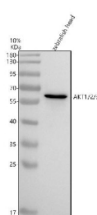


## Zebrafish Akt Antibody / Isoforms 1 & 2 & 3 (RZ1064)

| Catalog No. | Formulation                                           | Size   |
|-------------|-------------------------------------------------------|--------|
| RZ1064      | 0.5mg/ml if reconstituted with 0.2ml sterile DI water | 100 ug |

**Bulk quote request**

|                           |                                                                 |
|---------------------------|-----------------------------------------------------------------|
| <b>Availability</b>       | 2-3 weeks                                                       |
| <b>Species Reactivity</b> | Zebrafish                                                       |
| <b>Format</b>             | Antigen affinity purified                                       |
| <b>Clonality</b>          | Polyclonal (rabbit origin)                                      |
| <b>Isotype</b>            | Rabbit Ig                                                       |
| <b>Purity</b>             | Antigen affinity chromatography                                 |
| <b>Buffer</b>             | Lyophilized from 1X PBS with 2% Trehalose                       |
| <b>UniProt</b>            | Q802Y3                                                          |
| <b>Applications</b>       | Western Blot : 0.5-1 ug/ml                                      |
| <b>Limitations</b>        | This Zebrafish Akt antibody is available for research use only. |



Western blot analysis of Akt1/2/3 protein using Akt antibody and zebrafish head tissue lysates. The predicted molecular weight of Akt1/2/3 is ~56 kDa.

## Description

RAC-alpha serine/threonine-protein kinase is an enzyme that in humans is encoded by the AKT1 gene. This gene encodes one of the three members of the human AKT serine-threonine protein kinase family which are often referred to as protein kinase B alpha, beta, and gamma. These highly similar AKT proteins all have an N-terminal pleckstrin homology domain, a serine/threonine-specific kinase domain and a C-terminal regulatory domain. These proteins are phosphorylated by phosphoinositide 3-kinase (PI3K). AKT/PI3K forms a key component of many signalling pathways that involve the binding of membrane-bound ligands such as receptor tyrosine kinases, G-protein coupled receptors, and integrin-linked kinase. These AKT proteins therefore regulate a wide variety of cellular functions including cell proliferation, survival, metabolism, and angiogenesis in both normal and malignant cells. AKT proteins are recruited to the

cell membrane by phosphatidylinositol 3,4,5-trisphosphate (PIP3) after phosphorylation of phosphatidylinositol 4,5-bisphosphate (PIP2) by PI3K. Subsequent phosphorylation of both threonine residue 308 and serine residue 473 is required for full activation of the AKT1 protein encoded by this gene. Phosphorylation of additional residues also occurs, for example, in response to insulin growth factor-1 and epidermal growth factor. Protein phosphatases act as negative regulators of AKT proteins by dephosphorylating AKT or PIP3. The PI3K/AKT signalling pathway is crucial for tumor cell survival. Survival factors can suppress apoptosis in a transcription-independent manner by activating AKT1 which then phosphorylates and inactivates components of the apoptotic machinery. AKT proteins also participate in the mammalian target of rapamycin (mTOR) signalling pathway which controls the assembly of the eukaryotic translation initiation factor 4F (eIF4E) complex and this pathway, in addition to responding to extracellular signals from growth factors and cytokines, is dysregulated in many cancers. Mutations in this gene are associated with multiple types of cancer and excessive tissue growth including Proteus syndrome and Cowden syndrome 6, and breast, colorectal, and ovarian cancers. Multiple alternatively spliced transcript variants have been found for this gene.

## Application Notes

Optimal dilution of the Zebrafish Akt antibody should be determined by the researcher.

## Immunogen

An E.coli-derived zebrafish Akt1/2/3 recombinant protein (amino acids E17-A474) was used as the immunogen for the Zebrafish Akt antibody.

## Storage

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