

# Which ligand should be used?

## Binding affinities to affinity ligands

**Table 1.** Relative binding strengths of antibodies from various species to protein A, protein G, and protein L

Species	Antibody class	Affinity*		
		Protein A	Protein G	Protein L
Human	IgG <sub>1</sub>	+++	+++	+++
	IgG <sub>2</sub>	+++	+++	+++
	IgG <sub>3</sub>	-	+++	+++
	IgG <sub>4</sub>	+++	+++	+++
	IgA	Variable	-	+++
	IgD	-	-	+++
	IgE	-	-	+++
	IgM**	Variable	-	+++
Mouse	IgG <sub>1</sub>	+	+++	+++
	IgG <sub>2a</sub>	+++	+++	+++
	IgG <sub>2b</sub>	+++	+++	+++
	IgG <sub>3</sub>	+	+++	+++
	IgM**	Variable	-	+++
Rat	IgG <sub>1</sub>	-	+	+++
	IgG <sub>2a</sub>	-	+++	+++
	IgG <sub>2b</sub>	-	+	+++
	IgG <sub>2c</sub>	nd	nd	+++
	IgG <sub>3</sub>	+	+	nd
Pig	Total IgG	+++	+++	+++
Dog	Total IgG	+	+	+
Cow	Total IgG	+	+++	-
Goat	Total IgG	-	+	-
Sheep	Total IgG	+/-	+	-
Chicken	Total IgG	nd	nd	-

Species	Antibody class	Affinity*		
		Protein A	Protein G	Protein L
Rabbit	Total IgG	+++	+++	nd
Avian egg yolk	IgY***	-	-	nd
Guinea pig	IgG <sub>1</sub>	+++	+	nd
Hamster	Total IgG	+	+	nd
Horse	Total IgG	+	+++	nd
Koala	Total IgG	-	+	nd
Llama	Total IgG	-	+	nd
Monkey (rhesus)	Total IgG	+++	+++	nd
Other	Kappa light chain (subtypes 1,3,4)	nd	nd	+++
	Lambda light chain	nd	nd	-
	Heavy chain	nd	nd	-
	Fab	+/-	+/-	+++
	ScFv	nd	nd	+++
	Dab	nd	nd	+++

+++ = strong binding  
+ = weak binding  
- = no binding  
+/- = weak binding in some cases  
nd = no data available

\* Protein G and Protein A: Relative binding strengths of antibodies from various species to protein G and protein A as measured in a competitive ELISA test. The amount of IgG required to give a 50% inhibition of binding of rabbit IgG conjugated with alkaline phosphatase was determined.

Protein L: The binding of different radiolabeled IgGs to protein L-containing *Peptostreptococcus magnus* cells were measured. Relative binding strength of different IgGs to protein L is expressed as the percentage of bound IgG to the total amount of IgG. Binding to protein L occurs only if the immunoglobulin has the appropriate kappa light chains. Stated binding affinity refers only to species and subtypes with appropriate kappa light chains. Data from De Chateau, M. *et al.* On the interaction between protein L and immunoglobulins of various mammalian species. Scand.J. Immunol. 37, 399-405 (1993).

\*\* Purified using HiTrap IgM Purification HP columns

\*\*\*Purified using HiTrap IgY Purification HP columns