

# ABR Antibody / Active breakpoint cluster region-related protein (FY12626)

| Catalog No. | Formulation  | Size   |
|-------------|--|--------|
| FY12626     | Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml | 100 ug |

## **Bulk quote request**

| Availability       | 1-2 days  |
|--------------------|---|
| Species Reactivity | Human, Mouse, Rat   |
| Format             | Lyophilized   |
| Clonality          | Polyclonal (rabbit origin)  |
| Isotype            | Rabbit IgG  |
| Purity             | Immunogen affinity purified   |
| Buffer             | Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na2HPO4.   |
| UniProt            | Q12979  |
| Applications       | Western Blot: 0.25-0.5ug/ml Immunohistochemistry: 2-5ug/ml Immunocytochemistry: 5ug/ml Immunofluorescence: 5ug/ml Flow Cytometry: 1-3ug/million cells ELISA: 0.1-0.5ug/ml |
| Limitations        | This ABR antibody is available for research use only.   |

## **Description**

ABR antibody detects Active breakpoint cluster region-related protein, a GTPase-activating protein that regulates the Rho family of small GTPases including Rac and Cdc42. ABR modulates cytoskeletal organization, cell migration, and neuronal development by controlling GTPase signaling cycles. The ABR antibody is widely used in neuroscience, immunology, and cancer biology to study cytoskeletal regulation, signaling, and morphogenesis.

ABR is encoded by the ABR gene located on human chromosome 17p13.3. The protein is approximately 871 amino acids long and contains a GTPase-activating (GAP) domain and a guanine nucleotide exchange factor (GEF)-like domain, giving it dual regulatory capacity. ABR localizes to the cytoplasm and plasma membrane, where it modulates actin cytoskeleton remodeling and cell polarity.

The ABR antibody detects a 98 kilodalton protein by western blot and shows perinuclear and membrane-associated staining under immunofluorescence. ABR acts as a negative regulator of Rac and Cdc42 by promoting their conversion

from active GTP-bound to inactive GDP-bound states. This modulation is essential for neuronal growth cone collapse, immune cell migration, and epithelial polarity.

In neurons, ABR contributes to axon guidance and dendritic spine development, while in immune cells it regulates phagocytosis and chemotaxis. Loss of ABR activity leads to hyperactivation of Rho GTPases, resulting in abnormal morphology and impaired signal transduction. In cancers, aberrant ABR expression alters cell adhesion, invasion, and metastatic behavior.

Beyond cytoskeletal control, ABR interacts with signaling molecules involved in inflammation and oxidative stress. It participates in cellular defense mechanisms by modulating NADPH oxidase activity and reactive oxygen species production. These diverse functions establish ABR as a central hub linking signaling to structural adaptation.

As a bidirectional regulator of GTPase signaling, ABR provides key insights into cell dynamics and tissue morphogenesis. NSJ Bioreagents provides a validated ABR antibody optimized for western blot, immunofluorescence, and cytoskeletal studies, supporting research into Rho GTPase regulation, neuronal development, and immune signaling.

## **Application Notes**

Optimal dilution of the ABR antibody should be determined by the researcher.

### **Immunogen**

E.coli-derived human ABR recombinant protein (Position: Q180-V859) was used as the immunogen for the ABR antibody.

#### **Storage**

After reconstitution, the ABR antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.