

Product Information

Cytochrome c human

Catalog Number **C3483**
Storage Temperature $-20\text{ }^{\circ}\text{C}$

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

Product Description

Molecular mass: 11 kDa (reducing SDS-PAGE);
~12,233 daltons (calculated from amino acid
sequence, 11,617 daltons, and mass of heme
content)¹⁻³

Isoelectric point: 9.59
(calculated from amino acid sequence)¹⁻³

Redox potential:⁴ +0.251 V

E^{mM} (550 nm, reduced) = 29.5 (0.1 M phosphate
buffer, pH 6.8)⁵, 21.9⁶
 E^{mM} (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 cys¹⁴ and cys¹⁷. 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-c₁ 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 apoptotic 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}

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

Purity: $\geq 95\%$ (SDS-PAGE)

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. 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 $-20\text{ }^{\circ}\text{C}$. Avoid repeated freeze-thaw cycles.

Storage/Stability

The product as supplied should be stored at $-20\text{ }^{\circ}\text{C}$ and remains active for at least 1 year.

References

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CS,CH,ARO,MAM 06/09-1

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