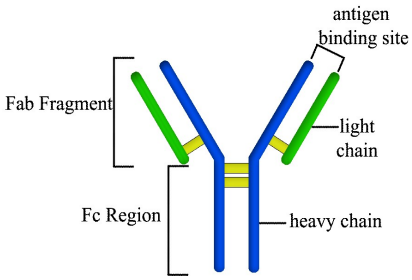
ALPHA DIAGNOSTIC INTERNATIONAL

Product Data Sheet

☐ **Cat#** CG-PRTG40 Protein G colloidal gold conjugated (40 nm, OD10) **Size**: 0.5 mL



Colloidal gold are electron dense non-fading markers that can be used as probes in electron microscopy, light microscopy, and immunoassays. Colloidal gold requires no additional processing for detection although silver enhancement can be done which increases the signal 10-fold. Biomolecules are complexed with colloidal gold through ionic interactions and the positive charge of proteins or antibodies with the negative charge of the surface of the gold colloid. Generally, particles less than 15 nm are used in transmission electron microscopy due to better penetration allowed by smaller probes. Particles greater than 15 nm are more suitable for scanning electron microscopy, light microscopy, and immunoassays.

Protein G is a bacterial cell wall protein isolated from group G *Streptococci*. Native Protein G contains two IgG-binding domains and sites for albumin and cell surface binding. The albumin and cell surface binding domains have been eliminated from purified Recombinant Protein G to reduce nonspecific binding and, therefore, can be used to separate IgG from crude samples. Optimal binding occurs at pH 5, although binding is also good at pH 7.0-7.2. Protein G has greater affinity than Protein A for most mammalian IgGs, it may be used for the purification of mammalian IgGs that do not bind well to Protein A. Protein G does not bind to human IgM, IgD and IgA. Native protein is approximately 65-kDa. It contains two albumin binding domains at the N-terminus and 3 IgG binding domains (~55-amino acids each) at the C-terminus. Differences in binding characteristics between Protein A and Protein G may be explained by the differing compositions in the IgG-binding sites of each protein, and sequence differences between Protein A and Protein G. Variations in isolation and purifications methods for Protein G may affect IgG binding, partially because there are differing numbers of IgG-binding sites on various sources of Protein G.

Form and Storage

Gold nanoparticle core size: 40 nm

Optical density: 10

Wavelength (nm): 521-526 (lot specific, see vial)

Blocking Agent: ☐ BSA ☐ Casein ☐PEG-20k

Stabilizers: Trehalose and Sucrose

Buffer: Phosphate buffer pH 7.4, 1% BSA

Preservative: 0.1% Sodium Azide

Storage: Store at 4ºC

Stability: Stable for 6 months in liquid if stored at 4ºC. *Particles may settle on the bottom of the vial, mix with a pipette before use.

Suggested Uses: This preparation is ready to use for Lateral Flow Immunoassays. Apply 4-6 ul per 0.4 cm strip. For other applications dilutions may range from A520=1.0-0.05 (1:10-1:200 dilution). Incubation times generally range from 0.5-12 hours.

Binding affinity of Protein A and G to various species Ig

+++: strong binding, ++: medium binding, +: weak binding, -: no binding.

Species	Ig Subclass	Protein A	Protein G
Human	IgG1, IgG2, IgG4	+++	+++
	IgG3	+	+++
	IgD	-	-
	IgD	+	-
	Fab	+	+
	ScF_v	+	-
Mouse	IgG1	+	++
	IgG2a, IgG2b, IgG3	+++	+++
	IgM	-	-
Rat	IgG1	+	++
	IgG2a	-	+++
	IgG2b	-	+
	IgG2c	+++	+++
Goat	IgG1	+	+++
	IgG2	+++	+++
Sheep	IgG1	+	+++
	IgG2	+++	+++
Cow / Bovine	IgG1	+	+++
	IgG2	+++	+++
Horse	IgG(ab)	+	-
	IgG(c)	+	-
	IgG(T)	-	+++
Rabbit	Total Ig	+++	+++
Dog	Total Ig	+++	+
Cat	Total Ig	+++	+
Pig	Total Ig	+++	+
Guinea pig	Total Ig	+++	+
Chicken	Total Ig	-	-

Related Material available for ADI

Catalog# Description

Recombinant Protein A, Protein G, Protein A/G coated plates, Protein A & G Sepharose beads for IP, Protein A&G Affinity columns, conjugates (Biotin, AP, FITC, HRP, Alexaflour), and antibodies also available at www.4adi.com

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