

FT-408992



Protein A, G, L immunoreagents

Unlabeled Protein	Protein A	Protein G	Protein L
(unlabeled)	UP275757 (purified) UP40290A (recombin.)	75194A, 1mg 75194B, 5mg	UP56874A, 1mg (recomb.)
Labeled Protein	Protein A conj.	Protein G conj.	Protein L conj.
HRP (peroxidase)	408992, 1mg	751952, 1mg	L79611
AP (Alkaline Phosphatase)	804102, 1mg	80413A, 0.5mg	
Biotin	303970 Inquire	43791A Inquire	BI0300
FITC [492/520nm]	408974, 2mg	43853A, 1mg	
SR101 [596/620nm]	692512, 1ml		
TRITC [550/570nm]	685652, 1ml	438671, Inquire	
R-PE (PhycoErythrin) [488/580nm]	CE8010 Inquire	CE8030 Inquire	
APC (AlloPhycoCyanin) [633nm/670nm]		CE8020 Inquire	

Form: Lyophilized

Storage: : +4°C (unlabeled: -20°C possible for long term storage (M)) (do not freeze labelled reagents(H))

- Protein A, G and L are binding to IgGs from many species (see below comparison table).
- Unlabeled products are used typically for coating purpose in solid-phase immunoassays.
- Labeled Proteins G, A and L are used as secondary detection immunoreagents in a variety of immunological applications such as ELISA, IHC/IH tissue staining, immunoblotting, MicroArrays or FCM.
- The HRP, AP labels convert specific substrates in products that can be detected easily (colori- or fluori-metry)
- The Fluorescent labels (FITC, SR101, TRITC, RPE, APC) are detected upon illumination at their characteristic wavelengths [max abs./em. wavelength]

Scientific and Technical Information

IgG binding relative binding affinity and specificity to Protein A, G and L

Data compiled from different sources. Main distinctive benefit are indicated on grey :

Species		Protein A FT- 75194A	Protein G FT- 75194A	Protein L FT- 56874A .
Human	IgGs (total)	+++	+++	+++
	IgG1	+++	++++	++++
	IgG2	+++	++++	++++
	IgG3	-/+	+++	+++
	<u>IgG4</u>	+++	++++	++++
	IgA	+	+	+++

FT-408992

Species		Protein A FT- <u>75194A</u>	Protein G FT- <u>75194A</u>	Protein L FT- <u>56874A</u>
	IgA1	+	█	+++
	<u>IgA2</u>	██	█	+++
	<u>IgD</u>	-/+	-	+++
	IgE	./+	█	+++
	<u>IgM</u>	+ / ++	█	+++
	scFv	+	█	+++
Mouse	IgG	+++	+++	+++
	IgG1	+	++	██
	IgG2a	+++	+++	+++
	IgG2b	+++	+++	+++
	<u>IgG3</u>	++	+++	+++
	IgM	-/+	-	██
Rabbit	IgG	+++	+++	+
Bovine (Cow)	IgG	+	██	-
	IgG1	+	██	-
	IgG2	+++	██	-
Cat	IgG	██	+	?
Chicken	IgY	-/+	-	-
Dog (canine)		██	+	?
Donkey		++	+++	?
Horse	IgG	++	+++	?
Goat	IgG	+	██	-
	IgG1	+	██	-
	IgG2	+++	+++	-
Guinea-pig	IgG1	██	+	?
	IgG2	██	+	?
Hamster		++	++	██
Koala		-	+	?
Llama		-	+	?
Monkey(rhesus)	IgG	+++	+++	?
Pig (Swine)	<u>IgG</u>	██	++	+++
	<u>IgA (some)</u>	-	+	? ++
	<u>IgM (some)</u>	+++	+	? ++
Rat	IgG	+	██	██
	IgG1	-/+	+	██
	IgG2a	-	██	██
	IgG2b	-	+	+
	IgG2c	++	++	██
	<u>IgG3</u>	+	██	?
	IgM	+	█	?
Sheep	IgG	+	██	-
	IgG1	+	██	-
	IgG2	+++	██	-

Strong binding +++, medium interaction ++, weak + or no interaction -.

FT-408992

Protein A

Protein A is a highly stable surface receptor produced by *Staphylococcus aureus*, of 42 kD in its native form which is capable of binding the Fc portion of immunoglobulins, especially IgGs, from a large number of laboratory or domestic species (Boyle, 1987).

As Protein A does not bind bovine IgGs, it is taken to good account in detection and purification systems of monoclonal antibodies from FCS supplemented culture media (where Protein G co-binds unspecific bovine IgGs). However, several monoclonal antibodies do not bind to Protein A, especially the majority of rat immunoglobulins and mouse IgG1.

See more protein A information properties in sheet FT-[40290A](#).

Protein G

Protein G is a highly stable surface receptor from *Streptococcus* sp. Lancefield Group G, which is capable of binding the Fc portion of immunoglobulins, especially IgGs, from a larger number of species than Protein A does (in particular with Bovine, Goat and Sheep IgGs).

As Protein G does not bind to human immunoglobulin classes (IgA, IgE, IgM, IgD), nor Mouse IgM, IgA, IgE nor to serum albumin, it is useful for specific detection and high purity one-step purification from serum, and very IgG specific serological detections.

See more protein G information in sheet FT-[75194A](#).

Protein L

Protein L from *Peptostreptococcus magnus* (M.W. 35 824 Da for recombinant protein) binds immunoglobulins (Ig) primarily through kappa (κ) light chain interactions without interfering with the antigen-binding site of Igs¹. This recognition of certain κ -light chains means that rProtein L can bind to a wider range of Ig classes and subclasses from a variety of species than any other Ig binding protein. It is in particular useful for Human IgA/D/E/M, Mouse IgG1 and IgM, Hamster and Rat Abs.

See more protein L information in sheet FT-[56874A](#).

Labels

Protein A/G/L – enzymes conjugates (**HRP**, **ALP**) are designed for immunoassays with a variety of substrates, colorigenic (i.e. OPD, TMB), fluorigenic (e.g. ADHP) or luminogenic (e.g. Luminol).

Protein A/G/L labeled by fluorescent dye (**FITC**, **TRITC**,...) are designed for fluorescent immunoassays.

Protein A/G/L – **biotin** conjugates provide a convenient way to detect or purify immunoglobulins from a variety of sources utilising the specific high-affinity interaction between biotin and (strep)avidin immunoreagents.

Guide lines for use

Reagents preparation

Protein A/G/L Lyophilized materials: after reconstitution with ultrapure water or PBS, aliquot and store at +4°C (do not freeze labelled reagents).

Coating Protein A/G/L to polystyrene microplates

Non labeled products are used typically for coating purpose in solid-phase immunoassays.

1. Dissolve Protein A/G/L (unlabeled) at 5-10 μ g/ml in 100 μ l of 0.1M sodium bicarbonate buffer (pH 9.6).

Note: 2-3 well of a 96-well plate can incubated with buffer only for control.

FT-408992

2. Incubate over night in refrigerator (or 2 hr RT).
3. Wash wells with PBS and block with 200 µl of 1% BSA (v/v) in PBS or TBS for 2 Hrs.
4. Perform a final wash with TBS with 0.1% Tween (v/v).

Plates can be used immediately or in following days.

Labeled Protein A/G/L

Conjugated Proteins G, A and L are used as secondary detection immunoreagents in a variety of immunological applications such as ELISA, IHC/IH tissue staining, immunoblotting, MicroArrays or FCM. The concentration of use depends on the technique, and should be calibrated for each application.

For example, the recommended dilution for the Protein G/A/L – HRP for ELISA or western blotting is a dilution to 0.5 µg/ml with PBS buffer. It can be expected that the dilutions will vary with the different IgG subclasses, IgG species and detection label/method.

Literature – Protein A/G/L ImmunoAssays

Kincaid, R. L. and M. S. Nightingale. A rapid non-radioactive procedure for plaque hybridization using biotinylated probes prepared by random primed labeling. *BioTechniques* 6:42–49 (1988)

O'Shannessey, D. J., Voorstad, P. J. and R. H. Quarles. Quantitation of glycoproteins on electroblots using the biotin-streptavidin complex. *Analyt. Biochem* 163:204–209 (1987).

Tijssen, P. *Practice and Theory of Enzyme Immunoassays*. (H. Burden and P. H. van Knippenberg, eds.). Elsevier Science Publishers, Amsterdam The Netherlands (1985).

Associated documents and products

Other labels: [inquire](#). Agarose conjugates: see [52746G](#).

*HRP Substrates :

TMB solution #UP664780, Op-Metal Enhanced DAB kit # 679921, UptiLight HRP chemiluminescent substrates #58372A

*AP Substrates:

pNPP tablets #UP73250, VisiGlo AP chemiluminescent substrate #BV3031

•Other Ig Binding protein: [Immobilised supports](#) [Labeled proteins A, G, L](#)

[Protein A #40290A](#) [ProteinA-agarose #UP49981](#)

[Protein G #75194A](#). [ProteinG-agarose #UP75196](#)

[Protein L #56874A](#) [ProteinL-agarose #UP52746](#)

[Elution buffers](#) (for IgG, #Q99542)

•Saturating agents:

[Carbonate coating Buffer #R16490](#)

[BSA agents: 30% solution #UP900101, powders #Q84171, BSA-containing \[PBS&TBS\]\(#\) buffers](#)

[SeaBlock agent #UP40301A](#) (to reduce background due mammalian crossreactivities)

See [BioSciences Innovations catalogue](#) and [e-search tool](#).

Other information

For use *in vitro* research use only, not for diagnostic. Not for use in diagnostic or therapeutic procedures.

For any information, please contact your local distributor.

213 av.J.F.Kennedy, 03103 Montluçon, fax :04 70 03 82 60, hotline Interbiotech : 04 70 03 73 06

rev : S1E-M11E-H05E