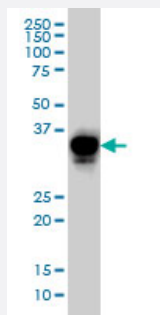


CRX monoclonal antibody (M02), clone 4G11

Catalog # H00001406-M02

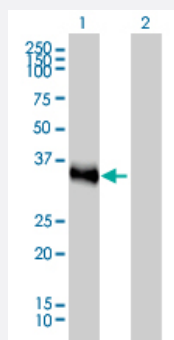
Size 100 ug

Applications



Western Blot (Cell lysate)

CRX monoclonal antibody (M02), clone 4G11 Western Blot analysis of CRX expression in IMR-32 (Cat # L008V1).

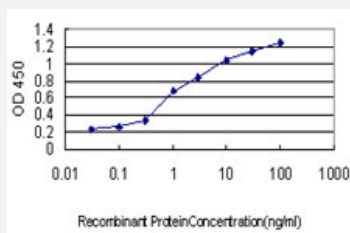


Western Blot (Transfected lysate)

Western Blot analysis of CRX expression in transfected 293T cell line by CRX monoclonal antibody (M02), clone 4G11.

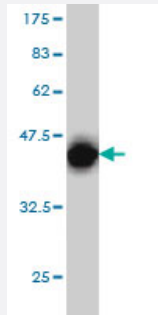
Lane 1: CRX transfected lysate(32 KDa).

Lane 2: Non-transfected lysate.



Sandwich ELISA (Recombinant protein)

Detection limit for recombinant GST tagged CRX is approximately 0.03ng/ml as a capture antibody.



Western Blot detection against Immunogen (36.19 KDa) .

Specification

Product Description	Mouse monoclonal antibody raised against a partial recombinant CRX.
Immunogen	CRX (NP_000545, 1 a.a. ~ 95 a.a) partial recombinant protein with GST tag. MW of the GST tag alone is 26 KDa.
Sequence	MMA YMNP GPHYS VNALALSGPSVDLMHQAVPYPSAPRKQRRERTTFTRSQLEEELEALFAKTQYP D VYAREEEVALKINLPESRVQVWFKNRRRAKCR
Host	Mouse
Reactivity	Human
Interspecies Antigen Sequence	Mouse (98); Rat (99)
Isotype	IgG2a Kappa
Quality Control Testing	Antibody Reactive Against Recombinant Protein. Western Blot detection against Immunogen (36.19 KDa) .
Storage Buffer	In 1x PBS, pH 7.4
Storage Instruction	Store at -20°C or lower. Aliquot to avoid repeated freezing and thawing.

Applications

- Western Blot (Cell lysate)

CRX monoclonal antibody (M02), clone 4G11 Western Blot analysis of CRX expression in IMR-32 (Cat # L008V1).

[Protocol Download](#)

- Western Blot (Transfected lysate)

Western Blot analysis of CRX expression in transfected 293T cell line by CRX monoclonal antibody (M02), clone 4G11.

Lane 1: CRX transfected lysate(32 KDa).

Lane 2: Non-transfected lysate.

[Protocol Download](#)

- Western Blot (Recombinant protein)

[Protocol Download](#)

- Sandwich ELISA (Recombinant protein)

Detection limit for recombinant GST tagged CRX is approximately 0.03ng/ml as a capture antibody.

[Protocol Download](#)

- ELISA

Gene Info — CRX

Entrez GeneID [1406](#)

GeneBank Accession# [NM_000554](#)

Protein Accession# [NP_000545](#)

Gene Name CRX

Gene Alias CORD2, CRD, LCA7, OTX3

Gene Description cone-rod homeobox

Omim ID [120970 268000 602225](#)

Gene Ontology [Hyperlink](#)

Gene Summary The protein encoded by this gene is a photoreceptor-specific transcription factor which plays a role in the differentiation of photoreceptor cells. This homeodomain protein is necessary for the maintenance of normal cone and rod function. Mutations in this gene are associated with photoreceptor degeneration, Leber congenital amaurosis type III and the autosomal dominant cone-rod dystrophy 2. Several alternatively spliced transcript variants of this gene have been described, but the full-length nature of some variants has not been determined. [provided by RefSeq]

Other Designations cone-rod homeobox protein|orthodenticle homeobox 3

Publication Reference

- [Label-free enrichment of human pluripotent stem cell-derived early retinal progenitor cells for cell-based regenerative therapies.](#)

Yasuaki Iwama, Hiroko Nomaru, Tomohiro Masuda, Yoko Kawamura, Michiru Matsumura, Yuri Murata, Kazuki Teranishi, Kohji Nishida, Sadao Ota, Michiko Mandai, Masayo Takahashi.

Stem Cell Reports 2024 Feb; 19(2):254.

Application: IHC, Human, Human Retina

- [Expression patterns of CYP26A1, FGF8, CDKN1A, and NPVF in the developing rhesus monkey retina.](#)

Miranda R Krueger, Elizabeth Fishman-Williams, Sergi Simó, Alice F Tarantal, Anna La Torre.

Differentiation 2024 Feb; 135:100743.

Application: IHC, Monkey, Monkey fetal eyes

- [Human retinal organoids with an OPA1 mutation are defective in retinal ganglion cell differentiation and function.](#)

Qiannan Lei, Kangjian Xiang, Lin Cheng, Mengqing Xiang.

Stem Cell Reports 2024 Jan; 19(1):68.

Application: IS, Human, Induced pluripotent stem cell

- [CRX haploinsufficiency compromises photoreceptor precursor translocation and differentiation in human retinal organoids.](#)

Deng Pan, Xiao Zhang, Kangxin Jin, Zi-Bing Jin.

Stem Cell Research & Therapy 2023 Dec; 14(1):346.

Application: IF, Human, Retinal organoids (hESCs)

- [REG1A protects retinal photoreceptors from blue light damage.](#)

Ze-Hua Xu, Hang Zhang, Chang-Jun Zhang, Si-Jian Yu, Jing Yuan, Kangxin Jin, Zi-Bing Jin

Annals of the New York Academy of Sciences 2023 Sep; 1527(1):60.

Application: IF, Human, Human ESC, Human iPSC cells

- [Photoreceptor laminin drives differentiation of human pluripotent stem cells to photoreceptor progenitors that partially restore retina function.](#)

Hwee Goon Tay, Helder Andre, Vicki Chrysostomou, Swarnaseetha Adusumalli, Jing Guo, Xiaoyuan Ren, Wei Sheng Tan, Jia En Tor, Aida Moreno-Moral, Flavia Plastino, Hammurabi Bartuma, Zuhua Cai, Sai Bo Bo Tun, Veluchamy Amutha Barathi, Gavin Tan Siew Wei, Gianluca Greci, Li Yen Chong, Arne Holmgren, Anders Kventa, Crowston Jonathan Guy, Enrico Petretto, Karl Tryggvason.

Molecular Therapy 2023 Jan; S1525-0016(22):00716-X.

Application: IF, Human, HS1001, H1 cells

- [MLL5 is involved in retinal photoreceptor maturation through facilitating CRX-mediated photoreceptor gene transactivation.](#)

Xiaoming Zhang, Bo-Wen Zhang, Lue Xiang, Hui Wu, SUPIT Alva Sahiri Alexander, Peipei Zhou, Melvin Zi-Yu Dai, Xiaoyun Wang, Wenjun Xiong, Yan Zhang, Zi-Bing Jin, Lih-Wen Deng

iScience 2022 Apr; 25(4):104058.

Application: IP-WB, Human, Mouse, 661W cells, HEK 293T (Bosc 23) cells

- [Evaluation of photoreceptor-directed fibroblasts derived from retinitis pigmentosa patients with defects in the EYS gene: a possible cost-effective cellular model for mechanism-oriented drug.](#)

Dilip Rai, Masaki Iwanami, Yoriko Takahashi, Yukari Komuta, Noriyuki Aoi, Akihiro Umezawa, Yuko Seko.

Stem Cell Research & Therapy 2022 Apr; 13(1):157.

Application: IF, Human, Human dermal fibroblasts

- [Pigment epithelium-derived factor engineered to increase glycosaminoglycan affinity while maintaining bioactivity.](#)

Hunghao Chu, Ivan T Rebustini, S Patricia Becerra, Yadong Wang.

Biochemical and Biophysical Research Communications 2022 May; 605:148.

Application: IF, Mouse, Mouse retinal

- [Gene regulatory networks controlling temporal patterning, neurogenesis, and cell-fate specification in mammalian retina.](#)

Pin Lyu, Thanh Hoang, Clayton P Santiago, Eric D Thomas, Andrew E Timms, Haley Appel, Megan Gimmen, Nguyet Le, Lizhi Jiang, Dong Won Kim, Siqi Chen, David F Espinoza, Ariel E Telger, Kurt Weir, Brian S Clark, Timothy J Cherry, Jiang Qian, Seth Blackshaw.

Cell Reports 2021 Nov; 37(7):109994.

Application: IHC, Mouse, Retina

- [Modeling retinitis pigmentosa through patient-derived retinal organoids.](#)

Yan-Ping Li, Wen-Li Deng, Zi-Bing Jin.

STAR Protocols 2021 Apr; 2(2):100438.

Application: IF, IHC, Human, Human retinal organoids

- [Differentiation Protocol for 3D Retinal Organoids, Immunostaining and Signal Quantitation.](#)

Hannah Döpfer, Julia Menges, Morgane Bozet, Alexandra Brenzel, Dietmar Lohmann, Laura Steenpass, Deniz Kanber.

Current Protocols in Stem Cell Biology 2020 Dec; 55(1):e120.

Application: IF, IHC-Fr, Human, Human retina

- [Single-Cell Analysis of Human Retina Identifies Evolutionarily Conserved and Species-Specific Mechanisms Controlling Development.](#)

Yufeng Lu, Fion Shiau, Wenyang Yi, Suying Lu, Qian Wu, Joel D Pearson, Alyssa Kallman, Suijuan Zhong, Thanh Hoang, Zhentao Zuo, Fangqi Zhao, Mei Zhang, Nicole Tsai, Yan Zhuo, Sheng He, Jun Zhang, Genevieve L Stein-O'Brien, Thomas D Sherman, Xin Duan, Elana J Fertig, Loyal A Goff, Donald J Zack, James T Handa, Tian Xue, Rod Bremner, Seth Blackshaw, Xiaoqun Wang, Brian S Clark.

Developmental Cell 2020 May; 53(4):473.

Application: IF, Human, Human retina

- [Patient-Specific Retinal Organoids Recapitulate Disease Features of Late-Onset Retinitis Pigmentosa.](#)

Mei-Ling Gao, Xin-Lan Lei, Fang Han, Kai-Wen He, Si-Qian Jin, You-You Zhang, Zi-Bing Jin.

Frontiers in Cell and Developmental Biology 2020 Mar; 8:128.

Application: IF, IHC-Fr, Human, Human retinal organoids

- [AAV-Mediated Gene Delivery to 3D Retinal Organoids Derived from Human Induced Pluripotent Stem Cells.](#)

Garita-Hernandez M, Routet F, Guibbal L, Khabou H, Toualbi L, Riancho L, Reichman S, Duebel J, Sahel JA, Goureau O, Dalkara D.

International Journal of Molecular Sciences 2020 Feb; 21(3):E994.

Application: IF, IHC-Fr, Mouse, Mouse seventy day-old organoids

- [Differentiation of Retinal Organoids from Human Pluripotent Stem Cells.](#)

Chichagova V, Dorgau B, Felemban M, Georgiou M, Armstrong L, Lako M.

Current Protocols in Stem Cell Biology 2019 Sep; 50(1):e95.

Application: IF, Human, Retinal

- [Gold nanoparticles for multimodal high-resolution imaging of transplanted cells for retinal replacement therapy.](#)

Chemla Y, Betzer O, Markus A, Farah N, Motiei M, Popovtzer R, Mandel Y.

Nanomedicine (London, England) 2019 Jul; 14(14):1857.

Application: Flow Cyt, IF, Human, Human embryonic stem cells

- [An optimized protocol for generating labeled and transplantable photoreceptor precursors from human embryonic stem cells.](#)

Markus A, Shamul A, Chemla Y, Farah N, Shaham L, Goldstein RS, Mandel Y.

Experimental Eye Research 2018 Nov; 180:29.

Application: Flow Cyt, IF, Human, Human embryonic stem cells

- [Characterization and Transplantation of CD73-Positive Photoreceptors Isolated from Human iPSC-Derived Retinal Organoids.](#)

Gagliardi G, Ben M'Barek K, Chaffiol A, Slembrouck-Brec A, Conart JB, Nanteau C, Rabesandratana O, Sahel JA, Duebel J, Orioux G, Reichman S, Goureau O.

Stem Cell Reports 2018 Sep; 11(3):665.

Application: IS, Human, CrxP_H2BmCherry hiPSC line

- [Extracellular matrix component expression in human pluripotent stem cell-derived retinal organoids recapitulates retinogenesis in vivo and reveals an important role for IMPG1 and CD44 in the development of photoreceptors and interphotoreceptor matrix.](#)

Felemban M, Dorgau B, Hunt NC, Hallam D, Zerti D, Bauer R, Ding Y, Collin J, Steel D, Krasnogor N, Al-Aama J, Lindsay S, Mellough C, Lako M.

Acta Biomaterialia 2018 Jul; 74:207.

Application: IHC-P, Human, Monkey, Mouse, eye

- [Analysis of human ES cell differentiation establishes that the dominant isoforms of the lncRNAs RMST and FIRRE are circular.](#)

Izuogu OG, Alhasan AA, Mellough C, Collin J, Gallon R, Hyslop J, Mastroianni FK, Ehrmann I, Lako M, Elliott DJ, Santibanez-Koref M, Jackson MS.

BMC Genomics 2018 Apr; 19(1):276.

Application: IF, Human, H9 embryonic stem cells

- [Notch suppression collaborates with Ascl1 and Lin28 to unleash a regenerative response in fish retina, but not in mice.](#)

Elsaeidi F, Macpherson P, Mills EA, Jui J, Flannery JG, Goldman D.

Journal of Neuroscience 2018 Feb; 38(9):2246.

Application: IF, Fish, Fish retina

- [Generation of Photoreceptor Precursors from Mouse Embryonic Stem Cells.](#)

Lu AQ, Barnstable CJ.

Stem Cell Reviews 2018 Apr; 14(2):247.

Application: IF, Mouse, Mouse embryonic stem cells

- [Characterization and pharmacologic targeting of EZH2, a fetal retinal protein and epigenetic regulator, in human retinoblastoma.](#)

Khan M, Walters LL, Li Q, Thomas DG, Miller JM, Zhang Q, Sciallis AP, Liu Y, Dlouhy BJ, Fort PE, Archer SM, Demirci H, Dou Y, Rao RC.

Laboratory Investigation 2015 Nov; 95(11):1278.

Application: IF, Human, Mouse, Retinoblastoma cells, Retinal tissue

- [Production of Retinal Cells from Confluent Human iPS Cells.](#)

Reichman S, Goureau O.

Methods in Molecular Biology 2014 Nov; 1357:339.

Application: IHC, Human, hiPS Cells

- [Differentiation of retinal ganglion cells and photoreceptor precursors from mouse induced pluripotent stem cells carrying an atoh7/math5 lineage reporter.](#)

Xie BB, Zhang XM, Hashimoto T, Tien AH, Chen A, Ge J, Yang XJ.

PLoS One 2014 Nov; 9(11):e112175.

Application: IF, Mouse, Atoh7-Cre/ROSA-YFP iPS cells

- [From confluent human iPS cells to self-forming neural retina and retinal pigmented epithelium.](#)

Reichman S, Terray A, Slembrouck A, Nanteau C, Orioux G, Habeler W, Nandrot EF, Sahel JA, Monville C, Goureau O.

PNAS 2014 Jun; 111(23):8518.

Application: IHC, Human, hiRPE cells

- [Mechanistically Distinct Mouse Models for CRX-Associated Retinopathy.](#)

Tran NM, Zhang A, Zhang X, Huecker JB, Hennig AK, Chen S.

PLoS Genetics 2014 Feb; 10(2):e1004111.

Application: IF, Mouse, Retina

- [Transplantation of photoreceptors derived from human Muller glia restore rod function in the P23H rat.](#)

Jayaram H, Jones MF, Eastlake K, Cottrill PB, Becker S, Wiseman J, Khaw PT, Limb GA.

Stem Cells Translational Medicine 2014 Mar; 3(3):323.

Application: ICC, Human, Müller glia with stem cell characteristics

- [The expression of retinal cell markers in human retinal pigment epithelial cells and their augmentation by the synthetic retinoid fenretinide.](#)

Carr AJ, Vugler AA, Yu L, Semo M, Coffey P, Moss SE, Greenwood J.

Mol Vis 2011 Jun; 17:1701.

Application: IF, WB-Ce, Human, ARPE-19 cells

- [Distinct Effects of Hedgehog Signaling on Neuronal Fate Specification and Cell Cycle Progression in the Embryonic Mouse Retina.](#)

Sakagami K, Gan L, Yang XJ.

The Journal of Neuroscience 2009 May; 29(21):6932.

Application: Flow Cyt, Mouse, Retinas

- [BEST1 expression in the retinal pigment epithelium is modulated by OTX family members.](#)

Esumi N, Kachi S, Hackler L Jr, Masuda T, Yang Z, Campochiaro PA, Zack DJ.

Human Molecular Genetics 2008 Oct; 18(1):128.

Application: WB, Bovine, Bovine retinal pigment epithelium (RPE) and retina

- [Crx activates opsin transcription by recruiting HAT-containing co-activators and promoting histone acetylation.](#)

Peng GH, Chen S.

Human Molecular Genetics 2007 Jul; 16(20):3433.

Application: IP-WB, Mouse, Mouse retinal nuclear extracts

Disease

- [Blindness](#)
- [Optic Atrophy](#)
- [Retinal Diseases](#)
- [Retinitis Pigmentosa](#)