

# PRODUCT INFORMATION



## MCAD Polyclonal Antibody

Item No. 101730

### Overview and Properties

|                            |                                                                                                                                                                                              |
|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Contents:</b>           | This vial contains 500 µg of protein A-purified polyclonal antibody.                                                                                                                         |
| <b>Synonyms:</b>           | ACADM, Medium-chain Fatty Acyl-CoA Dehydrogenase, Medium-chain Specific Acyl-CoA Dehydrogenase mitochondrial                                                                                 |
| <b>Immunogen:</b>          | Full length human recombinant MCAD                                                                                                                                                           |
| <b>Species Reactivity:</b> | (+) Human, mouse, ovine, porcine; other species not tested                                                                                                                                   |
| <b>Uniprot No.:</b>        | P11310                                                                                                                                                                                       |
| <b>Form:</b>               | Liquid                                                                                                                                                                                       |
| <b>Storage:</b>            | -20°C (as supplied)                                                                                                                                                                          |
| <b>Stability:</b>          | ≥3 years                                                                                                                                                                                     |
| <b>Storage Buffer:</b>     | TBS, pH 7.4, with 50% glycerol, 0.1% BSA, and 0.02% sodium azide                                                                                                                             |
| <b>Host:</b>               | Rabbit                                                                                                                                                                                       |
| <b>Applications:</b>       | Western blot (WB); the recommended starting dilution for WB is 1:200. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically. |

### Description

Medium-chain fatty acyl-CoA dehydrogenase (MCAD) is a mitochondrial enzyme that catalyzes the first step in the  $\beta$ -oxidation of fatty acids. MCAD expression is induced during periods of fasting, when reliance on fatty acids for energy is increased.<sup>1,2</sup> The promoter for MCAD contains a peroxisome proliferator response element (PPRE) and is regulated transcriptionally by peroxisome proliferator-activated receptor alpha (PPAR $\alpha$ ), a ligand-activated transcription factor involved in the regulation of lipid homeostasis.<sup>1,3,4</sup> Because of this, MCAD expression can be used as a marker to evaluate the *in vivo* activity of PPAR $\alpha$ .<sup>1,2</sup> Human MCAD is approximately 87% homologous to porcine and rat MCAD, respectively.<sup>5,6</sup> MCAD is expressed in liver, heart, kidney, and skeletal muscle.

### References

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3. Carter, M.E., Gulick, T., Moore, D.D., *et al.* A pleiotropic element in the medium-chain acyl coenzyme A dehydrogenase gene promoter mediates transcriptional regulation by multiple nuclear receptor transcription factors and defines novel receptor-DNA binding motifs. *Mol. Cell Biol.* **14**(7), 4360-4372 (1994).
4. Lemberger, T., Desvergne, B., and Wahli, W. Peroxisome proliferator-activated receptors: A nuclear receptor signaling pathway in lipid physiology. *Annu. Rev. Cell Dev. Biol.* **12**, 335-363 (1996).
5. Kelly, D.P., Kim, J.-J., Billadello, J.J., *et al.* Nucleotide sequence of medium-chain acyl-CoA dehydrogenase mRNA and its expression in enzyme-deficient human tissue. *Proc. Natl. Acad. Sci. USA* **84**(12), 4068-4072 (1987).
6. Matsubara, Y., Kraus, J.P., Ozasa, H., *et al.* Molecular cloning and nucleotide sequence of cDNA encoding the entire precursor of rat liver medium chain acyl coenzyme A dehydrogenase. *J. Biol. Chem.* **262**(21), 10104-10108 (1987).

**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.

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