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Product Information

Complement C4
from human serum

Catalog Number **C8195**
Storage Temperature –70 °C

CAS RN 80295-48-3

Product Description

Human Complement C4 is a β_1-globulin with a molecular mass of ~203 kDa.[1] It is composed of three nonidentical polypeptide chains, α, β, and γ, with molecular masses of 93 kDa, 78 kDa, and 33 kDa, respectively.[2-4] During complement activation, the α-chain of C4 is cleaved by C1s and generates C4a and C4b.[5,6] C4b then binds activated C2a to form the C4b,2a complex, which in turn activates C3.

Complement factors C3a, C5a, and C4 can induce vasodilatation, increased capillary permeability, and expression of leukocyte adhesion molecules. Complement factors C3a and C4b are opsonins that bridge phagocytes to microorganisms. Complement factors C3a and C4a promote phagocyte chemotaxis.

This product is supplied as a solution in phosphate buffered saline (PBS), pH 7.2.

Activity: ≥300,000 C4H50 units/mg protein

Unit Definition: One C4H50 unit is defined as the amount of complement C4 required to yield 50% lysis of 3×10^7 antibody sensitized sheep erythrocytes using guinea pig complement C4 deficient serum.

For a procedure to prepare antibody-sensitized sheep erythrocytes, please visit the following link at our Enzyme Explorer:

https://www.sigmaaldrich.com/life-science/metabolomics/enzyme-explorer/cell-signaling-enzymes/complement-proteins/preparation-of-antibody.html

Protein concentration based on $E_{280}^{1\%} = 10.3$

The product is functionally pure by a sensitive hemolytic assay using deficient sera. No complement C3 is detected.

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

The product ships on dry ice and storage at –70 °C is recommended. Repeated freezing and thawing is **not** recommended.

References

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3. Nagasawa, S., and Stroud, R.M., *Fed. Proc., Fed. Am. Soc. Exp. Biol.*, **35**, 654 (1976).
4. Gigli, I. *et al.*, *Biochem. J.*, **165(3)**, 439-446 (1977).
5. Budzko, D.B., and Müller-Eberhard, H.J., *Immunochemistry*, **7(2)**, 227-234 (1970).
6. Müller-Eberhard, H.J., and Lepow, I.H., *J. Exp. Med.*, **121(5)**, 819-833 (1965).

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