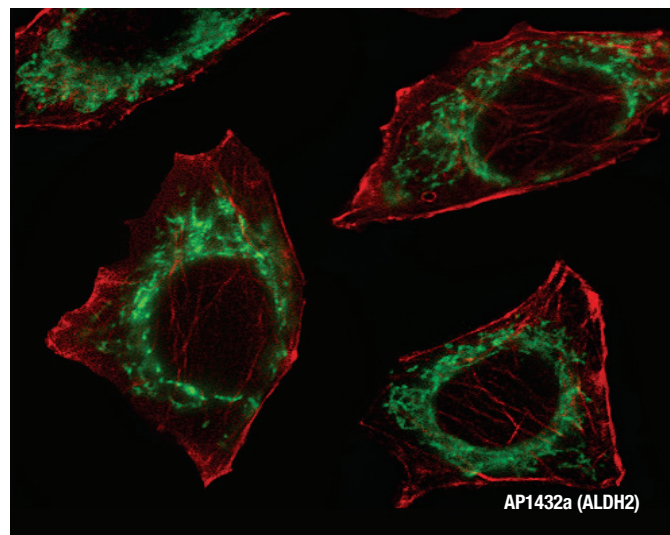


Introduction

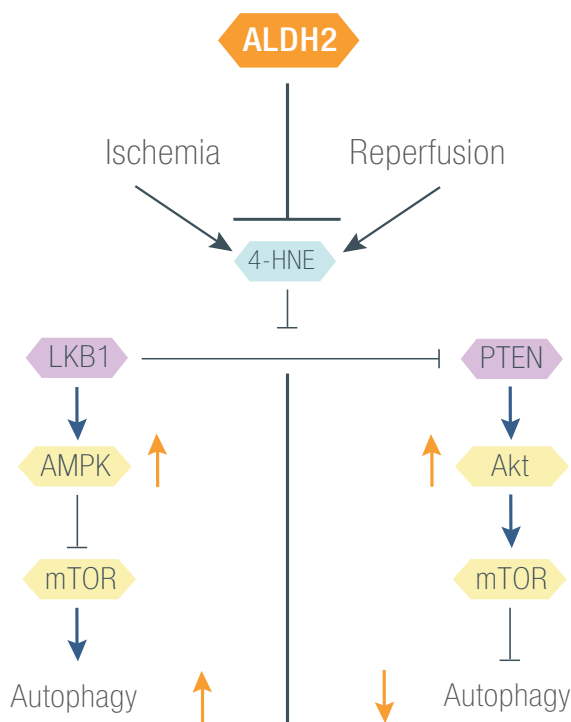
The mitochondrial isoform of aldehyde dehydrogenase (ALDH2) plays a key role in the metabolism of acetaldehyde and other toxic aldehydes. Studies showed importance of ALDH2 in the cardioprotection against ischaemia injury: ethanol treatment prior to ischaemia may enhance ALDH2 activity and prevent formation of 4-hydroxy-2-nonenal (4-HNE)-protein adducts. 4-HNE, reactive aldehyde, is capable of modifying key enzymes by forming protein adducts to inhibit protein function. Recent findings suggest that elevated HNE content may modify essential cardiac survival signalling molecules including AMPK and Akt, important in autophagy signaling. HNE has been shown to downregulated pan and phosphorylated LKB1 and PTEN in cardiomyocytes. Detoxification of 4-HNE with ALDH2 should remove the suppression of 4-HNE on LKB1/PTEN-mediated AMPK and Akt signalling, thus preserving the critical kinase activity in ischaemia.



Fluorescent image of A549 cell stained with ALDH2 Antibody (N-term)(Cat#AP1432a).A549 cells were fixed with 4% PFA (20 min), permeabilized with Triton X-100 (0.1%, 10 min), then incubated with ALDH2 primary antibody (1:25, 1 h at 37°C. For secondary antibody, Alexa Fluor® 488 conjugated donkey anti-rabbit antibody (green) was used (1:400, 50 min at 37°C).Cytoplasmic actin was counterstained with Alexa Fluor® 555 (red) conjugated Phalloidin (7units/ml, 1 h at 37°C). ALDH2 is localized to mitochondrion compartment in cytosol.

Selected Abgent Products

| CAT. # | TARGET NAME |
|----------|---------------------------------------|
| AP7260a | AMPK alpha (PRKAA1) Antibody (S487) |
| AP7046a | AMPK beta2 (PRKAB2) Antibody (N-term) |
| AP6273c | mTOR (FRAP1) Antibody (S2481) |
| AP11976a | AKT1 Antibody (C-term T450) |
| AM1848b | AKT2 Antibody |
| AP7239a | STK11 (LKB1) Antibody (N-term I29) |
| AP17316b | Mouse Stk11 Antibody (C-term) |
| AP8436a | PTEN Antibody (N-term) |
| AP19250c | ULK1 Antibody (Center S317) |
| AP3804a | ULK1 (Phospho S556) |
| AP8104b | APG1 (ULK1) Antibody (Center) |
| AP1802a | LC3 Antibody (APG8B) (N-term) |
| AP1805a | Cleaved LC3A Antibody |



Visual categorization

Target associated (orange)



Autophagy Stem Cell Neurodegeneration

