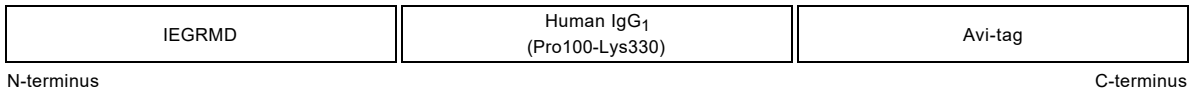
Biotinylated Recombinant Human IgG_1 Fc Avi-tag

Catalog Number: AVI110

DESCRIPTION

Source	Human embryonic kidney cell, HEK293-derived human IgG1 protein



N-terminal Sequence Analysis	Ile
Structure / Form	Disulfide-linked homodimer, Biotinylated via Avi-tag
Predicted Molecular Mass	28 kDa

SPECIFICATIONS

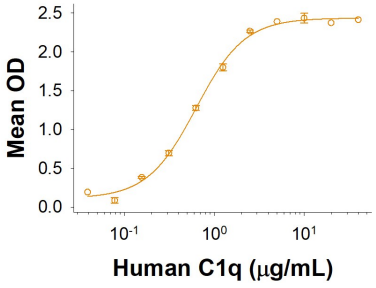
SDS-PAGE	30-42 kDa
Activity	Measured by its binding ability in a functional ELISA. When Biotinylated Recombinant Human IgG1 Fc Avi-tag (Catalog # AVI110) is immobilized at 2 µg/mL (100 µL/well) onto a Streptavidin coated plate (Catalog # CP004), it binds to Human C1q with an ED_{50} of 0.2-2.0 µg/mL.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>95%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 500 µg/mL in PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** • 12 months from date of receipt, -20 to -70 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after reconstitution. • 3 months, -20 to -70 °C under sterile conditions after reconstitution.

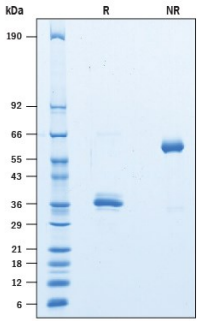
DATA

Binding Activity



When Biotinylated Recombinant Human IgG1 Fc Avi-tag (Catalog # AVI110) is immobilized at 2 µg/mL (100 µL/well) onto a Streptavidin coated plate (Catalog # CP004), it binds to Human C1q with an ED_{50} of 0.2-2.0 µg/mL.

SDS-PAGE



2 µg/lane of Recombinant Human IgG_1 Fc Avi-tag (Catalog # AVI110) was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® Blue staining, showing bands at 30-42 kDa and 60-80 kDa, respectively.

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BACKGROUND

Human Fc is the crystallizable fragment in the constant region of the human immunoglobulin heavy chain. Members of the immunoglobulin superfamily (IgSF) consist of two heavy (H) and two light (L) chains, with each component containing one variable (V) and one or more constant (C) domains (1, 2). Produced by B lymphocytes, Ig gamma (IgG) is the predominant isotype found in the body and has the longest half-life of all immunoglobulin isotypes (3). Four IgG subclasses (IgG1-4) were identified based on structural, antigenic and functional differences in the constant region of the heavy chain. The constant tail of the antibody is where proteins involved in immune responses typically bind, most notably the first component of the complement pathway, C1q, and Fc receptors found on immune cells such as B lymphocytes. Affinities for C1q and Fc gamma receptor (FcγR) differ among the IgG subclasses. Fc receptors mediate the recruitment of immune cells to a site of infection (4). Engineered crystallizable fragment (Fc) regions of antibody which assume a unique and unprecedented asymmetric structure within the homodimeric Fc polypeptide, enable completely selective binding to the complement component C1q and activation of complement via the classical pathway without any concomitant engagement of the FcγR (5).

References:

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3. Schroeder, H.W. and L. Cavacini (2010) J. Allergy Clin. Immunol. **125**:S41.
4. Duncan, A.R. and G. Winter (1998) Nature **332**:738.
5. Lee, C.H. *et al.* (2017) Nat. Immunol. **18**:889.

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