

## Product datasheet

# Anti-Beta Arrestin 2 antibody ab31294

★★★★★ [7 Abreviews](#) [24 References](#) [3 Images](#)

### Overview

---

<b>Product name</b>	Anti-Beta Arrestin 2 antibody
<b>Description</b>	Goat polyclonal to Beta Arrestin 2
<b>Host species</b>	Goat
<b>Specificity</b>	This antibody is expected to recognise both reported isoforms (NP_004304 and NP_945355). No cross reactivity is expected with Arrestin beta 1.
<b>Tested applications</b>	<b>Suitable for:</b> WB, Flow Cyt, ICC
<b>Species reactivity</b>	<b>Reacts with:</b> Human
<b>Immunogen</b>	Synthetic peptide: C-HDHIPLRPQS , corresponding to Internal sequence amino acids 350-360 of Human Beta Arrestin 2. <a href="#">Run BLAST with</a> <a href="#">Run BLAST with</a>
<b>Positive control</b>	ICC: HeLa cells; Flow Cyt: A549 cells WB: A549, U251 cells
<b>General notes</b>	<p>The Life Science industry has been in the grips of a reproducibility crisis for a number of years. Abcam is leading the way in addressing this with our range of recombinant monoclonal antibodies and knockout edited cell lines for gold-standard validation. Please check that this product meets your needs before purchasing.</p> <p>If you have any questions, special requirements or concerns, please send us an inquiry and/or contact our Support team ahead of purchase. Recommended alternatives for this product can be found below, along with publications, customer reviews and Q&amp;As</p>

### Properties

---

<b>Form</b>	Liquid
<b>Storage instructions</b>	Shipped at 4°C. Upon delivery aliquot and store at -20°C. Avoid freeze / thaw cycles.
<b>Storage buffer</b>	pH: 7.30 Preservative: 0.02% Sodium azide Constituents: Tris buffered saline, 0.5% BSA
<b>Purity</b>	Immunogen affinity purified
<b>Purification notes</b>	This antibody was purified from goat serum by ammonium sulphate precipitation followed by antigen affinity chromatography using the immunizing peptide.

Clonality	Polyclonal
Isotype	IgG

## Applications

**The Abpromise guarantee** Our **Abpromise guarantee** covers the use of ab31294 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	★★★★★ (5)	Use a concentration of 0.5 - 1 µg/ml. Detects a band of approximately 40-48 kDa (predicted molecular weight: 46 kDa). A 1 hour primary incubation is recommended for this product.
Flow Cyt		Use a concentration of 10 µg/ml.
ICC		Use a concentration of 10 µg/ml.

## 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, ENDR1, 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**

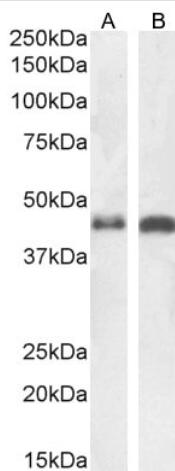
Phosphorylated at Thr-382 in the cytoplasm; probably dephosphorylated at the plasma membrane. The phosphorylation does not regulate internalization and recycling of ADRB2, interaction with clathrin or AP2B1.

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**



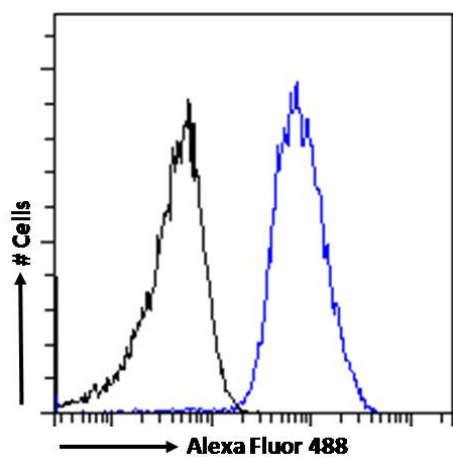
Western blot - Anti-Beta Arrestin 2 antibody  
(ab31294)

**All lanes** : Anti-Beta Arrestin 2 antibody (ab31294) at 1  $\mu\text{g/ml}$

**Lane 1** : A549 (human lung carcinoma cell line) cell lysate

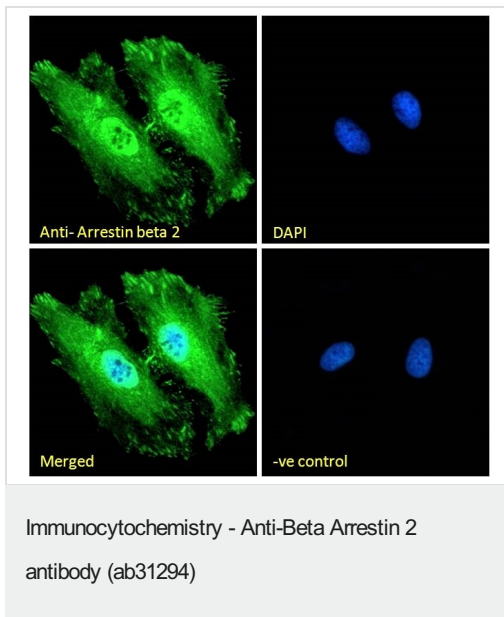
**Lane 2** : U251 (human brain glioma cell line) cell lysate

**Predicted band size:** 46 kDa



Flow Cytometry - Anti-Beta Arrestin 2 antibody  
(ab31294)

Flow cytometric analysis of paraformaldehyde-fixed 0.5% Triton-permeabilized A549 cells (human lung carcinoma cell line) staining beta arrestin positive cells with 10  $\mu\text{g/ml}$  ab31294 and 1  $\mu\text{g/ml}$  Alexa Fluor 488 secondary antibody (blue) and negative control unimmunized goat IgG (black).



Immunocytochemistry immunofluorescence analysis of paraformaldehyde-fixed 0.15% Triton-permeabilized HeLa cells staining beta arrestin 2 with 10 µg/ml ab31294 and Alexa Fluor 488 secondary antibody 20 µg/ml; plasma membrane and cytoplasmic staining is in green, and the nucleus is counterstained with DAPI in blue. The negative control is unimmunized goat IgG.

**Please note:** All products are "FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES"

### Our Abpromise to you: Quality guaranteed and expert technical support

- Replacement or refund for products not performing as stated on the datasheet
- Valid for 12 months from date of delivery
- Response to your inquiry within 24 hours
- We provide support in Chinese, English, French, German, Japanese and Spanish
- Extensive multi-media technical resources to help you
- We investigate all quality concerns to ensure our products perform to the highest standards

If the product does not perform as described on this datasheet, we will offer a refund or replacement. For full details of the Abpromise, please visit <https://www.abcam.com/abpromise> or contact our technical team.

### Terms and conditions

- Guarantee only valid for products bought direct from Abcam or one of our authorized distributors