9051 Mira Mesa Blvd, #910094
San Diego, CA 92191
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FABP3 Human

Fatty Acid Binding Protein-3 Human
NTP0026

Product Overview

Name	FABP3 Human

Description

Fatty Acid Binding Protein-3 Human

Synonyms

Fatty acid-binding protein heart, H-FABP, Heart-type fatty acid-binding protein, Muscle fatty acid-binding protein, M-FABP, Mammary-derived growth inhibitor, MDGI, FABP3, FABP11, O-FABP.

Source

Human heart tissue .

Physical Appearance

Sterile Filtered White lyophilized (freeze-dried) powder.

Formulation

FABP3 was lyophilized from 10mM Tris-HCl, pH 8.0.

Stability

Lyophilized Fatty Acid Binding Protein-3 although stable at room temperature for 3 weeks, should be stored desiccated below -18°C. Upon reconstitution FABP3 should be stored at 4°C between 2-7 days and for future use below -18°C. For long term storage it is recommended to add a carrier protein (0.1% HSA or BSA). Please prevent freeze-thaw cycles.

Purity

Greater than 95.0% as determined by SDS-PAGE.

Solubility

It is recommended to reconstitute the lyophilized FABP3 in sterile 18MΩ-cm H 2 O not less than 100 µg/ml, which can then be further diluted to other aqueous solutions.

Background

FABP3 is abundantly expressed in cardiac and skeletal muscle tissues, where it serves as a crucial mediator in the cellular handling of fatty acids. By facilitating the uptake, transport, and utilization of fatty acids, FABP3 ensures a steady supply of energy, making it indispensable for the high-energy-demanding heart and skeletal muscles. Beyond its role in energy metabolism, FABP3 has been implicated in diverse cellular processes, including inflammation, oxidative stress response, and cellular differentiation. Molecular Insights: At the molecular level, FABP3 exhibits a

remarkable affinity for long-chain fatty acids. Its unique binding properties enable it to shuttle fatty acids to specific cellular compartments, such as mitochondria, for β-oxidation. Additionally, FABP3 is intricately involved in the regulation of gene expression, modulating the activity of various transcription factors and signaling pathways. Understanding these molecular intricacies is key to deciphering FABP3's diverse functions. Physiological Significance: In cardiac muscle, FABP3 plays a crucial role in myocardial energy metabolism. During periods of increased energy demand, such as cardiac stress or exercise, FABP3 ensures a rapid supply of fatty acids for ATP production. Its absence or dysfunction has been associated with impaired cardiac function and increased susceptibility to ischemic injury. In skeletal muscles, FABP3 contributes to the utilization of fatty acids as an energy source during sustained physical activity. Implications in Disease: Research indicates that alterations in FABP3 expression and function are linked to several pathological conditions. In cardiovascular diseases, FABP3 has emerged as a potential biomarker for myocardial infarction, reflecting myocardial damage. Moreover, studies have highlighted its involvement in insulin resistance, diabetes, and metabolic syndrome, emphasizing its significance in metabolic disorders. Therapeutic Prospects: The unique properties of FABP3 have garnered attention in drug development. Researchers are exploring FABP3-targeted therapies for cardiovascular diseases and metabolic disorders. Modulating FABP3 activity presents a promising avenue for managing conditions characterized by dysregulated fatty acid metabolism and oxidative stress. Conclusion: FABP3, the unassuming intracellular fatty acid chaperone, plays a central role in human physiology and disease. Its intricate involvement in energy metabolism, cellular signaling, and disease pathogenesis underscores its significance as a research subject. As our understanding of FABP3 deepens, it opens doors to innovative diagnostic approaches and therapeutic interventions, potentially impacting millions of lives worldwide.

Precautions

FABP3 Human is for research use only and not for use in diagnostic or therapeutic procedures.

Background

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Significance: In cardiac muscle, FABP3 plays a crucial role in myocardial energy metabolism. During periods of increased energy demand, such as cardiac stress or exercise, FABP3 ensures a rapid supply of fatty acids for ATP production. Its absence or dysfunction has been associated with impaired cardiac function and increased susceptibility to ischemic injury. In skeletal muscles, FABP3 contributes to the utilization of fatty acids as an energy source during sustained physical activity. Implications in Disease: Research indicates that alterations in FABP3 expression and function are linked to several pathological conditions. In cardiovascular diseases, FABP3 has emerged as a potential biomarker for myocardial infarction, reflecting myocardial damage. Moreover, studies have highlighted its involvement in insulin resistance, diabetes, and metabolic syndrome, emphasizing its significance in metabolic disorders. Therapeutic Prospects: The unique properties of FABP3 have garnered attention in drug development. Researchers are exploring FABP3-targeted therapies for cardiovascular diseases and metabolic disorders. Modulating FABP3 activity presents a promising avenue for managing conditions characterized by dysregulated fatty acid metabolism and oxidative stress. Conclusion: FABP3, the unassuming intracellular fatty acid chaperone, plays a central role in human physiology and disease. Its intricate involvement in energy metabolism, cellular signaling, and disease pathogenesis underscores its significance as a research subject. As our understanding of FABP3 deepens, it opens doors to innovative diagnostic approaches and therapeutic interventions, potentially impacting millions of lives worldwide.