9051 Mira Mesa Blvd, #910094
San Diego, CA 92191
Tel: 760-390-3989

D-Dimer Human

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NTP0020

Product Overview

Name	D-Dimer Human

Description

D-Dimer Human

Source

Human plasma.

Physical Appearance

Sterile Filtered White lyophilized (freeze-dried) powder.

Formulation

D-Dimer was lyophilized from 10mM Tris-HCl and 0.15M NaCl.

Stability

Lyophilized D-Dimer although stable at room temperature for 3 weeks, should be stored desiccated below -18°C. Upon reconstitution D-Dimer 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 90.0% as determined by SDS-PAGE.

Solubility

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

Background

D-dimer, a small protein fragment present in the blood after a blood clot dissolves, is a vital marker in the realms of hematology and vascular medicine. Its presence signifies the ongoing process of fibrinolysis, where clots formed in blood vessels are broken down. Beyond its diagnostic significance, understanding the roles of D-dimer in human physiology and pathology is essential for comprehending coagulation disorders and cardiovascular diseases. This research delves into the multifaceted aspects of D-dimer, exploring its physiological functions, diagnostic applications, and implications in various medical conditions. Physiological Functions: In physiological conditions, coagulation and fibrinolysis are finely regulated processes, ensuring hemostasis and preventing excessive bleeding or clot formation. D-dimer is a natural byproduct of fibrinolysis, created when plasmin, an enzyme, breaks down fibrin clots. In this context, D-dimer acts as a marker of the body's intricate balance between clot formation and dissolution. It reflects the

ongoing maintenance of vascular integrity, showcasing the body's ability to prevent unnecessary clotting. Diagnostic Significance: D-dimer holds significant diagnostic value, especially in the context of thrombotic disorders. Elevated levels of D-dimer in the blood are indicative of increased fibrinolysis, potentially signaling an underlying clotting disorder. Clinically, D-dimer assays are widely used to rule out thromboembolic events, such as deep vein thrombosis (DVT) or pulmonary embolism (PE). Moreover, D-dimer levels are crucial in risk stratification and decision-making processes in emergency departments, aiding in the timely diagnosis and treatment of thrombotic conditions. Cardiovascular Implications: Research has indicated a strong correlation between elevated D-dimer levels and cardiovascular diseases. In conditions like coronary artery disease (CAD) and stroke, where abnormal clot formation contributes to pathogenesis, D-dimer serves as a prognostic marker. Its presence hints at the ongoing vascular damage and the potential risk of acute events. Studying these correlations provides valuable insights into the progression of cardiovascular diseases, aiding in the development of targeted therapeutic strategies. Beyond Coagulation Disorders: Interestingly, recent research has begun to explore D-dimer's involvement in conditions beyond coagulation disorders. Studies suggest links between elevated D-dimer levels and inflammatory diseases, such as sepsis and rheumatoid arthritis. This expanding scope highlights the intricate interplay between coagulation, inflammation, and immune responses, shedding light on novel avenues for therapeutic interventions. Conclusion: D-dimer, once a simple marker of fibrinolysis, has evolved into a multifaceted indicator in the realm of medicine. Its physiological role as a byproduct of clot dissolution is intertwined with its diagnostic significance in thrombotic events and cardiovascular diseases. Furthermore, emerging research is uncovering its involvement in inflammatory processes, broadening its clinical implications. By delving into the complexities of D-dimer, scientists and clinicians pave the way for a deeper understanding of coagulation disorders and associated conditions, driving advancements in diagnostics and therapies.

Precautions

D-Dimer Human is for research use only and not for use in diagnostic or therapeutic procedures.

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