regulation of reelin expression and synaptogenesis in the dentate gyrus. *Cereb Cortex.* 2010 Dec;20(12):2985-95. doi: 10.1093/cercor/bhq047. Epub 2010 Apr 26. PubMed PMID: 20421250.
 3. Horling K, Santos AN, Fischer B. The AhR is constitutively activated and affects granulosa cell features in the human cell line KGN. *Mol Hum Reprod.* 2011 Feb;17(2):104-14. doi: 10.1093/molehr/gaq074. Epub 2010 Sep 7. PubMed PMID: 20823264.
 4. Schicht M, Ernst J, Nielitz A, Fester L, Tsokos M, Guddat SS, et al. Articular cartilage chondrocytes express aromatase and use enzymes involved in estrogen metabolism. *Arthritis Res Ther.* 2014 Apr 11;16(2):R93. doi: 10.1186/ar4539. PubMed PMID: 24725461.
- General Readings:**
1. Turner KJ, Macpherson S, Millar MR, McNeilly AS, Williams K, Cranfield M, et al. Development and validation of a new monoclonal antibody to mammalian aromatase. *J Endocrinol.* 2002 Jan;172(1):21-30. PubMed PMID: 11786371.
 2. Lu Y, Amleh A, Sun J, Jin X, McCullough SD, Baer R, et al. Ubiquitination and proteasome-mediated degradation of BRCA1 and BARD1 during steroidogenesis in human ovarian granulosa cells. *Mol Endocrinol.* 2007 Mar;21(3):651-63. Epub 2006 Dec 21. PubMed PMID: 17185394.
 3. Zhao D, McBride D, Nandi S, McQueen HA, McGrew MJ, Hocking PM, et al. Somatic sex identity is cell autonomous in the chicken. *Nature.* 2010 Mar 11;464(7286):237-42. doi: 10.1038/nature08852. PubMed PMID: 20220842.
 4. Sirianni R, Chimento A, De Luca A, Zolea F, Carpino A, Rago V, et al. Inhibition of cyclooxygenase-2 down-regulates aromatase activity and decreases proliferation of Leydig tumor cells. *J Biol Chem.* 2009 Oct 16;284(42):28905-16. doi: 10.1074/jbc.M109.041020. Epub 2009 Aug 13. PubMed PMID: 19679653.
 5. Carpino A, Rago V, Pezzi V, Carani C, Andò S. Detection of aromatase and estrogen receptors (ER α , ER β 1, ER β 2) in human Leydig cell tumor. *Eur J Endocrinol.* 2007 Aug;157(2):239-44. PubMed PMID: 17656605.
 6. Catalano S, Malivindi R, Giordano C, Gu G, Panza S, Bonofiglio D, et al. Farnesoid X receptor, through the binding with steroidogenic factor 1-responsive element, inhibits aromatase expression in tumor Leydig cells. *J Biol Chem.* 2010 Feb 19;285(8):5581-93. doi: 10.1074/jbc.M109.052670. Epub 2009 Dec 21. PubMed PMID: 20026603.
 7. Wu YG, Bennett J, Talla D, Stocco C. Testosterone, not 5 α -dihydrotestosterone, stimulates LRH-1 leading to FSH-independent expression of Cyp19 and P450scc in granulosa cells. *Mol Endocrinol.* 2011 Apr;25(4):656-68. doi: 10.1210/me.2010-0367. Epub 2011 Jan 27. PubMed PMID: 21273442.
 8. Lu Y, Kang T, Hu Y. BRCA1/BARD1 complex interacts with steroidogenic factor 1--A potential mechanism for regulation of aromatase expression by BRCA1. *J Steroid Biochem Mol Biol.* 2011 Jan;123(1-2):71-8. doi: 10.1016/j.jsbmb.2010.11.006. Epub 2010 Nov 16.

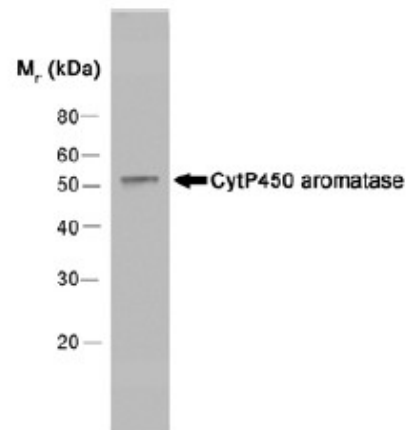
PubMed PMID: 21087664.

9. Barone I, Cui Y, Herynk MH, Corona-Rodriguez A, Giordano C, Selever J, et al. Expression of the K303R estrogen receptor-alpha breast cancer mutation induces resistance to an aromatase inhibitor via addiction to the PI3K/Akt kinase pathway. *Cancer Res.* 2009 Jun 1;69(11):4724-32. doi: 10.1158/0008-5472.CAN-08-4194. PubMed PMID: 19487288.
10. Ghosh S, Lu Y, Hu Y. A Role of CREB in BRCA1 Constitutive Promoter Activity and Aromatase Basal Expression. *Int J Biomed Sci.* 2008 Dec 15;4(4):260-265. PubMed PMID: 19568323.
11. Jeong JH, Jung YK, Kim HJ, Jin JS, Kim HN, Kang SM, et al. The gene for aromatase, a rate-limiting enzyme for local estrogen biosynthesis, is a downstream target gene of Runx2 in skeletal tissues. *Mol Cell Biol.* 2010 May;30(10):2365-75. doi: 10.1128/MCB.00672-09. Epub 2010 Mar 15. PubMed PMID: 20231365.
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14. Stabile, L.P. et al. (2012) Prevention of Tobacco Carcinogen-Induced Lung Cancer in Female Mice Using Anti-Estrogens. *Carcinogenesis.* Aug 2. [Epub ahead of print]
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Pictures:

Western blot analysis of Human placenta extract probed with anti Human Cytochrome P450 Aromatase Antibody Cat.-No SM2222P/PS (Clone H4) followed by F(ab')₂ Rabbit anti Mouse IgG-HRP (Cat.-No SP1012HRP).



Staining of FFPE Human placenta with Aromatase (10x and 40x) Antibody Cat.-No SM2222PS (Clone H4) at 1/100 dilution. Antibody positive in the cell membrane of epithelial cells.

