CELL APPLICATIONS, INC.

BIN1 Antibody

Cat. No. CA11005

Applications:	**WB, IHC, ICC**
Detected MW:	**65 kDa**
Species & Reactivity:	**Human, Mouse, Rat**
Isotype:	**Mouse IgG**

BACKGROUND

The bridging integrator-1 (BIN1) protein, also called Amphiphysin 2, is a member of BAR domain superfamily. BIN1 is a ubiquitous endocytic adaptor protein which was initially identified as a c-MYC-interacting pro-apoptotic tumor suppressor. Reduction of *BIN1* expression in breast and other cancers was demonstrated, and introduction of *BIN1* into tumor cells lacking endogenous expression reduced their proliferative capacity. Several splice variants of BIN1 harbor a MYC-binding domain (MBD), thus retaining the ability to physically interact with and inhibit the oncogenic functions of c-MYC. The BIN1–c-MYC interaction mediates c-MYC-induced apoptosis, at least partly. Interestingly, BIN1-induced cell death is not compromised by dysfunctional p53, caspase inhibition, and/or overexpression of BCL-2, which suggests that BIN1's proapoptotic property could be useful for the eradication of cancer cells where p53 and/or caspases are frequently dysfunctional. It was demonstrated that BIN1 is a downstream mediator of E2F1-dependent apoptosis.[1]

On the other hand, The BAR domain superfamily proteins are involved in endocytosis, organelle biogenesis, cell division, and cell migration. As a member of the BAR domain superfamily, BIN1 was shown to induce membrane invagination and initiate tubulogenesis in skeletal muscle cells. BIN1 functions as a tubulogenesis membrane scaffolding protein. BIN1 deforms the membrane bilayer through interaction between its N-terminal positively charged BAR domain and acidic phospholipids within the cell membrane. Knowledge of the role of BIN1 in muscle cells includes evidence of BIN1 distribution on T-tubules of skeletal myocytes and that constitutive knockdown of BIN1 in mice is perinatal lethal, with pathology revealing a hypertrophic dilated cardiomyopathy. Indeed, BIN1 is involved in helping recruit Cav1.2 to T-tubules and acts as a kind of molecular landing pad for Cav1.2 delivery along microtubules. Thus, BIN1 plays a dual role in cardiac muscle cells; not only is it needed to help generate T-tubules, but it also designates T-tubules as the appropriate site for delivery of L-type calcium channels.[2] Furthermore, other tissue-specific splice isoforms of BIN1 have been described to participate in specific biological processes, e.g. a neuronal isoform implicated in synaptic vesicle endocytosis.[3]

References:

1. Cassimere, E.K. et al: Cell Death Diff. 16:1641-53, 2009
2. Hong, T.T. et al: PLoS ONE 8:e1000312, 2010
3. Wigge, P. & McMahon, H.T.: Trends Neurosci. 21:339-44, 1198

TECHNICAL INFORMATION

Source:
BIN1 Antibody is a mouse monoclonal antibody raised against a short peptide from human BIN1 sequence.

Specificity and Sensitivity:
This antibody detects endogenous levels of BIN1 proteins without cross-reactivity with other related proteins.

Storage Buffer: PBS and 30% glycerol

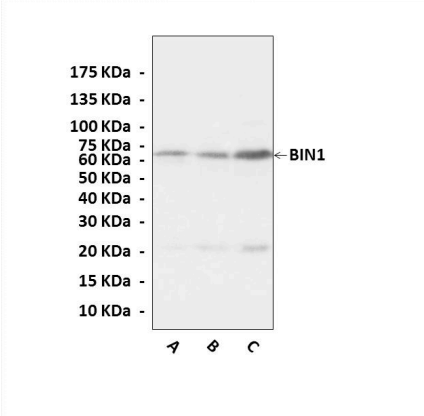
Storage:
Store at -20°C for at least one year. Store at 4°C for frequent use. Avoid repeated freeze-thaw cycles.

APPLICATIONS

Application:	*Dilution:
WB	1:1000
IP	n/d
IHC	1:50-200
ICC	1:50-200
FACS	n/d

**Optimal dilutions must be determined by end user.*

QUALITY CONTROL DATA



Western Blot detection of BIN1 proteins in various rat skeletal muscle (A), rat heart (B), and rat kidney (C) tissue lysates using BIN1 Antibody.