Anti-AKR7A2 Antibody

R1408-3

Product Type:	Rabbit polyclonal IgG, primary antibodies
Species reactivity:	Human, Mouse, Rat
Applications:	WB, IF-Cell
Molecular Wt:	Predicted band size: 40 kDa

Description: Catalyzes the NADPH-dependent reduction of succinic semialdehyde to gamma-hydroxybutyrate. May have an important role in producing the neuromodulator gamma-hydroxybutyrate (GHB). Has broad substrate specificity. Has NADPH-dependent aldehyde reductase activity towards 2-carboxybenzaldehyde, 2-nitrobenzaldehyde and pyridine-2-aldehyde (in vitro). Can reduce 1,2-naphthoquinone and 9,10-phenanthrenequinone (in vitro). Can reduce the dialdehyde protein-binding form of aflatoxin B1 (AFB1) to the non-binding AFB1 dialcohol. May be involved in protection of liver against the toxic and carcinogenic effects of AFB1, a potent hepatocarcinogen. The protein encoded by this gene belongs to the aldo/keto reductase (AKR) superfamily and AKR7 family, which are involved in the detoxification of aldehydes and ketones. The AKR7 family consists of 3 genes that are present in a cluster on the p arm of chromosome 1. This protein, thought to be localized in the golgi, catalyzes the NADPH-dependent reduction of succinic semialdehyde to the endogenous neuromodulator, gamma-hydroxybutyrate. It may also function as a detoxication enzyme in the reduction of aflatoxin B1 and 2-carboxybenzaldehyde. Alternative splicing results in multiple transcript variants.

Immunogen: Synthetic peptide corresponding to Human AKR7A2 aa 101-150 / 359.

Positive control: 293T cell lysate, A431 cell lysate, Jurkat cell lysate, mouse liver tissue lysate, rat liver tissue lysate, human liver tissue lysate, Hela.

Subcellular location: Mitochondrion, Golgi apparatus, Cytoplasm.

Database links: SwissProt: O43488 Human | Q8CG76 Mouse | Q8CG45 Rat

Recommended Dilutions:

WB	1:1,000-1:2,000
IF-Cell	1:200

Storage Buffer: 1*PBS (pH7.4), 0.2% BSA, 40% Glycerol. Preservative: 0.05% Sodium Azide.

Storage Instruction: Shipped at 4℃. Store at +4℃ short term (1-2 weeks). It is recommended to aliquot into single-use upon delivery. Store at -20℃ long term.

Purity: Immunogen affinity purified.

Images

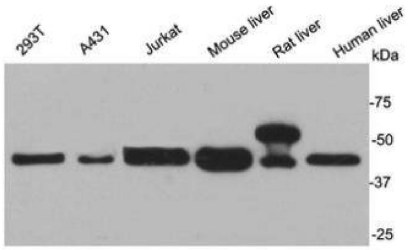

Fig1: Western blot analysis of AKR7A2 on different lysates with Rabbit anti-AKR7A2 antibody (R1408-3) at 1/1,000 dilution.

Lane 1: 293T cell lysate
Lane 2: A431 cell lysate
Lane 3: Jurkat cell lysate
Lane 4: Mouse liver tissue lysate
Lane 5: Rat liver tissue lysate
Lane 6: Human liver tissue lysate

Predicted band size: 40 kDa
Observed band size: 40 kDa

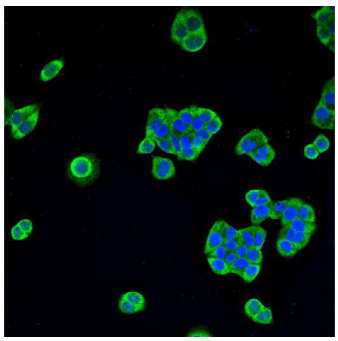

Fig2: ICC staining AKR7A2 in Hela cells (green). Cells were fixed in paraformaldehyde, permeabilised with 0.25% Triton X100/PBS and counterstained with DAPI in order to highlight the nucleus (blue).

Background References

1. "Novel homodimeric and heterodimeric rat gamma-hydroxybutyrate synthases that associate with the Golgi apparatus define a distinct subclass of aldo-keto reductase 7 family proteins." Kelly V.P., Sherratt P.J., Crouch D.H., Hayes J.D. Biochem. J. 366:847-861(2002)
2. "Synthesis and catabolism of gamma-hydroxybutyrate in SH-SY5Y human neuroblastoma cells: role of the aldo-keto reductase AKR7A2." Lyon R.C., Johnston S.M., Watson D.G., McGarvie G., Ellis E.M. J. Biol. Chem. 282:25986-25992(2007)
3. "Genetic variation of aflatoxin B1 aldehyde reductase genes (AFAR) in human tumour cells." Praml C., Schulz W., Claas A., Mollenhauer J., Poustka A., Ackermann R., Schwab M., Henrich K.-O.Cancer Lett. 272:160-166(2008)