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ProductInformation

Cytochrome c
Human

Product Number **C 3483**
Storage Temperature –20 °C

CAS#: 9007-43-6
Synonyms: ferricytochrome c (oxidized cytochrome c)

Product Description
Molecular Weight: 11 kDa (reducing SDS-PAGE); approximately 12,233 daltons (calculated from amino acid sequence, 11,617 daltons, and weight of heme content).[1-3]

Isoelectric point: 9.59 (calculated from amino acid sequence)[1-3]

Redox potential: +0.251 volts[4]

EmM (550 nm, reduced) = 29.5 (0.1 M phosphate buffer, pH 6.8)[5], 21.9[6]
EmM (550 nm, oxidized) = 8.4 (0.1 M phosphate buffer, pH 6.8)[5]

Cytochrome c is a hemoprotein consisting of a single polypeptide chain of 104 amino acid residues and an iron protoporphyrin IX prosthetic group (heme) covalently attached to the protein through cysteine residues at positions 14 and 17. Cytochrome c is considered an "ancient" protein since its amino acid sequence has many points of similarity in all eukaryotic organisms and even more so among mammalian cytochrome c proteins.

Cytochrome c is a small mitochondrial redox protein that occurs in all animals, plants and aerobic microorganisms. Its functional role is to serve as a mobile electron carrier, shuttling electrons from the reducing end of the cytochrome b-c_1 complex to the oxidizing end of cytochrome oxidase.

The fluctuation of cytochrome c within the cell between ferrous and ferric states (by way of the heme iron) makes it an efficient biological electron transporter and it serves a vital role in cellular oxidation. It is generally regarded as a universal catalyst of respiration, forming the essential Electron Bridge between the respirable substrates and oxygen.

Studies involving cytochrome c in apoptopic events have been reported. [7,8] Methods for preparation of reduced cytochrome c (or other heme proteins) using sodium dithionite or ascorbic acid have been reported.[9,10]

Cytochrome c is obtained from human placenta. During purification the cytochrome c was chemically oxidized. The product is lyophilized from a 0.2 μm filtered solution of phosphate buffered saline.

Purity is >95% (SDS-PAGE)

Precautions and Disclaimer
This product is for laboratory research only. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Preparation Instructions
Reconstitute the product in sterile phosphate buffered saline (PBS) solution. Solutions can be aliquoted and stored under sterile conditions at –20 °C. Avoid repeated freeze-thaw cycles.

Storage/Stability
The product as supplied should be stored at –20 °C and is stable for at least 1 year.

References
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