Human BMAL1 Antibody

Monoclonal Mouse IgG_1 Clone # 1029533

Catalog Number: MAB105601

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human BMAL1 in direct ELISAs.
Source	Monoclonal Mouse IgG_1 Clone # 1029533
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	*E.coli*-derived recombinant human BMAL1 Met105-Glu303 Accession # O00327
Formulation	Lyophilized from a 0.2 μm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied either lyophilized or as a 0.2 μm filtered solution in PBS.

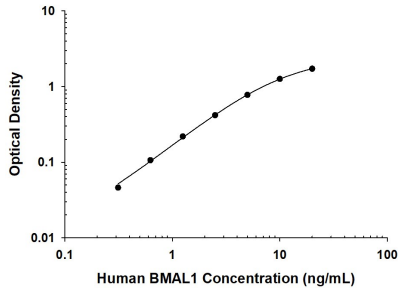
APPLICATIONS

Please Note: *Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.*

ELISA	This antibody functions as an ELISA capture antibody when paired with Mouse Anti-Human BMAL1 Monoclonal Antibody (Catalog # MAB10560). This product is intended for assay development on various assay platforms requiring antibody pairs.

DATA

ELISA



Human BMAL1 ELISA Standard Curve. Recombinant Human BMAL1 protein was serially diluted 2-fold and captured by Mouse Anti-Human BMAL1 Monoclonal Antibody (Catalog # MAB105601) coated on a Clear Polystyrene Microplate (Catalog # DY990). Mouse Anti-Human BMAL1 Monoclonal Antibody (Catalog # MAB10560) was biotinylated and incubated with the protein captured on the plate. Detection of the standard curve was achieved by incubating Streptavidin-HRP (Catalog # DY998) followed by Substrate Solution (Catalog # DY999) and stopping the enzymatic reaction with Stop Solution (Catalog # DY994).

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.5 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** • 12 months from date of receipt, -20 to -70 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after reconstitution. • 6 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

BMAL1 (Brain and Muscle ARNT-like 1; ARNTL) is an essential core component in circadian clock machinery which is regulatory mechanism for circadian rhythms. Circadian clock genes include three period proteins (PER1, PER2 and PER3), two cryptochromes (CRY1 and CRY2), CLOCK, NPAS2 and BMAL proteins, wherein BMAL1 has a potential to heterodimerize with CLOCK or NPAS2 genes; and this neocomplex drives transcription from E-box elements (5'-CACGTG-3') found in circadian-responsive genes's promoters. PER/CRY proteins negatively regulate CLOCK/BMAL1 dimer-mediated transcription, thereby forming the feedback loop that regulates the timing of clock gene transcription. BMAL1 also associates with GNB2L1/RACK1 and PRKCA in a nuclear complex, whertein GNB2L1 and PRKCA are recruited to the complex in a circadian manner. BMAL1 undergoes acetylation (Lys-538), phosphorylation and sumoylation (Lys-259) upon dimerization with CLOCK and acetylation facilitates CRY1-mediated repression. CLOCK-BMAL1 double mutations within PAS domains leads to syngernistic desensitization to high levels of CRY on repression of CLOCK-BMAL1 transcriptional activity of PER1 and, disrupt circadian rhythmicity. Clock genes functions primarily as tumor suppressors and their abbarant expression is observed in malignant pleural mesothelioma, colorectal and breast cancer.

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