

**Goat Anti-Arrestin beta 2 Antibody**  
**Peptide-affinity purified goat antibody**  
**Catalog # AF1112a****Specification**

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**Goat Anti-Arrestin beta 2 Antibody - Product Information**

Application	WB, IHC, IP, E
Primary Accession	<a href="#">P32121</a>
Other Accession	<a href="#">NP_945355</a> , <a href="#">409</a>
Reactivity	Human, Mouse, Rat
Host	Goat
Clonality	Polyclonal
Concentration	100ug/200ul
Isotype	IgG
Calculated MW	46106

**Goat Anti-Arrestin beta 2 Antibody - Additional Information****Gene ID** 409**Other Names**

Beta-arrestin-2, Arrestin beta-2, ARRB2, ARB2, ARR2

**Dilution**WB~~1:1000  
IHC~~1:100~500  
IP~~N/A  
E~~N/A**Format**

0.5 mg IgG/ml in Tris saline (20mM Tris pH7.3, 150mM NaCl), 0.02% sodium azide, with 0.5% bovine serum albumin

**Storage**

Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.

**Precautions**

Goat Anti-Arrestin beta 2 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

**Goat Anti-Arrestin beta 2 Antibody - Protein Information****Name** ARRB2**Synonyms** ARB2, ARR2

## 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 GPCR-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 a 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 a 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 other 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 smoothened homolog/Smo, which also requires GRK2. 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 (<http://www.uniprot.org/citations/26839314>). 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. Involved in IL8-mediated granule release in neutrophils. Involved in the internalization of the atypical chemokine receptor ACKR3. Acts as an adapter protein coupling FFAR4 receptor to

specific downstream signaling pathways, as well as mediating receptor endocytosis (PubMed:<a href="http://www.uniprot.org/citations/22282525" target="\_blank">22282525</a>, PubMed:<a href="http://www.uniprot.org/citations/23809162" target="\_blank">23809162</a>). During the activation step of NLRP3 inflammasome, directly associates with NLRP3 leading to inhibition of pro-inflammatory cytokine release and inhibition of inflammation (PubMed:<a href="http://www.uniprot.org/citations/23809162" target="\_blank">23809162</a>).

#### Cellular Location

Cytoplasm. Nucleus. Cell membrane. Membrane, clathrin-coated pit. Cytoplasmic vesicle

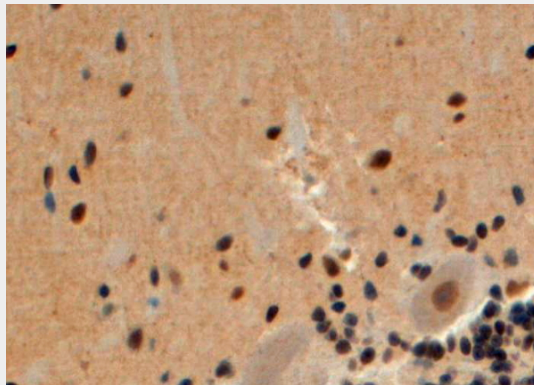
Note=Translocates to the plasma membrane and colocalizes with antagonist-stimulated GPCRs

#### Goat Anti-Arrestin beta 2 Antibody - Protocols

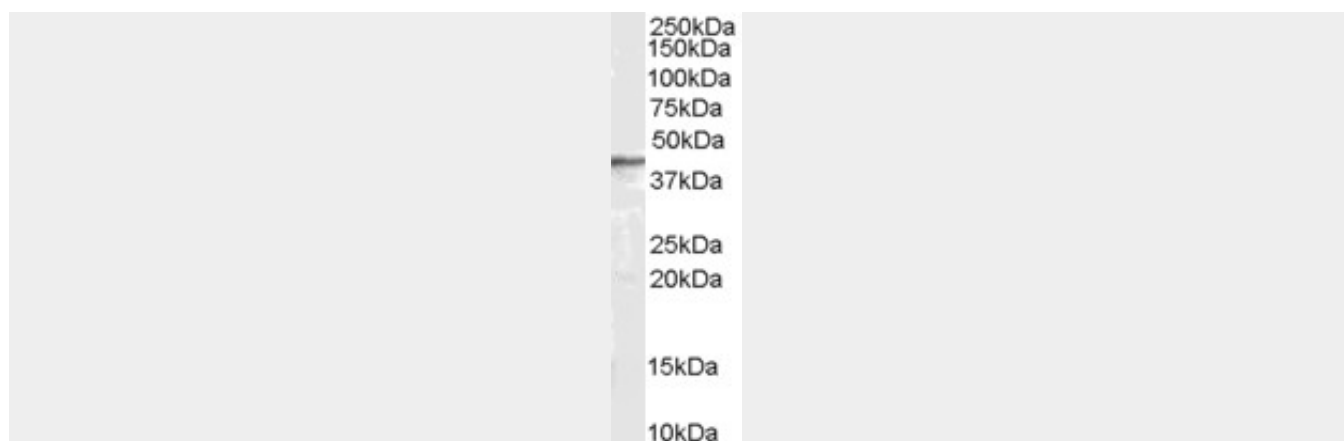
Provided below are standard protocols that you may find useful for product applications.

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

#### Goat Anti-Arrestin beta 2 Antibody - Images



AF1112a (4 µg/ml) staining of paraffin embedded Human Cerebellum. Steamed antigen retrieval with citrate buffer pH 6, HRP-staining.



AF1112a (0.3 µg/ml) staining of Human Brain lysate (35 µg protein in RIPA buffer). Primary incubation was 1 hour. Detected by chemiluminescence.

### **Goat Anti-Arrestin beta 2 Antibody - Background**

Members of arrestin/beta-arrestin protein family are thought to participate in agonist-mediated desensitization of G-protein-coupled receptors and cause specific dampening of cellular responses to stimuli such as hormones, neurotransmitters, or sensory signals. Arrestin beta 2, like arrestin beta 1, was shown to inhibit beta-adrenergic receptor function in vitro. It is expressed at high levels in the central nervous system and may play a role in the regulation of synaptic receptors. Besides the brain, a cDNA for arrestin beta 2 was isolated from thyroid gland, and thus it may also be involved in hormone-specific desensitization of TSH receptors. Multiple alternatively spliced transcript variants have been found for this gene, but the full-length nature of some variants has not been defined.

### **Goat Anti-Arrestin beta 2 Antibody - References**

beta-Arrestin2 influences the response to methadone in opioid-dependent patients. Oneda B, et al. Pharmacogenomics J, 2010 Jun 1. PMID 20514076.  
Beta-arrestin 2 regulates Toll-like receptor 4-mediated apoptotic signalling through glycogen synthase kinase-3beta. Li H, et al. Immunology, 2010 Aug. PMID 20497256.  
Preliminary evidence of ethnic divergence in associations of putative genetic variants for methamphetamine dependence. Bousman CA, et al. Psychiatry Res, 2010 Jul 30. PMID 20478633.  
Beta-arrestin 2 is required for B1 receptor-dependent post-translational activation of inducible nitric oxide synthase. Kuhr FK, et al. FASEB J, 2010 Jul. PMID 20228252.  
Non-visual arrestins are constitutively associated with the centrosome and regulate centrosome function. Shankar H, et al. J Biol Chem, 2010 Mar 12. PMID 20056609.