Datasheet: MCA2077S

BATCH NUMBER 151974

Description:	MOUSE ANTI HUMAN CYTOCHROME P450 AROMATASE
Specificity:	CYTOCHROME P450 AROMATASE
Format:	10 X Concentrate
Product Type:	Monoclonal Antibody
Clone:	H4
Isotype:	IgG2a
Quantity:	1 ml

Product Details

Applications

This product has been reported to work in the following applications. This information is derived from testing within our laboratories, peer-reviewed publications or personal communications from the originators. Please refer to references indicated for further information. For general protocol recommendations, please visit www.bio-rad-antibodies.com/protocols.

	Yes	No	Not Determined	Suggested Dilution
Flow Cytometry			▪	
Immunohistology - Frozen			▪	
Immunohistology - Paraffin	▪			
ELISA			▪	
Immunoprecipitation			▪	
Western Blotting	▪			1/250
Immunofluorescence	▪			

Where this antibody has not been tested for use in a particular technique this does not necessarily exclude its use in such procedures. Suggested working dilutions are given as a guide only. It is recommended that the user titrates the antibody for use in their own system using appropriate negative/positive controls.

Target Species

Human

Species Cross Reactivity

Reacts with: Rat, Marmoset, Chicken, Mouse, Pig, Baboon, Bovine, Horse, Great fruit eating bat, Rabbit, Sheep, Collared peccary, Goat, Minke whale, Bryde's whale, Sei whale
Does not react with:Giraffe
N.B. Antibody reactivity and working conditions may vary between species. Cross reactivity is derived from testing within our laboratories, peer-reviewed publications or personal communications from the originators. Please refer to references indicated for further information.

Product Form

Concentrated Tissue Culture Supernatant - liquid

Preservative Stabilisers	0.1% Sodium Azide
Immunogen	Synthetic peptide corresponding to amino acids 376 - 390 of human aromatase.
External Database Links	**UniProt:** P11511 Related reagents **Entrez Gene:** 1588 CYP19A1 Related reagents
Synonyms	ARO1, CYAR, CYP19
RRID	AB_566942
Fusion Partners	Spleen cells from immunised Balb/c were fused with with cells of the mouse SP20 myeloma cell line.
Specificity	**Mouse anti Human Cytochrome P450 aromatase antibody, clone H4** recognizes a conserved epitope within cytochrome P450 aromatase (P450 arom). P450 arom plays an important role in estrogen biosynthesis and is highly conserved amongst mammals. P450 arom is highly expressed in placental tissue. For tissues where there may be low expression of P450 arom, the use of microsomal extracts may improve the staining for Western blots using Mouse anti Human Cytochrome P450 aromatase antibody, clone H4 (Turner *et al.* 2002).
Histology Positive Control Tissue	Human placenta
Western Blotting	Mouse anti Human p450 Aromatase antibody, clone H4 detects a band of approximately 55 kDa in human placental extracts.
References	1. Lu, Y. *et al.* (2007) Ubiquitination and proteasome-mediated degradation of BRCA1 and BARD1 during steroidogenesis in human ovarian granulosa cells. Mol Endocrinol. 21 (3): 651-63. 2. Lanzino, M. *et al.* (2013) DAX-1, as an androgen-target gene, inhibits aromatase expression: a novel mechanism blocking estrogen-dependent breast cancer cell proliferation. Cell Death Dis. 4: e724. 3. Zhao, D. *et al.* (2010) Somatic sex identity is cell autonomous in the chicken. Nature. 464: 237-42. 4. Sirianni, R. *et al.* (2009) Inhibition of cyclooxygenase-2 down-regulates aromatase activity and decreases proliferation of Leydig tumor cells. J Biol Chem. 284: 28905-16. 5. Carpino, A. *et al.* (2004) Aromatase immunolocalization in human ductuli efferentes and proximal ductus epididymis. J Anat. 204: 217-20. 6. Catalano, S. *et al.* (2010) Farnesoid X receptor, through the binding with steroidogenic factor 1-responsive element, inhibits aromatase expression in tumor Leydig cells. J Biol Chem. 285: 5581-93. 7. Wu, Y.G. *et al.* (2011) Testosterone, not 5{alpha}-Dihydrotestosterone, Stimulates

LRH-1 Leading to FSH-Independent Expression of Cyp19 and P450scc in Granulosa Cells. Mol Endocrinol. 25: 656-68.
8. Lu, Y. *et al.* (2011) BRCA1/BARD1 complex interacts with steroidogenic factor 1--A potential mechanism for regulation of aromatase expression by BRCA1. J Steroid Biochem Mol Biol. 123: 71-8.
9. Barone, I. *et al.* (2009) 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. 69: 4724-32.
10. Ghosh, S. *et al.* (2008) A Role of CREB in BRCA1 Constitutive Promoter Activity and Aromatase Basal Expression. Int J Biomed Sci. 4 (4): 260-5.
11. Jeong, J.H. *et al.* (2010) 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. 30: 2365-75.
12. Rago, V. *et al.* (2005) Cytochrome P450 aromatase expression in human seminoma. Reprod Biol Endocrinol. 3: 72.
13. Schmidt, M. *et al.* (2005) Androgen conversion in osteoarthritis and rheumatoid arthritis synoviocytes--androstenedione and testosterone inhibit estrogen formation and favor production of more potent 5alpha-reduced androgens. Arthritis Res Ther. 7: R938-48.
14. Stabile, L.P. *et al.* (2012) Prevention of Tobacco Carcinogen-Induced Lung Cancer in Female Mice Using Anti-Estrogens. Carcinogenesis. 33: 2181-9.
15. Oki, Y. *et al.* (2012) Dedifferentiated follicular granulosa cells derived from pig ovary can transdifferentiate into osteoblasts. Biochem J. 447: 239-48.
16. Campbell, B.K. *et al.* (2012) The role of anti-Müllerian hormone (AMH) during follicle development in a monovulatory species (sheep). Endocrinology. 153: 4533-43.
17. Wilsher, S. *et al.* (2013) Ovarian and placental morphology and endocrine functions in the pregnant giraffe (*Giraffa camelopardalis*). Reproduction. 145: 541-54.
18. Catalano, S. *et al.* (2009) Rapid estradiol/ERalpha signaling enhances aromatase enzymatic activity in breast cancer cells. Mol Endocrinol. 23: 1634-45.
19. Grzesiak, M. *et al.* (2012) Elevated level of 17β-estradiol is associated with overexpression of FSHR, CYP19A1, and CTNNB1 genes in porcine ovarian follicles after prenatal and neonatal flutamide exposure. Theriogenology. 78: 2050-60.
20. Pakarainen, T. *et al.* (2005) Knockout of luteinizing hormone receptor abolishes the effects of follicle-stimulating hormone on preovulatory maturation and ovulation of mouse graafian follicles. Mol Endocrinol. 19: 2591-602.
21. Rago, V. *et al.* (2007) Cytochrome P450arom, androgen and estrogen receptors in pig sperm Reprod Biol Endocrinol. 5: 23.
22. Pannetier, M. *et al.* (2006) FOXL2 activates P450 aromatase gene transcription: towards a better characterization of the early steps of mammalian ovarian development. J Mol Endocrinol. 36: 399-413.
23. Fazleabas, A.T. *et al.* (2003) Steroid receptor and aromatase expression in baboon endometriotic lesions. Fertil Steril. 80: 820-7.
24. Mlodawska, W. and Slomczynska, M. (2010) Immunohistochemical localization of aromatase during the development and atresia of ovarian follicles in prepubertal horses. Theriogenology. 74: 1707-12.
25. Castro, B. *et al.* (2013) Bisphenol A exposure during adulthood alters expression of aromatase and 5α-reductase isozymes in rat prostate. PLoS One. 8: e55905.

26. Oliveira, R.L. *et al.* (2012) Seasonal variation in estrogen receptor ERα, but not ERβ, androgen receptor and aromatase, in the efferent ductules and epididymis of the big fruit-eating bat *Artibeus lituratus*. Gen Comp Endocrinol. 179: 1-13.
27. Hanoux, V. *et al.* (2003) Differential regulation of two 3' end variants of P450 aromatase transcripts and of a new truncated aromatase protein in rabbit preovulatory granulosa cells. Endocrinology. 144: 4790-8.
28. Mayor, P. *et al.* (2006) Ovarian features of the wild collared peccary (Tayassu tajacu) from the northeastern Peruvian Amazon. Gen Comp Endocrinol. 147: 268-75.
29. Gallet, C. *et al.* (2011) The infusion of glucose in ewes during the luteal phase increases the number of follicles but reduces oestradiol production and some correlates of metabolic function in the large follicles. Anim Reprod Sci.127: 154-63.
30. Mann, G.E. *et al.* (2007) Identification of elevated concentrations of estradiol in bovine uterine endometrium. Domest Anim Endocrinol. 33: 437-41.
31. Garcia-Morales, C. *et al.* (2015) Cell-autonomous sex differences in gene expression in chicken bone marrow-derived macrophages. J Immunol. 194 (5): 2338-44.
32. Lee, C.T. *et al.* (2014) 1,25-dihydroxyvitamin D3 increases testosterone-induced 17beta-estradiol secretion and reverses testosterone-reduced connexin 43 in rat granulosa cells. Reprod Biol Endocrinol. 12: 90.
33. Scaramuzzi, R.J. *et al.* (2015) The effects of intravenous, glucose versus saline on ovarian follicles and their levels of some mediators of insulin signalling. Reprod Biol Endocrinol. 13 (1): 6.
34. Kim, S.O. *et al.* (2014) Prostaglandin E2 (EP) receptors mediate PGE2-specific events in ovulation and luteinization within primate ovarian follicles. Endocrinology. 155 (4): 1466-75.
35. Stabile, L.P. *et al.* (2011) Combined analysis of estrogen receptor beta-1 and progesterone receptor expression identifies lung cancer patients with poor outcome. Clin Cancer Res. 17: 154-64.
36. Kitayama C *et al.* (2015) Structure and functions of the placenta in common minke (*Balaenoptera acutorostrata*), Bryde's (*B. brydei*) and sei (*B. borealis*) whales. J Reprod Dev. 61 (5): 415-21.
37. Nguyen, D.P. *et al.* (2017) Association of Aromatase With Bladder Cancer Stage and Long-Term Survival: New Insights Into the Hormonal Paradigm in Bladder Cancer. Clin Genitourin Cancer. 15 (2): 256-262.e1.
38. Baravalle, R. *et al.* (2017) Impact of R264C and R264H polymorphisms in human aromatase function. J Steroid Biochem Mol Biol. 167: 23-32.
39. Panza S *et al.* (2016) Glucocorticoid Receptor as a Potential Target to Decrease Aromatase Expression and Inhibit Leydig Tumor Growth. Am J Pathol. 186 (5): 1328-39.
40. Kobayashi, H. *et al.* (2016) Gastric 17β-estradiol in portal vein and liver Esr1 make a circadian rhythm in systemic circulation in male rats. Endocrine. 53 (2): 565-73.
41. Kato, N. *et al.* (2016) Expression of P450 Aromatase in Granulosa Cell Tumors and Sertoli-Stromal Cell Tumors of the Ovary: Which Cells Are Responsible for Estrogenesis? Int J Gynecol Pathol. 35 (1): 41-7.
42. Jiang, C. *et al.* (2015) Hypoglycosylated hFSH Has Greater Bioactivity Than Fully Glycosylated Recombinant hFSH in Human Granulosa Cells. J Clin Endocrinol Metab. 100 (6): E852-60.
43. Tabęcka-Łonczyńska, A. *et al.* (2016) Retrograde and destination transfer of sex steroid hormones in the spermatic cord vessels of the mature boar (*Sus scrofa*) in short-

daylight and long-daylight periods, as well as vernal and autumnal equinox. Anim Reprod Sci. 164: 1-8.
44. Roche, J. *et al.* (2016) Apelin (APLN) and Apelin Receptor (APLNR) in Human Ovary: Expression, Signaling, and Regulation of Steroidogenesis in Primary Human Luteinized Granulosa Cells. Biol Reprod. 95 (5): 104.
45. Kobayashi, H. *et al.* (2020) Estrogen synthesis in the stomach of Sprague-Dawley rats: comparison to Wistar rats. Exp Anim. Sep 25 [Epub ahead of print].

Storage	Store at +4°C or at -20°C if preferred. This product should be stored undiluted. Storage in frost free freezers is not recommended. Avoid repeated freezing and thawing as this may denature the antibody. Should this product contain a precipitate we recommend microcentrifugation before use.
Guarantee	12 months from date of despatch
Health And Safety Information	Material Safety Datasheet documentation #10336 available at: https://www.bio-rad-antibodies.com/SDS/MCA2077S 10336
Regulatory	For research purposes only

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