

Hypoxia

Hypoxia is a pathophysiological state characterized by decreased oxygen content in inspired air and/or blood, which can decrease oxygen delivery to metabolising tissues of the body despite adequate perfusion/blood flow.

Edema

Edema is the excess extravasation into, and hence accumulation of fluid in, the interstitial/extracellular space.

Gadolinium

Gadolinium is a rare earth metal that can be used as a research tool for applications such as magnetic resonance imaging (MRI). It can be used as an MRI contrast agent because, as a paramagnetic ion, it moves differently within a magnetic field. Gadolinium can also be used in ion channel electrophysiology experiments to block sodium channel leaks, as well as to stretch activated ion channels.

Troponin(s)

Troponin(s) are a complex of three regulatory proteins (troponin C/I/T) essential for muscle contraction in skeletal and cardiac muscle. Troponin(s) (troponin-1 and troponin-2) are heterotrimeric complexes present in striated muscle (skeletal and cardiac muscle) that is comprised of a Ca^{2+} binding sub-unit (troponin-C), an inhibitory sub-unit (troponin-1), and an elongated

troponin molecule (troponin-2) which binds both troponin-C and troponin-1. In conjunction with tropomyosin, the troponin heterotrimer forms a regulatory complex that controls the interaction of actin and myosin. The binding of Ca^{2+} to troponin permits muscle contraction. Cardiac troponins (troponins 1 and 2) are released from cardiac myocytes following myocardial damage and loss of membrane integrity, and serve as highly sensitive and specific biomarkers for establishing the diagnosis of myocardial infarction.

Creatine kinase-muscle/brain-type subunit (CK-mb)

CK-mb is the enzyme that catalyzes the conversion of creatine to phosphocreatine in an ATP-dependent manner, and is thus essential for restoring phosphocreatine levels, the primary energy reserve for buffering ATP levels in the cell. CK-mb is the isoform containing both a muscle and brain type sub-unit, and represents approximately 30% of total creatine kinase protein in the myocardium.

Myoglobin

Myoglobin is a single-chain globular protein of 153 or 154 amino acids related to hemoglobin that contains a heme (iron-containing porphyrin) prosthetic group in its center around which the remaining apoprotein folds. It binds iron and oxygen and is found in the muscle tissue of virtually all vertebrates and mammals. •