Revision 1

Store at -20C

#27198

β-Galactosidase (E2U2I) Rabbit mAb

Cell Signaling TECHNOLOGY®

Orders: 877-616-CELL (2355)
orders@cellsignal.com

Support: 877-678-TECH (8324)

Web: info@cellsignal.com
cellsignal.com

3 Trask Lane | Danvers | Massachusetts | 01923 | USA

For Research Use Only. Not for Use in Diagnostic Procedures.

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W, IF-IC	H M R Hm Mk	Endogenous	65	Rabbit IgG	#P16278	2720

Product Usage Information

Application	Dilution
Western Blotting	1:1000
Immunofluorescence (Immunocytochemistry)	1:400

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at –20°C. Do not aliquot the antibody.

Specificity/Sensitivity

β-Galactosidase (E2U2I) Rabbit mAb recognizes endogenous levels of total β-galactosidase protein. The antibody cross-reacts with a 40 kDa protein of unknown identity in some cell extracts.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Asp39 of human β-galactosidase protein.

Background

β-galactosidase (also known as β-gal) is an essential hydrolase enzyme that catalyzes the hydrolysis of galactose-containing carbohydrates into monosaccharides. Substrates of β-galactosides include lactose, various glycoproteins, ganglioside GM1, and lactosylceramides. β-galactosidase is used widely in molecular biology; for example, isolation of recombinant bacteria during molecular cloning utilizes α-complementation of the bacterial β-galactosidase gene (*lacZ*) in the presence of a β-gal substrate to identify recombinant clones (1). In cell biology, Senescence-Associated beta-galactosidase (SA-β-gal), defined as β-gal activity at pH 6.0, is a widely used marker of replicative senescence. While initially thought to derive from a unique isoform of β-galactosidase expressed specifically in senescent cells (2), SA-β-gal activity was subsequently shown to result from overexpression and accumulation of β-galactosidase in endogenous lysosomes, and is not specifically required for replicative senescence (3).

Background References

1. Messing, J. et al. (1977) *Proc Natl Acad Sci U S A* 74, 3642-6.
2. Dimri, G.P. et al. (1995) *Proc Natl Acad Sci U S A* 92, 9363-7.
3. Lee, B.Y. et al. (2006) *Aging Cell* 5, 187-95.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

W: Western Blotting **IF-IC:** Immunofluorescence (Immunocytochemistry)

Cross-Reactivity Key

H: Human **M:** Mouse **R:** Rat **Hm:** Hamster **Mk:** Monkey

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