

## Product datasheet

# Anti-beta Arrestin 1 antibody ab31868

1 Abreviews 2 References 画像数 4

### 製品の概要

製品名	Anti-beta Arrestin 1 antibody
製品の詳細	Rabbit polyclonal to beta Arrestin 1
由来種	Rabbit
アプリケーション	適用あり: IP, ICC/IF, IHC-P, WB
種交差性	交差種: Mouse, Rat 交差が予測される動物種: Rabbit, Cow, Human, Xenopus laevis, Cynomolgus monkey
免疫原	Synthetic peptide derived from within residues 350 - 450 of Human beta Arrestin 1. Immunogenの所有権に関して (Peptide available as <a href="#">ab31867</a> .)
ポジティブ・コントロール	Mouse Brain, Mouse Brain Whole Cell Lysate - normal tissue, 0 days old, Rat Brain Whole Cell Lysate - normal tissue.

### 製品の特性

製品の状態	Liquid
保存方法	Shipped at 4°C. Store at +4°C short term (1-2 weeks). Upon delivery aliquot. Store at -20°C or -80°C. Avoid freeze / thaw cycle.
バッファー	Preservative: 0.02% Sodium Azide Constituents: 1% BSA, PBS. pH 7.4
精製度	Immunogen affinity purified
ポリモノ	ポリクローナル
アイソタイプ	IgG

### アプリケーション

Our [Abpromise guarantee](#) covers the use of **ab31868** in the following tested applications.

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

アプリケーション	Abreviews	特記事項
IP		Use a concentration of 5 µg/ml.

アプリケーション	Abreviews	特記事項
ICC/IF		Use a concentration of 5 µg/ml.
IHC-P		Use a concentration of 1 µg/ml. Perform heat mediated antigen retrieval before commencing with IHC staining protocol.
WB		Use a concentration of 1 µg/ml. Detects a band of approximately 50, 100 kDa (predicted molecular weight: 47 kDa).

## ターゲット情報

### 機能

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. Involved in internalization of P2RY4 and UTP-stimulated internalization of P2RY2. Involved in phosphorylation-dependent internalization of OPRD1 and subsequent recycling. Involved in the degradation of cAMP by recruiting cAMP phosphodiesterases to ligand-activated receptors. 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). ERK1/2 activated by the beta-arrestin scaffold is largely excluded from the nucleus and confined to cytoplasmic locations such as endocytic vesicles, also called beta-arrestin signalosomes. Recruits c-Src/SRC to ADRB2 resulting in ERK activation. 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). Inhibits ERK1/2 signaling in AGTR1- and AVPR2-mediated activation (reciprocal regulation). Is required for SP-stimulated endocytosis of NK1R and recruits c-Src/SRC to internalized NK1R resulting in ERK1/2 activation, which is required for the antiapoptotic effects of SP. Is involved in proteinase-activated F2RL1-mediated ERK activity. Acts as signaling scaffold for the AKT1 pathway. Is involved in alpha-thrombin-stimulated AKT1 signaling. Is involved in IGF1-stimulated AKT1 signaling leading to increased protection from apoptosis. Involved in activation of the p38 MAPK

signaling pathway and in actin bundle formation. Involved in F2RL1-mediated cytoskeletal rearrangement and chemotaxis. Involved in AGTR1-mediated stress fiber formation by acting together with GNAQ to activate RHOA. 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. May serve as nuclear messenger for GPCRs. Involved in OPRD1-stimulated transcriptional regulation by translocating to CDKN1B and FOS promoter regions and recruiting EP300 resulting in acetylation of histone H4. Involved in regulation of LEF1 transcriptional activity via interaction with DVL1 and/or DVL2 Also involved in regulation of receptors others than GPCRs. 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. Binds phosphoinositides. Binds inositolhexakisphosphate (InsP6).

#### 配列類似性

Belongs to the arrestin family.

#### ドメイン

The [DE]-X(1,2)-F-X-X-[FL]-X-X-X-R motif mediates interaction the AP-2 complex subunit AP2B1 (By similarity). Binding to phosphorylated GPCRs induces a conformational change that exposes the motif to the surface.

The N-terminus binds InsP6 with low affinity.

The C-terminus binds InsP6 with high affinity.

#### 翻訳後修飾

Constitutively phosphorylated at Ser-412 in the cytoplasm. At the plasma membrane, is rapidly dephosphorylated, a process that is required for clathrin binding and ADRB2 endocytosis but not for ADRB2 binding and desensitization. Once internalized, is rephosphorylated.

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.

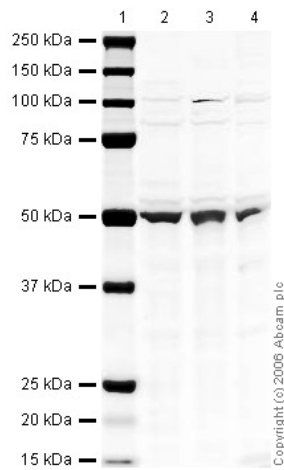
Stimulation of a class A GPCR, such as ADRB2, induces transient ubiquitination and subsequently promotes association with USP33.

#### 細胞内局在

Cytoplasm. Nucleus. Cell membrane. Membrane > clathrin-coated pit. Cell projection > pseudopodium. Cytoplasmic vesicle. Translocates to the plasma membrane and colocalizes with antagonist-stimulated GPCRs. The monomeric form is predominantly located in the nucleus. The oligomeric form is located in the cytoplasm. Translocates to the nucleus upon stimulation of OPRD1.

#### 画像

---



Western blot - Anti-beta Arrestin 1 antibody (ab31868)

**Lane 1 :** Marker

**Lanes 2-4 :** Anti-beta Arrestin 1 antibody (ab31868) at 1 µg/ml

**Lane 2 :** Mouse Brain at 20 µg

**Lane 3 :** Mouse brain tissue lysate - total protein (0 days) (ab7188) at 20 µg

**Lane 4 :** Brain (Rat) Whole Cell Lysate - normal tissue at 20 µg

### Secondary

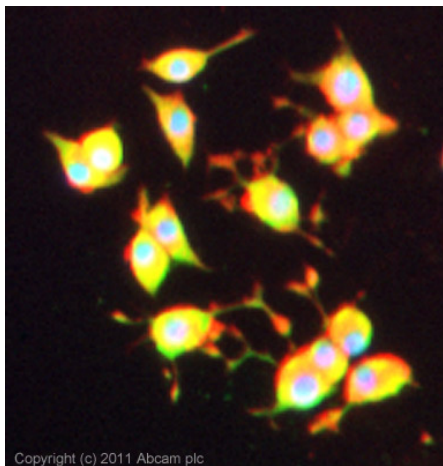
**Lanes 2-4 :** IR Dye 680 Conjugated Goat Anti-Rabbit IgG (H+L) at 1/15000 dilution

Performed under reducing conditions.

**Predicted band size:** 47 kDa

**Observed band size:** 50 kDa

**Additional bands at:** 100 kDa. We are unsure as to the identity of these extra bands.



Immunocytochemistry/ Immunofluorescence - Anti-beta Arrestin 1 antibody (ab31868)

ICC/IF image of ab31868 stained PC12 cells.

The cells were 100% methanol fixed (5 min)

and then incubated in 1%BSA / 10% normal

goat serum / 0.3M glycine in 0.1% PBS-

Tween for 1h to permeabilise the cells and

block non-specific protein-protein interactions.

The cells were then incubated with the

antibody (ab31868, 5µg/ml) overnight at +4°C.

The secondary antibody (green) was [ab96899](#)

Dylight 488 goat anti-rabbit IgG (H+L) used at

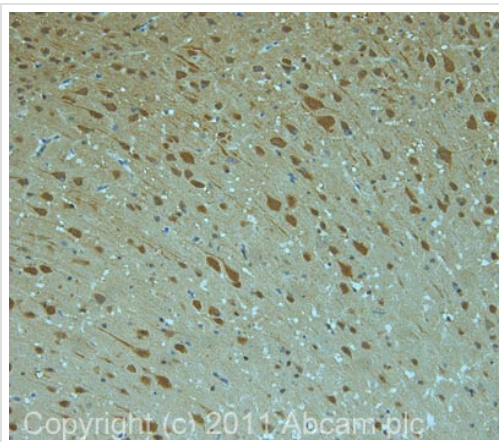
a 1/250 dilution for 1h. Alexa Fluor® 594 WGA

was used to label plasma membranes (red) at

a 1/200 dilution for 1h. DAPI was used to stain

the cell nuclei (blue) at a concentration of

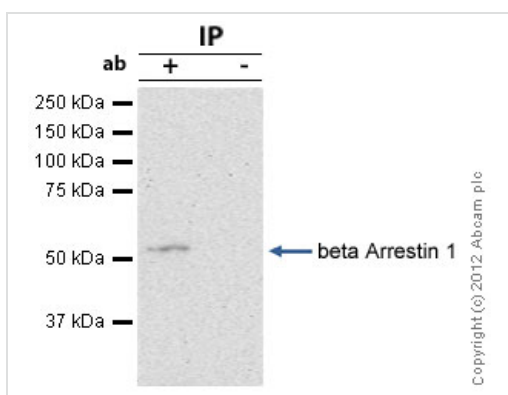
1.43µM.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-beta Arrestin 1 antibody (ab31868)

IHC image of ab31868 staining in rat brain formalin fixed paraffin embedded tissue section, performed on a Leica Bond™ system using the standard protocol F. The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH6, epitope retrieval solution 1) for 20 mins. The section was then incubated with ab31868, 1µg/ml, for 15 mins at room temperature and detected using an HRP conjugated compact polymer system. DAB was used as the chromogen. The section was then counterstained with haematoxylin and mounted with DPX.

For other IHC staining systems (automated and non-automated) customers should optimize variable parameters such as antigen retrieval conditions, primary antibody concentration and antibody incubation times.



Immunoprecipitation - Anti-beta Arrestin 1 antibody (ab31868)

Beta Arrestin 1 was immunoprecipitated using 0.5mg Mouse Brain tissue lysate, 5µg of Rabbit polyclonal to Beta Arrestin 1 and 50µl of protein G magnetic beads (+). No antibody was added to the control (-).

The antibody was incubated under agitation with Protein G beads for 10min, Mouse Brain tissue lysate diluted in RIPA buffer was added to each sample and incubated for a further 10min under agitation.

Proteins were eluted by addition of 40µl SDS loading buffer and incubated for 10min at 70°C; 10µl of each sample was separated on a SDS PAGE gel, transferred to a nitrocellulose membrane, blocked with 5% BSA and probed with ab31868.

Secondary: Mouse monoclonal [SB62a]

Secondary Antibody to Rabbit IgG light chain (HRP) (ab99697).

Band: 50kDa: Beta Arrestin 1

### **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 <http://www.abcam.co.jp/abpromise> or contact our technical team.

### **Terms and conditions**

---

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