Product Sheet

QVQ
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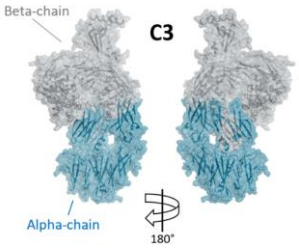
Complement component C3

Catalog no.: Q122c
Clone name: IDC3b-1_H4

Product: Single-domain antibody directed against complement protein C3

Target: The complement system plays a crucial role in immune defense. It is activated via three pathways: the classical pathway (CP), the lectin pathway (LP), and the alternative pathway (AP), resulting in opsonisation, chemoattraction of immune cells and target cell lysis.[1,2] Complement component C3, a 185 kDa protein consisting of two disulfide linked chains, is a blood circulating protein with a central role in the complement system.[1,2] During all three activation pathways C3 is cleaved by C3 convertases into C3a (9 kDa) and C3b (176 kDa). C3a acts as a chemoattractant and C3b is deposited onto pathogenic surfaces (opsonization), resulting in formation of subsequent convertase complexes and recognition by immune cells.[2,3]



α (blue) and β (grey) chains of complement protein C3. PDB 2A73.[5]

Source: Recombinant monoclonal single-domain antibody (Lama glama), purified from *S. cerevisiae* using affinity chromatography. Immunization with and phage-display selection on recombinant protein using total elution.[4]

Specificity: Human C3, human C3b.

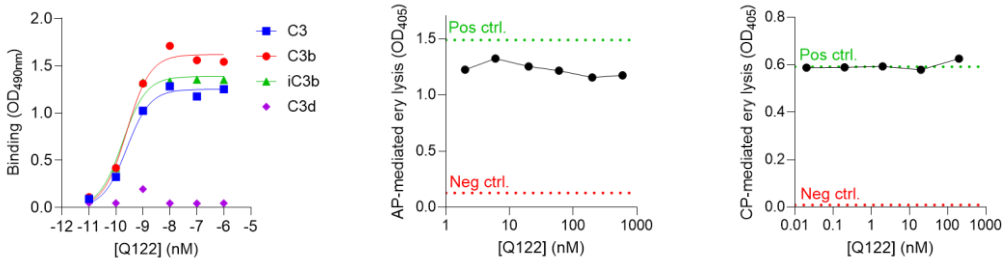
Formulation: 0.2 µm filtered solution in PBS. The products are equipped with a C-terminal C-Direct tag with an unpaired cysteine for directional conjugation.

Mol. Weight: 15.2 kDa
Ext. Coeff. (ε): 31525 M^{-1} cm^{-1}
A_{280} at 1g/L: 2.1

Storage: Shipped on blue ice. Store at 4˚C or -20˚C (aliquots). Addition of 0.02% sodium azide is optional.

Applications: ELISA

Examples:



Left: Binding of Q122c to recombinant C3, C3b, iC3b and C3d in ELISA. Middle: AP-mediated hemolysis of rabbit Erythrocytes in 10% human serum shows that addition of Q122 does not block AP activation. Right: CP-mediated hemolysis of antibody opsonized sheep erythrocytes in 2.5% human serum and sdAB shows that Q122 does not block CP activation.

References:

1 Merle et al., (2015) Front Immunol. 6:262
2 Merle et al., (2015b) Front Immunol. 6:257
3 Holers, (2014) Ann Reviews immunol. 32:433
4 E. M. Struijf, 'Nanobodies targeting complement Detecting and blocking complement activation', Utrecht University, (2023)
5 Janssen, B. et al., (2005) Nature 437:505