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SPECIFICATION SHEET

Product Name: Protein A — Catalog # PA01-S551H

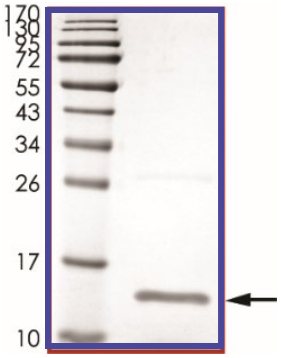
Product Description: Recombinant Protein A from *Staphylococcus aureus* was expressed in *E. coli* using N-terminal His tag.

Storage and Stability: Store at –70°C. To avoid repeated handling and multiple freeze/thaw cycles aliquot diluted product into smaller quantities.

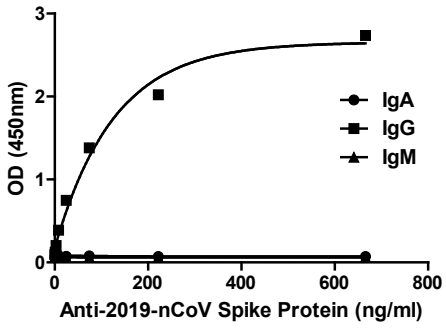
Data for a Sample Lot:

Name	: Protein A
Alternate Names	: SpA
Source	: *Staphylococcus aureus*
Accession Numbers	: Genbank: CAE54483 UniProt: Q70AB8
Host	: *E. coli*
Formulation	: Protein stored in 50mM sodium phosphate, pH 7.5, 300mM NaCl, 300mM imidazole
Molecular weight	: Calculated: 15.2 kDa Observed: ~15 kDa
Purity	: The purity was determined to be >80% by densitometry

Gel Image



Activity



Protein A specifically binds to IgG isotype of anti 2019-nCoV spike protein antibody (C19S1-61H) without any nonspecific binding to IgA (C19S1-A60H) and IgM (C19S1-M60H) isotypes of the antibody.

Scientific Background

An immunoglobulin (Ig) binding protein, Protein A (SpA) is present on the surface of bacteria and secreted into the extracellular environment. Protein A is known to bind the Fab regions, B-cell

receptor (IgM), and Fc region of antibody in the host cell and suppresses host cell immune responses (1,2). Such cross-linking is found to prevent opsonophagocytosis and result in B-cell death in vitro (2). In most cases, protein A binds IgG but in certain species the binding is restricted to IgG subclasses. This characteristic enables efficient immunoglobulin purification and analysis, and fractionation of antibody subclasses (3). Overall, protein A can be used as an immunological reagent in a broad range of studies that involve detection of antibody-secreting cells (4).

References

1. Kim, HK, et al. Protein A suppresses immune responses during Staphylococcus aureus bloodstream infection in guinea pigs. 2015, MBio 6.1: e02369-14.
2. Dossett, JH., et al. Antiphagocytic effects of staphylococcal protein A.The Journal of Immunology. 1969, 103.6 : 1405-1410.
3. Moks, Tomas, et al. Staphylococcal protein A consists of five IgG-binding domains. European journal of biochemistry. 1986, 156.3:637-643.
4. Goding JW. Use of staphylococcal protein A as an immunological reagent. Journal of immunological methods. 1978, 20:241-53.