

Product datasheet

Anti-Beta Arrestin 2 antibody [EPR22073] α b206972

Recombinant RabMAb

[4 Images](#)

Overview

Product name	Anti-Beta Arrestin 2 antibody [EPR22073]
Description	Rabbit monoclonal [EPR22073] to Beta Arrestin 2
Host species	Rabbit
Specificity	The immunogen used for this product shares 86% homology with Beta Arrestin 1. Cross-reactivity with this protein has not been confirmed experimentally.
Tested applications	Suitable for: WB, Flow Cyt, IP
Species reactivity	Reacts with: Mouse, Rat, Human
Immunogen	Synthetic peptide within Human Beta Arrestin 2 aa 1 to the C-terminus. The exact sequence is proprietary. Database link: P32121
Positive control	WB: HEK-293T, HepG2, Jurkat and HeLa whole cell lysates; Human lung and brain lysates; Mouse and rat brain lysates. Flow Cyt: HeLa cells. IP: HEK-293T whole cell lysate.
General notes	This product is a recombinant monoclonal antibody, which offers several advantages including: <ul style="list-style-type: none"> - High batch-to-batch consistency and reproducibility - Improved sensitivity and specificity - Long-term security of supply - Animal-free production For more information see here . Our RabMAb [®] technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb[®] patents .

Properties

Form	Liquid
Storage instructions	Shipped at 4°C. Store at +4°C short term (1-2 weeks). Upon delivery aliquot. Store at -20°C long term. Avoid freeze / thaw cycle.
Storage buffer	Preservative: 0.01% Sodium azide Constituents: PBS, 40% Glycerol, 0.05% BSA
Purity	Protein A purified

Clonality	Monoclonal
Clone number	EPR22073
Isotype	IgG

Applications

Our [Abpromise guarantee](#) covers the use of **ab206972** in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

Application	Abreviews	Notes
WB		1/1000. Detects a band of approximately 46-55 kDa (predicted molecular weight: 46 kDa).
Flow Cyt		1/600.
IP		1/30.

Target

Function

Functions in regulating agonist-mediated G-protein coupled receptor (GPCR) signaling by mediating both receptor desensitization and resensitization processes. During homologous desensitization, beta-arrestins bind to the GPRK-phosphorylated receptor and sterically preclude its coupling to the cognate G-protein; the binding appears to require additional receptor determinants exposed only in the active receptor conformation. The beta-arrestins target many receptors for internalization by acting as endocytic adapters (CLASPs, clathrin-associated sorting proteins) and recruiting the GPCRs to the adapter protein 2 complex 2 (AP-2) in clathrin-coated pits (CCPs). However, the extent of beta-arrestin involvement appears to vary significantly depending on the receptor, agonist and cell type. Internalized arrestin-receptor complexes traffic to intracellular endosomes, where they remain uncoupled from G-proteins. Two different modes of arrestin-mediated internalization occur. Class A receptors, like ADRB2, OPRM1, ENDRA, D1AR and ADRA1B dissociate from beta-arrestin at or near the plasma membrane and undergo rapid recycling. Class B receptors, like AVPR2, AGTR1, NTSR1, TRHR and TACR1 internalize as a complex with arrestin and traffic with it to endosomal vesicles, presumably as desensitized receptors, for extended periods of time. Receptor resensitization then requires that receptor-bound arrestin is removed so that the receptor can be dephosphorylated and returned to the plasma membrane. Mediates endocytosis of CCR7 following ligation of CCL19 but not CCL21. Involved in internalization of P2RY1, P2RY4, P2RY6 and P2RY11 and ATP-stimulated internalization of P2RY2. Involved in phosphorylation-dependent internalization of OPRD1 and subsequent recycling or degradation. Involved in ubiquitination of IGF1R. Beta-arrestins function as multivalent adapter proteins that can switch the GPCR from a G-protein signaling mode that transmits short-lived signals from the plasma membrane via small molecule second messengers and ion channels to a beta-arrestin signaling mode that transmits a distinct set of signals that are initiated as the receptor internalizes and transits the intracellular compartment. Acts as signaling scaffold for MAPK pathways such as MAPK1/3 (ERK1/2) and MAPK10 (JNK3). ERK1/2 and JNK3 activated by the beta-arrestin scaffold are largely excluded from the nucleus and confined to cytoplasmic locations such as endocytic vesicles, also called beta-arrestin signalosomes. Acts as signaling scaffold for the AKT1 pathway. GPCRs for which the beta-arrestin-mediated signaling relies on both ARRB1 and ARRB2 (codependent regulation) include ADRB2, F2RL1 and PTH1R. For some GPCRs the beta-arrestin-mediated signaling relies on either ARRB1 or ARRB2 and is

inhibited by the other respective beta-arrestin form (reciprocal regulation). Increases ERK1/2 signaling in AGTR1- and AVPR2-mediated activation (reciprocal regulation). Involved in CCR7-mediated ERK1/2 signaling involving ligand CCL19. Is involved in type-1A angiotensin II receptor/AGTR1-mediated ERK activity. Is involved in type-1A angiotensin II receptor/AGTR1-mediated MAPK10 activity. Is involved in dopamine-stimulated AKT1 activity in the striatum by disrupting the association of AKT1 with its negative regulator PP2A. Involved in AGTR1-mediated chemotaxis. Appears to function as signaling scaffold involved in regulation of MIP-1-beta-stimulated CCR5-dependent chemotaxis. Involved in attenuation of NF-kappa-B-dependent transcription in response to GPCR or cytokine stimulation by interacting with and stabilizing CHUK. Suppresses UV-induced NF-kappa-B-dependent activation by interacting with CHUK. The function is promoted by stimulation of ADRB2 and dephosphorylation of ARRB2. Involved in p53/TP53-mediated apoptosis by regulating MDM2 and reducing the MDM2-mediated degradation of p53/TP53. May serve as nuclear messenger for GPCRs. Upon stimulation of OR1D2, may be involved in regulation of gene expression during the early processes of fertilization. Also involved in regulation of receptors others than GPCRs. Involved in endocytosis of TGFBR2 and TGFBR3 and down-regulates TGF-beta signaling such as NF-kappa-B activation. Involved in endocytosis of low-density lipoprotein receptor/LDLR. Involved in endocytosis of smoothed homolog/Smo, which also requires ADRBK1. Involved in endocytosis of SLC9A5. Involved in endocytosis of ENG and subsequent TGF-beta-mediated ERK activation and migration of epithelial cells. Involved in Toll-like receptor and IL-1 receptor signaling through the interaction with TRAF6 which prevents TRAF6 autoubiquitination and oligomerization required for activation of NF-kappa-B and JUN. Involved in insulin resistance by acting as insulin-induced signaling scaffold for SRC, AKT1 and INSR. Involved in regulation of inhibitory signaling of natural killer cells by recruiting PTPN6 and PTPN11 to KIR2DL1.

Sequence similarities

Belongs to the arrestin family.

Domain

The [DE]-X(1,2)-F-X-X-[FL]-X-X-X-R motif mediates interaction the AP-2 complex subunit AP2B1.

Post-translational modifications

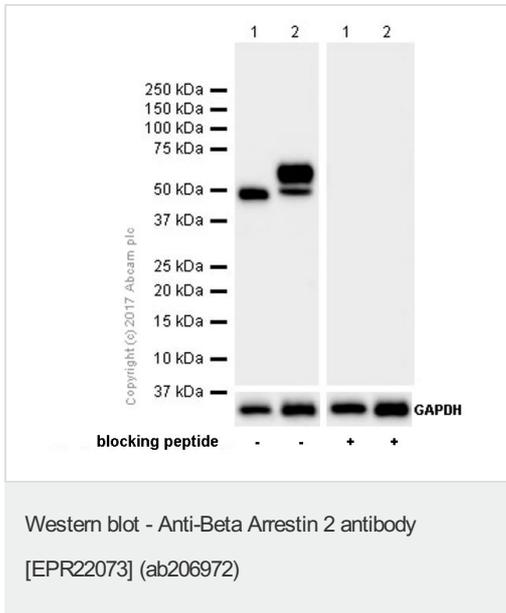
Phosphorylated at Thr-382 in the cytoplasm; probably dephosphorylated at the plasma membrane. The phosphorylation does not regulate internalization and recycling of ADRB2, interaction with clathrin or AP2B1.

The ubiquitination status appears to regulate the formation and trafficking of beta-arrestin-GPCR complexes and signaling. Ubiquitination appears to occur GPCR-specific. Ubiquitinated by MDM2; the ubiquitination is required for rapid internalization of ADRB2. Deubiquitinated by USP33; the deubiquitination leads to a dissociation of the beta-arrestin-GPCR complex. Stimulation of a class A GPCR, such as ADRB2, induces transient ubiquitination and subsequently promotes association with USP33. Stimulation of a class B GPCR promotes a sustained ubiquitination.

Cellular localization

Cytoplasm. Nucleus. Cell membrane. Membrane > clathrin-coated pit. Cytoplasmic vesicle. Translocates to the plasma membrane and colocalizes with antagonist-stimulated GPCRs.

Images



All lanes : Anti-Beta Arrestin 2 antibody [EPR22073] (ab206972) at 1/1000 dilution

Lane 1 : HEK-293T (human epithelial cell line from embryonic kidney transformed with large T antigen) whole cell lysate

Lane 2 : Mouse brain lysate

Lysates/proteins at 20 µg per lane.

Secondary

All lanes : Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

Predicted band size: 46 kDa

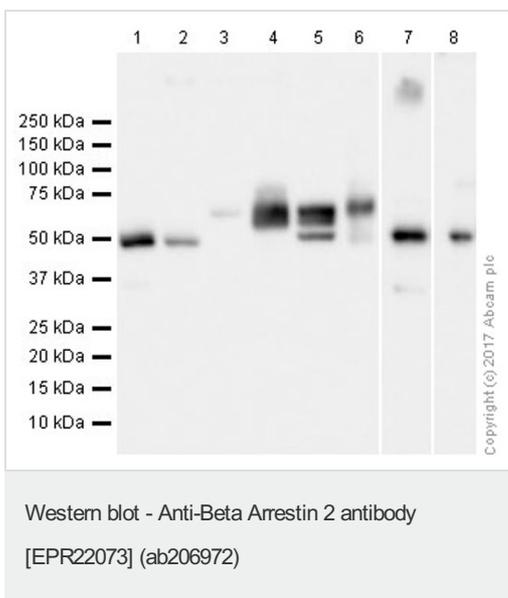
Observed band size: 46-55 kDa

[why is the actual band size different from the predicted?](#)

Exposure time: 15 seconds

Blocking/Dilution buffer: 5% NFDm/TBST.

The multiple bands in the brain tissue lysate are different isoform of β -Arrestin 2. All the immuno- active bands can be totally blocked by pre-incubation of antigen peptide.



All lanes : Anti-Beta Arrestin 2 antibody [EPR22073] (ab206972) at 1/1000 dilution

Lane 1 : HEK-293T (human epithelial cell line from embryonic kidney transformed with large T antigen) whole cell lysate

Lane 2 : HepG2 (human liver hepatocellular carcinoma cell line) whole cell lysate

Lane 3 : Human lung lysate

Lane 4 : Human brain lysate

Lane 5 : Mouse brain lysate

Lane 6 : Rat brain lysate

Lane 7 : Jurkat (human T cell leukemia cell line from peripheral blood) whole cell lysate

Lane 8 : HeLa (human epithelial cell line from cervix adenocarcinoma) whole cell lysate

Lysates/proteins at 20 µg per lane.

Secondary

All lanes : Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/200000 dilution

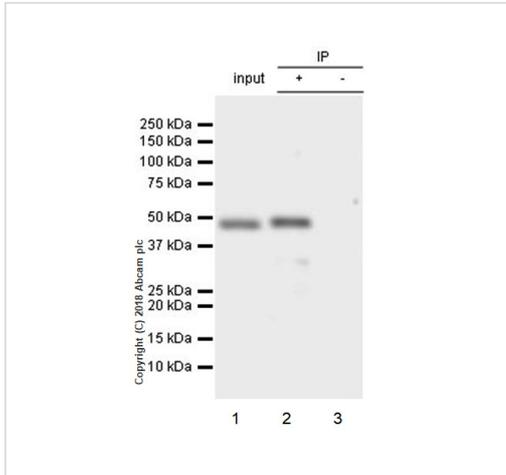
Predicted band size: 46 kDa

Observed band size: 46-55 kDa [why is the actual band size different from the predicted?](#)

Exposure time : Lane 1 - Lane 6: 10 seconds, Lane 7: 48 seconds, Lane 8: 70 seconds.

Blocking/Dilution buffer: 5% NFDN/TBST.

The multiple bands in tissue lysates are different isoforms of β -Arrestin 2 based on UniProt annotation. The molecular profile/weight observed is consistent with what has been described in the literature (PMID:16820410, PMID:27759077, PMID:19955404).



Immunoprecipitation - Anti-Beta Arrestin 2 antibody
[EPR22073] (ab206972)

Beta Arrestin 2 was immunoprecipitated from 0.35 mg of HEK-293T (human epithelial cell line from embryonic kidney transformed with large T antigen) whole cell lysate with ab206972 at 1/30 dilution. Western blot was performed from the immunoprecipitate using ab206972 at 1/1000 dilution. VeriBlot for IP Detection Reagent (HRP) (ab131366), was used for detection at 1/5000 dilution.

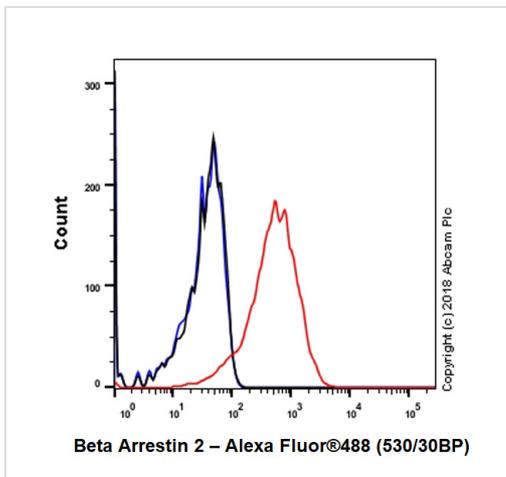
Lane 1: HEK-293T whole cell lysate 10 µg (Input).

Lane 2: ab206972 IP in HEK-293T whole cell lysate.

Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab206972 in HEK-293T whole cell lysate.

Blocking/Dilution buffer: 5% NFDm/TBST.

Exposure time: 10 seconds.



Flow Cytometry - Anti-Beta Arrestin 2 antibody
[EPR22073] (ab206972)

Flow cytometric analysis of 4% paraformaldehyde-fixed, 90% methanol-permeabilized HeLa (human epithelial cell line from cervix adenocarcinoma) cell line labeling Beta Arrestin 2 with ab206972 at 1/600 dilution (red) compared with a Rabbit IgG, monoclonal [EPR25A] - Isotype Control (ab172730) (black) and an unlabeled control (cells without incubation with primary antibody and secondary antibody) (blue). Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) at 1/2000 dilution was used as the secondary antibody.

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