

# PRODUCT INFORMATION



## Melatonin Receptor Type 1A (human recombinant)

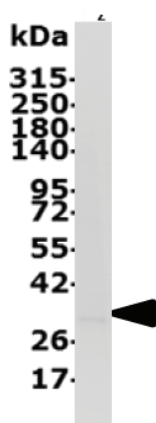
Item No. 24731

### Overview and Properties

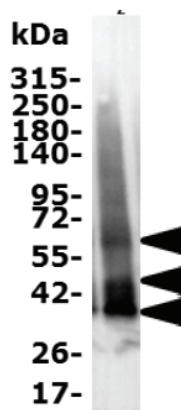
<b>Source:</b>	Human melatonin receptor type 1A (MT <sub>1</sub> ) purified from a baculovirus overexpression system in Sf9 cells
<b>Synonym:</b>	MT <sub>1</sub>
<b>Amino acids:</b>	Full length, wild-type sequence
<b>Uniprot No.:</b>	P48039
<b>Molecular Weight:</b>	44.8 kDa
<b>Storage:</b>	-80°C (as supplied)
<b>Stability:</b>	≥2 years
<b>Purity:</b>	<i>batch specific</i> (≥90% estimated by SDS-PAGE)
<b>Supplied in:</b>	25 mM disodium phosphate, pH 8.0, 150 mM sodium chloride, 0.86%/0.18% sarkosyl/CHS

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Images



IMAC elution fraction of MT<sub>1</sub> was migrated on a 4-15% Tris-glycine SDS-PAGE and the total proteins were Stain-free detected. The black arrow indicates full length MT<sub>1</sub>.



IMAC elution fraction of MT<sub>1</sub> was migrated on a 4-15% Tris-glycine SDS-PAGE, transferred to pvdf membrane and immunodetected with a rabbit polyclonal anti-MT<sub>1</sub>. Black arrows indicate the target.

WARNING  
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA  
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY  
Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

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## Description

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Melatonin receptor type 1A (MT<sub>1</sub>) (human recombinant) contains amino acids corresponding to the full length, wild-type human MT<sub>1</sub> receptor, as well as N-terminal histidine and streptavidin tags with a TEV protease cleavage site. The MT<sub>1</sub> receptor is encoded by the *MTNR1A* gene and is a G protein-coupled receptor expressed on post-synaptic terminals in the suprachiasmatic nucleus (SCN) and hypothalamus.<sup>1</sup> It is activated by melatonin and signals through G<sub>i</sub> and G<sub>q</sub> proteins. Based on MT<sub>1</sub> and MT<sub>2</sub> receptor knockout mouse studies, the MT<sub>1</sub> receptor is involved in decreasing neuronal firing in the SCN and inhibits prolactin secretion in the pituitary gland. MT<sub>1</sub> receptor activation inhibits proliferation of hormone-refractory 22Rv1 prostate cancer cells *in vitro*.<sup>2</sup> Polymorphisms in the *MTNR1A* gene are associated with a higher risk of oral cancer and hepatocellular carcinoma and of developing distant metastases<sup>3,4</sup>

## References

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1. Dubocovich, M.L., Rivera-Bermudez, M.A., Gerdin, M.J., *et al.* Molecular pharmacology, regulation and function of mammalian melatonin receptors. *Front. Biosci.* **8**, d1093-d1108 (2003).
2. Tam, C.W., Mo, C.W., Yao, K.M., *et al.* Signaling mechanisms of melatonin in antiproliferation of hormone-refractory 22Rv1 human prostate cancer cells: Implications for prostate cancer chemoprevention. *J. Pineal. Res.* **42(2)**, 191-202 (2007).
3. Lin, F.Y., Lin, C.W., Yang, S.F., *et al.* Interactions between environmental factors and melatonin receptor type 1A polymorphism in relation to oral cancer susceptibility and clinicopathologic development. *PLoS One* **10(3)**, e0121677 (2015).
4. Su, S.C., Ho, Y.C., Liu, Y.F., *et al.* Association of melatonin membrane receptor 1A/1B gene polymorphisms with the occurrence and metastasis of hepatocellular carcinoma. *Oncotarget* **8(49)**, 85655-85669 (2017).

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