

MEL-1A/B-R (B-8): sc-398788



The Power to Question

BACKGROUND

Melatonin (Mel), a hormone secreted by the pineal gland, is expressed at night in response to the circadian clock. Melatonin is thought to be involved in regulating reproductive physiological development and the progression of sexual maturation, and it is also thought to play a role in tumorigenesis. The melatonin receptors, MEL-1A-R and MEL-1B-R, are members of the superfamily of guanine nucleotide-binding regulatory protein G protein-coupled receptors. Signaling through the melatonin receptors inhibits adenylate cyclase and stimulates phospholipase C β upon activation of pertussis toxin (PTX)-sensitive G proteins. MEL-1A-R may be involved in pacing the biological clock. However, both MEL-1A-R and MEL-1B-R are implicated in controlling cellular growth in response to melatonin.

REFERENCES

1. Luboshitzky, R. and Lavie, P. 1999. Melatonin and sex hormone interrelationships—a review. *J. Pediatr. Endocrinol. Metab.* 12: 355-362.
2. Brydon, L., et al. 1999. Dual signaling of human Mel1a melatonin receptors via G β_2 , G β_3 , and G $\beta_{q/11}$ proteins. *Mol. Endocrinol.* 13: 2025-2038.
3. Roka, F., et al. 1999. Tight association of the human Mel $_{1a}$ -melatonin receptor and G β : precoupling and constitutive activity. *Mol. Pharmacol.* 56: 1014-1024.

CHROMOSOMAL LOCATION

Genetic locus: MTNR1A (human) mapping to 4q35.2, MTNR1B (human) mapping to 11q14.3; Mtnr1a (mouse) mapping to 8 B1.1, Mtnr1b (mouse) mapping to 9 A2.

SOURCE

MEL-1A/B-R (B-8) is a mouse monoclonal antibody raised against amino acids 161-280 mapping within an internal region of MEL-1A-R of human origin.

PRODUCT

Each vial contains 200 μ g IgM kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

MEL-1A/B-R (B-8) is recommended for detection of MEL-1A-R and MEL-1B-R of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Molecular Weight of MEL-1A-R: 37 kDa.

Molecular Weight of glycosylated MEL-1A-R: 60 kDa.

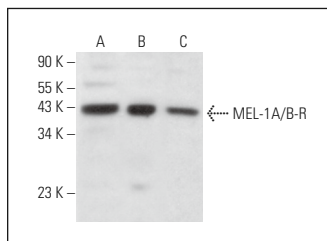
Molecular Weight of MEL-1B-R: 36 kDa.

Positive Controls: Neuro-2A whole cell lysate: sc-364185, Jurkat whole cell lysate: sc-2204 or SK-N-SH cell lysate: sc-2410.

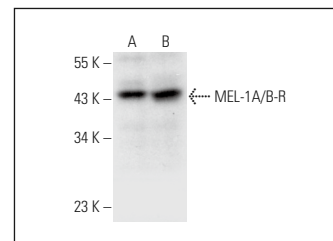
STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

DATA



MEL-1A/B-R (B-8): sc-398788. Western blot analysis of MEL-1A/B-R expression in Jurkat (A), Neuro-2A (B) and SK-N-SH (C) whole cell lysates.



MEL-1A/B-R (B-8): sc-398788. Western blot analysis of MEL-1A/B-R expression in Jurkat (A) and SK-N-SH (B) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Chen, C., et al. 2016. Abnormal osteogenic and chondrogenic differentiation of human mesenchymal stem cells from patients with adolescent idiopathic scoliosis in response to melatonin. *Mol. Med. Rep.* 14: 1201-1209.
2. Zhao, X.M., et al. 2018. Melatonin improves the fertilization capacity and developmental ability of bovine oocytes by regulating cytoplasmic maturation events. *J. Pineal Res.* E-published.
3. Owczarek, A., et al. 2021. Melatonin lowers HIF-1 α content in human proximal tubular cells (HK-2) due to preventing its deacetylation by sirtuin 1. *Front. Physiol.* 11: 572911.
4. Tang, L., et al. 2021. Melatonin maintains inner blood-retinal barrier via inhibition of p38/TXNIP/NF κ B pathway in diabetic retinopathy. *J. Cell. Physiol.* 236: 5848-5864.
5. Guo, S., et al. 2021. Melatonin promotes *in vitro* maturation of vitrified-warmed mouse germinal vesicle oocytes, potentially by reducing oxidative stress through the Nrf2 pathway. *Animals* 11: 2324.
6. Yang, H.J., et al. 2021. Melatonin modulates nitric oxide-regulated WNK-SPAK/OSR1-NKCC1 signaling in dorsal raphe nucleus of rats. *Korean J. Physiol. Pharmacol.* 25: 449-457.
7. González-Candia, A., et al. 2021. Melatonin reduces oxidative stress in the right ventricle of newborn sheep gestated under chronic hypoxia. *Antioxidants* 10: 1658.
8. Xu, M.M., et al. 2022. Melatonin suppresses macrophage M1 polarization and ROS-mediated pyroptosis via activating ApoE/LDLR pathway in influenza A-induced acute lung injury. *Oxid. Med. Cell. Longev.* 2022: 2520348.
9. Zeppa, L., et al. 2024. *In vitro* and *in vivo* effects of melatonin-containing combinations in human pancreatic ductal adenocarcinoma. *J. Pineal Res.* 76: e12997.

RESEARCH USE

For research use only, not for use in diagnostic procedures.