

Native Rat C1q Protein

Cat. No. C1q-07R **Lot. No.** (See product label)

SPECIFICATION

Product Overview

Rat C1q is purified from pooled normal rat serum.

Extinction Coefficient: A_{280 nm} = 0.631 at 1.0 mg/mL for pure C1q

Species

Rat

Source

Rat Serum

Description

C1q is part of the C1 complex, which is the first complement component in the classical pathway of complement. The C1 complex is a non-covalent assembly of three different proteins (C1q, C1r, and C1s) bound together in a calcium-dependent complex. C1q has six extended arms with domains at the end of each arm that bind to the Fc domains of immunoglobulins such as IgG or IgM. When antibodies bind to antigens, forming immune complexes, they cluster allowing two or more of the six C1q arms to bind to the Fc domains of antibodies. Rat IgG2 is very efficient when compared to IgG1 in activating complement. This is in contrast to the human system in which IgG1 activates complement but not IgG2. The binding of multiple arms of C1q to immune complexes causes the two C1r proteins in the complex (protease zymogens) to auto-activate. The activated C1r proteases cleave and activate the two C1s protease zymogens in the complex. The activated C1s cleaves complement component C4 releasing C4a and initiating covalent attachment of C4b to the activating surface. Activated C1s also cleaves C2 and the larger fragment of C2 binds to the surface-attached C4b forming C4b,C2a, the C3/C5 convertase of the classical pathway. Rat IgG1 cannot activate complement whereas rat IgG2 does.

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Form	Frozen liquid
Molecular Mass	400 kDa (18 chains)
Purity	> 85% by SDS-PAGE
Applications	Rat C1q can be used to coat ELISA plates to capture and quantitate immune complexes in samples from rat models used for studying immune complex related diseases and conditions.
Storage	At -70 centigrade or below. Avoid freeze/thaw.
Concentration	1 mg/mL
Storage Buffer	10 mM HEPES, 300 mM NaCl, pH 7.2
Preservative	None, 0.22 µm filtered.

GENE INFORMATION

Gene Name	C1qa complement C1q A chain [Rattus norvegicus (Norway rat)]
Official Symbol	C1qa
Synonyms	C1qa; complement C1q A chain; Adic; complement C1q subcomponent subunit A; adiponectin c; complement component 1, q subcomponent, A chain; complement component 1, q subcomponent, alpha polypeptide
Gene ID	298566
mRNA Refseq	NM_001008515

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Protein Refseq	NP_001008515
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UniProt ID	P31720
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