

## Goat Anti-Rat IgG and IgM Antibodies

**Table 1.** Contents and storage information.

Material	Working Concentration	Storage*	Stability†
Goat anti-rat IgG and IgM antibodies	1–10 µg/mL	<ul style="list-style-type: none"> <li>• 4°C</li> <li>• Protect from light</li> <li>• Avoid repeated freezing and thawing</li> </ul>	When stored undiluted as directed, products are stable for at least 3 months.
*For longer storage, divide solution into single-use aliquots and freeze at ≤–20°C. †Frozen aliquots are stable for at least 6 months.			
<b>Approximate fluorescence excitation/emission maxima:</b> See Table 2.			

### Introduction

Goat anti-rat IgG conjugates (Table 2) are prepared from affinity-purified antibodies that react with IgG heavy chains and all classes of immunoglobulin light chains from rat. To minimize cross-reactivity, the goat anti-rat IgG antibodies have been adsorbed against mouse IgG, mouse serum, and human serum prior to labeling.

Goat anti-rat IgM conjugates (Table 2) are prepared from antibodies purified by rat IgM-affinity chromatography. The antibodies react specifically with IgM heavy chains (µ chains) and not with immunoglobulin light chains.

The goat anti-rat IgG and the goat anti-rat IgM antibody conjugates are supplied in 0.1 M sodium phosphate, 0.1 M NaCl, pH 7.5, containing 5 mM sodium azide. The goat anti-rat IgG antibody conjugates are supplied as a solution in unit sizes of 0.5 mL at 2 mg/mL, and the goat anti-rat IgM conjugates are supplied as a solution in unit sizes of 250 µL at 2 mg/mL. The Cy5-RPE conjugate is supplied in 0.1 M NaPi, 0.1 M NaCl, 2 mM EDTA, pH 7.5, 1% glycerol, and 5 mM azide.

The degree of labeling for each conjugate is typically 2–8 fluorophore or biotin molecules per IgG molecule; the exact degree of labeling is indicated on the product label. At the time of preparation, the products are certified to be free of unconjugated label and the goat anti-rat IgG antibodies are tested in a cytological experiment to ensure low nonspecific staining.

In addition to the antibodies listed in this Product Information sheet, Invitrogen prepares fluorescent conjugates of many other species-specific anti-IgG antibodies, as well as conjugates of avidin, streptavidin, NeutrAvidin™ biotin-binding protein, protein A and protein G. For details, visit [www.invitrogen.com](http://www.invitrogen.com) or contact Technical Support.

**Table 2.** Goat anti-rat IgG and IgM antibodies.

Label	Ex *	Em *	IgG†	F(ab') <sub>2</sub> fragment	IgM ‡
Unlabeled	not applicable		A10536		
Biotin-XX	not applicable		A10517		
Alexa Fluor® 350	346	442	A21093		
Alexa Fluor® 488	495	519	A11006		A21212
R-Phycoerythrin	496, 546, 565 #	578	A10545	A10544	
Cy5-R-Phycoerythrin	496, 546, 565 #	670		A10691	
Oregon Green® 488	496	524	O6382		
Fluorescein	494	519	A10528	A10527	
Tetramethylrhodamine	555	580	A10531		
Alexa Fluor® 546	556	573	A11081		
Cy3®	552	570	A10522		
Alexa Fluor® 568	578	603	A11077		
Alexa Fluor® 594	590	617	A11007		A21213
Texas Red®-X	595	615	T6392		
Alexa Fluor® 633	632	647 §	A21094		
Cy5®	649	670	A10525		
Alexa Fluor® 647	650	668 §	A21247		A21248
Allophycocyanin	650	660	A10540		
Alexa Fluor® 660	663	690 §	A21095		
Alexa Fluor® 680	679	702 §	A21096		

\* Approximate fluorescence excitation (Ex) and emission (Em) maxima, in nm. † Cross-adsorbed against mouse IgG, mouse serum, and human serum to minimize cross-reactivity. ‡ Goat anti-rat IgM antibodies have been purified by rat IgM-affinity chromatography and react with the mu chain of rat IgM, as determined by ELISA. The rat anti-IgM may also react with IgM from other species. #Multiple absorbance peaks. § Human vision is insensitive to light beyond ~650 nm, and therefore it is not possible to view the fluorescence of these dyes by looking through a conventional fluorescence microscope.

## Guidelines for Use

Centrifuge the protein conjugate solution briefly in a microcentrifuge before use; add only the supernatant to the experiment. This step eliminates any protein aggregates that may form during storage, and reduces nonspecific background staining.

Because staining protocols vary with application, empirically determine the appropriate dilution of the antibody. For these antibodies, a final concentration of 1–10 µg/mL is satisfactory for most immunohistochemical applications.<sup>1</sup>

## Reference

1. Short Protocols in Molecular Biology, 2<sup>nd</sup> Edition, F.M. Ausubel et al., Eds., John Wiley and Sons (1992) pp. 14-24–14-30.

**Product List** Current prices may be obtained from our website or from our Customer Service Department.

Cat. no.	Product Name	Unit Size
A21093	Alexa Fluor® 350 goat anti-rat IgG (H+L) *2 mg/mL*	0.5 mL
A11006	Alexa Fluor® 488 goat anti-rat IgG (H+L) *2 mg/mL*	0.5 mL
A21212	Alexa Fluor® 488 goat anti-rat IgM (μ chain) *2 mg/mL*	250 μL
A11081	Alexa Fluor® 546 goat anti-rat IgG (H+L) *2 mg/mL*	0.5 mL
A21434	Alexa Fluor® 555 goat anti-rat IgG (H+L) *2 mg/mL*	0.5 mL
A11077	Alexa Fluor® 568 goat anti-rat IgG (H+L) *2 mg/mL*	0.5 mL
A11007	Alexa Fluor® 594 goat anti-rat IgG (H+L) *2 mg/mL*	0.5 mL
A21213	Alexa Fluor® 594 goat anti-rat IgM (μ chain) *2 mg/mL*	250 μL
A21094	Alexa Fluor® 633 goat anti-rat IgG (H+L) *2 mg/mL*	0.5 mL
A21247	Alexa Fluor® 647 goat anti-rat IgG (H+L) *2 mg/mL*	0.5 mL
A21248	Alexa Fluor® 647 goat anti-rat IgM (μ chain) *2 mg/mL*	250 μL
A21095	Alexa Fluor® 660 goat anti-rat IgG (H+L) *2 mg/mL*	0.5 mL
A21096	Alexa Fluor® 680 goat anti-rat IgG (H+L) *2 mg/mL*	0.5 mL
A10540	allophycocyanin, crosslinked, goat anti-rat IgG (H+L) *1 mg/mL*	250 μL
A10517	Biotin-XX goat anti-rat IgG (H+L) *2 mg/mL*	0.5 mL
A10522	Cy3® goat anti-rat IgG (H+L) *2 mg/mL*	0.5 mL
A10525	Cy5® goat anti-rat IgG (H+L) *2 mg/mL*	0.5 mL
D20697	DSB-X™ biotin goat anti-rat IgG (H+L) *2 mg/mL*	0.5 mL
A10527	fluorescein F(ab') <sub>2</sub> fragment of goat anti-rat IgG (H+L) *2 mg/mL*	250 μL
A10528	fluorescein goat anti-rat IgG (H+L) *2 mg/mL*	0.5 mL
A10536	goat anti-rat IgG (H+L) *2 mg/mL*	0.5 mL
O6382	Oregon Green® 488 goat anti-rat IgG (H+L) *2 mg/mL*	0.5 mL
A10544	R-phycoerythrin F(ab') <sub>2</sub> fragment of goat anti-rat IgG (H+L) *1 mg/mL*	250 μL
A10545	R-phycoerythrin goat anti-rat IgG (H+L) *1 mg/mL*	250 μL
A10531	tetramethylrhodamine goat anti-rat IgG (H+L) *2 mg/mL*	0.5 mL
T6392	Texas Red®-X goat anti-rat IgG (H+L) *2 mg/mL*	0.5 mL

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