

Product Information

Protein L from *Peptostreptococcus magnus*, recombinant, expressed in *E. coli*

Catalog Number **P3101**
 Storage Temperature 2-8 °C

Product Description

Protein L from *Peptostreptococcus magnus* binds immunoglobulins (Ig) primarily through kappa light chain interactions without interfering with the antigen binding sites of Ig's.¹ This means that Protein L binds to a wider range of Ig classes and subclasses from a variety of species than any other commercially available Ig binding protein. It contains four Ig binding domains (B-domains).²

It may be used for the purification of IgG, IgM, IgA, IgE and IgD containing κ light chains, and for the purification of Fab and scFv fragments containing κ light chains. It may be conjugated to a solid support for affinity purification or conjugated to marker molecules for use in detection.³ Protein L does not bind to bovine, sheep or goat immunoglobulins. For this reason it may be used for the purification of monoclonal antibodies from media supplemented with bovine serum albumin or fetal calf serum. It can also be used to purify human or mouse antibodies from goat, bovine or sheep proteins. A comprehensive list of binding properties is found in the following tables.

Molecular weight: ~34,000
 Isoelectric point: 4.8

Reagent

Supplied as an essentially salt-free, lyophilized powder
 Purity: $\geq 95\%$ (SDS-PAGE)
 A_{260}/A_{280} : 0.47-0.53
 Titer test: 1:100,000 (indirect ELISA)
 Human IgG Binding Affinity²: $2-3 \times 10^9 \text{ M}^{-1}$

Preparation Instructions

May be reconstituted with phosphate buffered saline, pH 7.4, containing 15 mM sodium azide to the desired concentration. Other buffers may be used.

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

Store powder at 2-8 °C. Solutions in PBS with sodium azide may be stored at 2-8 °C for up to 1 month.

Immunoglobulin Binding to Proteins A, G and L

Species	Immuno-globulin	Binding Affinity*			
		Protein A ⁵⁻⁸	Protein G ⁹⁻¹²	Protein L ¹³	
Human	IgG (Normal)	++++	++++	++++	
	IgG1	++++	++++	++++	
	IgG2	++++	++++	++++	
	IgG3	-	++++	++++	
	IgG4	++++	++++	++++	
	IgM	-	-	++++	
	IgA	-	-	++++	
	IgE	-	-	++++	
	IgD	-	-	++++	
	Fab	++	++	++++	
Kappa	Kappa	-	-	++++	
	Lambda	-	-	-	
	ScFv	++	-	++++	
	Mouse	IgG1	+	++++	++++
		IgG2a	++++	++++	++++
IgG2b		+++	+++	++++	
IgG3		++	+++	++++	
Rat	IgG1	-	+	++++	
	IgG2a	-	++++	++++	
	IgG2b	-	++	++++	
	IgG2c	+	++	++++	
Bovine	IgG	++	++++	-	
Cat	IgG	++++	-	NA	
Chicken	IgG	-	+	++++	
Dog	IgG	++++	++++	NA	
Goat	IgG	+/-	++	-	
Guinea Pig	IgG	++++	++	++	
Hamster	IgG	+	++	++++	
Horse	IgG	++	++++	+/-	
Pig	IgG	+++	+++	++++	
Rabbit	IgG	++++	+++	+	
Sheep	IgG	+/-	++	-	

*It should be noted that protein L is restricted to specific subclasses of the VL domain. Thus, the affinity indicated in the table is not general for the IgG subclass, but accounts only for those antibodies carrying the right kappa light chain.

Binding of Protein L to Various Immunoglobulin Light Chains

Species	Protein L Binding
Human kappa I	++++
Human kappa II	-
Human kappa III	++++
Human kappa IV	++++
Human lambda I-IV	-
Human lambda IV	+
Mouse kappa I	++++
Mouse kappa II	-
Mouse kappa V	+

References

1. Björck, L., *J. Immuno.*, **140**, 1194 (1988).
2. Kastern, W., et al., *J. Biol. Chem.*, **267**, 12820 (1992).
3. Nilson, B.H.K., et al., *J. Immunol. Methods*, **164**, 33 (1993).
4. Åkerström, B., and Björck, L., *J. Biol. Chem.*, **264**, 19740 (1989).
5. Kronvall, G., et al., *J. Immunol.*, **104**, 140 (1970).
6. Richman, D.D., et al., *J. Immunol.*, **128**, 2300 (1982).
7. Langone, J.J., *J. Immunol. Methods*, **24**, 269 (1978).
8. Ey, P.L., et al., *Biochemistry*, **15**, 429 (1978).
9. Kronvall, G., *J. Immunol.*, **111**, 1401 (1973).
10. Åkerström, B., and Björck, L., *J. Biol. Chem.*, **261**, 10240 (1986).
11. Åkerström, B., *J. Immunol.*, **135**, 2589 (1985).
12. Björck, L., and Kronvall, G., *J. Immunol.*, **133**, 969 (1984).
13. De Chateau, M., et al., *Scand. J. Immunol.*, **37**, 399 (1993).

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