Antibodies and Related Reagents
**Antibodies and Related Reagents**

Please inquire for pricing and availability of listed products to our local sales representatives.

### Anti-Glycolipid Antibodies

**Purified Antibody**

<table>
<thead>
<tr>
<th>Antibody Type</th>
<th>Isotype</th>
<th>Concentration</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anti-GM, Monoclonal Antibody</td>
<td>Mouse IgM</td>
<td>0.1mg / vial</td>
<td>[A2505]</td>
</tr>
<tr>
<td>Anti-GM, Monoclonal Antibody</td>
<td>Mouse IgM</td>
<td>0.1mg / vial</td>
<td>[A2576]</td>
</tr>
<tr>
<td>Anti-GM, Monoclonal Antibody</td>
<td>Mouse IgM</td>
<td>0.1mg / vial</td>
<td>[A2582]</td>
</tr>
<tr>
<td>Anti-GD1a Monoclonal Antibody</td>
<td>Mouse IgG3</td>
<td>0.1mg / vial</td>
<td>[A2507]</td>
</tr>
<tr>
<td>Anti-GD1b Monoclonal Antibody</td>
<td>Mouse IgM</td>
<td>0.1mg / vial</td>
<td>[A2508]</td>
</tr>
<tr>
<td>Anti-GD3 Monoclonal Antibody</td>
<td>Mouse IgM</td>
<td>0.1mg / vial</td>
<td>[A2580]</td>
</tr>
<tr>
<td>Anti-GT1a Monoclonal Antibody</td>
<td>Mouse IgM</td>
<td>0.1mg / vial</td>
<td>[A2702]</td>
</tr>
<tr>
<td>Anti-GT1b Monoclonal Antibody</td>
<td>Mouse IgM</td>
<td>0.1mg / vial</td>
<td>[A2732]</td>
</tr>
<tr>
<td>Anti-GQ1b Monoclonal Antibody</td>
<td>Mouse IgM</td>
<td>0.1mg / vial</td>
<td>[A2662]</td>
</tr>
<tr>
<td>Anti-GalNAc-GD1a Monoclonal Antibody</td>
<td>Mouse IgM</td>
<td>0.1mg / vial</td>
<td>[A2701]</td>
</tr>
<tr>
<td>Anti-Gb2 Monoclonal Antibody</td>
<td>Mouse IgG2b</td>
<td>0.1mg / vial</td>
<td>[A2506]</td>
</tr>
<tr>
<td>Anti-Gb2 Monoclonal Antibody Biotin Conjugate</td>
<td>Mouse IgG2b</td>
<td>0.1mg / vial</td>
<td>[A2822]</td>
</tr>
<tr>
<td>Anti-SGPG (HNK-1) Monoclonal Antibody</td>
<td>Mouse IgG2a</td>
<td>0.1mg / vial</td>
<td>[A2706]</td>
</tr>
</tbody>
</table>

**Culture Supernatant**

<table>
<thead>
<tr>
<th>Antibody Type</th>
<th>Isotype</th>
<th>Concentration</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anti-GM, Monoclonal Antibody (Culture Supernatant)</td>
<td>Mouse IgM</td>
<td>0.2mL</td>
<td>[A2575]</td>
</tr>
<tr>
<td>Anti-GM, Monoclonal Antibody (Culture Supernatant)</td>
<td>Mouse IgM</td>
<td>0.2mL</td>
<td>[A2581]</td>
</tr>
<tr>
<td>Anti-GD, Monoclonal Antibody (Culture Supernatant)</td>
<td>Mouse IgM</td>
<td>0.2mL</td>
<td>[A2579]</td>
</tr>
<tr>
<td>Anti-Gb, Monoclonal Antibody (Culture Supernatant)</td>
<td>Mouse IgG2b</td>
<td>0.2mL</td>
<td>[A2586]</td>
</tr>
</tbody>
</table>

### Anti-Glycosaminoglycan Antibodies

**Purified Antibody**

<table>
<thead>
<tr>
<th>Antibody Type</th>
<th>Isotype</th>
<th>Concentration</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anti-Chondroitin Sulfate A Monoclonal Antibody (LY111)</td>
<td>Mouse IgM</td>
<td>0.1mg / vial</td>
<td>[A3143]</td>
</tr>
<tr>
<td>Anti-Chondroitin Sulfate D Monoclonal Antibody (MO-225)</td>
<td>Mouse IgM</td>
<td>0.1mg / vial</td>
<td>[A2872]</td>
</tr>
<tr>
<td>Anti-Keratan Sulfate Monoclonal Antibody (R-10G)</td>
<td>Mouse IgG1</td>
<td>0.1mg / vial</td>
<td>[A2968]</td>
</tr>
</tbody>
</table>

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Antibodies and Related Reagents

**Purified Antibody**

**Anti-Lewis X Monoclonal Antibody**  
Isotype: Mouse IgM  
0.1mg / vial [A2578]

**Anti-Lewis Y Monoclonal Antibody**  
Isotype: Mouse IgG3  
0.1mg / vial [A2510]

**Anti-Sialyl Lewis A Monoclonal Antibody (1H4)**  
Isotype: Mouse IgG3  
0.1mg / vial [A2584]

**Anti-Sialyl Lewis A Monoclonal Antibody (2D3)**  
Isotype: Mouse IgM  
0.1mg / vial [A2509]

**Anti-Sialyl Lewis X Monoclonal Antibody**  
Isotype: Mouse IgM  
0.1mg / vial [A2849]

**Culture Supernatant**

**Anti-Lewis X Monoclonal Antibody (Culture Supernatant)**  
Isotype: Mouse IgM  
0.2mL [A2577]

**Anti-Lewis Y Monoclonal Antibody (Culture Supernatant)**  
Isotype: Mouse IgG3  
0.2mL [A2587]

**Anti-Sialyl Lewis A Monoclonal Antibody (1H4, Culture Supernatant)**  
Isotype: Mouse IgG3  
0.2mL [A2583]

**Anti-Sialyl Lewis X Monoclonal Antibody (Culture Supernatant)**  
Isotype: Mouse IgM  
0.5mL [A2660]

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**Antibodies and Related Reagents**

**Anti-αGal Antibodies**

**Anti-αGal Polyclonal Antibody (Chicken)**
Isotype: Chicken IgY

**Anti-αGal Polyclonal Antibody Biotin Conjugate**

**Anti-αGal Chicken Polyclonal Antibody HRP Conjugate**

Anti-αGal antibody can be utilized for detection of the αGal epitope on glycoproteins.

Western blotting analysis performed using an anti-αGal polyclonal antibody biotin conjugate [A3144].

Lane 1: Thyroglobulin, porcine thyroid gland.
Lane 2: Laminin, Engelbreth-Holm-Swarm murine sarcoma basement membrane.
Lane 3: Thyroglobulin treated with α1-3, 4, 6 galactosidase.
Lane 4: Laminin treated with α1-3, 4, 6 galactosidase.

Anti-αGal antibody shows the same high specificity compared with an anti-αGal monoclonal antibody.

Glycoconjugates coated on ELISA plate. Results following epitope and anti-αGal antibodies incubation. 1st Ab were detected using appropriate secondary antibodies.

**Anti-Protein A Antibodies**

**Anti-Protein A Chicken Polyclonal Antibody**
Immunogen: Protein A (Staphylococcus aureus-derived) Isotype: Chicken IgY

**Anti-Protein A Chicken Polyclonal Antibody Biotin Conjugate**

**Anti-Protein A Chicken Polyclonal Antibody HRP Conjugate**

**High-sensitive detection of Protein A by sandwich-ELISA**

[Example of calibration curve]

- Anti-Protein A antibody [A3044] was diluted with sodium carbonate buffer (pH 8.5), and coated on an ELISA plate.
- Blocking for 2 hours with 1% BSA / TBS-T.
- After washing 3 times with TBS-T, the sample was added to each well and incubated for 30 minutes.
- After washing 3 times with TBS-T, 1mg / mL of anti-Protein A antibody biotin conjugate [A3045] was added to each well and incubated for 30 minutes.
- After washing 3 times with TBS-T, SA-HRP (S0972) was added to each well and incubated for 30 minutes.
- After washing 3 times with TBS-T, add TMB solution and react for 30 minutes.
- The reaction was stopped by adding 1 N HCl, and the absorbance was measured at 450nm.
Antibodies and Related Reagents

**Anti-Tag Antibodies**

**Anti-HHHHHH (6xHis) Antibody**
- **Anti-6xHis Monoclonal Antibody (6A12)**
  - Immunogen: HHHHHH (6xHis)  
  - Isotype: Mouse IgG1
  - 0.1mg / vial [A2957]
- **Anti-6xHis Monoclonal Antibody (6A12) Biotin Conjugate**
  - 0.05mg / vial [A3010]
- **Anti-6xHis Monoclonal Antibody (6A12) HRP Conjugate**
  - 0.05mg / vial [A3075]

**Detection of 6xHis**

<table>
<thead>
<tr>
<th>Lane</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>M 1</td>
<td>Purified 6xHis protein</td>
</tr>
<tr>
<td>M 2</td>
<td>E. coli whole cell lysate - expressing 6xHis protein</td>
</tr>
<tr>
<td>M 3</td>
<td>E. coli whole cell lysate</td>
</tr>
</tbody>
</table>

Western blot analysis of 6xHis protein using 6A12(A2957). This monoclonal antibody is useful tool for detecting the 6xHis-tagged protein.

**Anti-Glutathione S-Transferase (GST) Antibody**
- **Anti-GST Monoclonal Antibody**
  - Immunogen: Glutathione S-transferase (GST)  
  - Isotype: Mouse IgG2a
  - 0.1mg / vial [A3175]
- **Anti-GST Monoclonal Antibody Biotin Conjugate**
  - 0.05mg / vial [A3226]

**Detection of GST**

<table>
<thead>
<tr>
<th>Lane</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>M 1</td>
<td>GST (nonreduction)</td>
</tr>
<tr>
<td>M 2</td>
<td>GST (reduction)</td>
</tr>
</tbody>
</table>

**Anti-Endo-M Antibodies**
- **Anti-Endo-M Polyclonal Antibody**
  - Immunogen: endo-β-N-Acetylglucosaminidase (Endo-M)  
  - Isotype: Rabbit IgG
  - 0.2mg / vial [A2958]
- **Anti-Endo-M Polyclonal Antibody Biotin Conjugate**
  - 0.1mg / vial [A2959]

**Enzyme which Transfers the Intact Oligosaccharides**
- **endo-β-N-Acetylglucosaminidase (=Endo-M)**
  - Recombinant: from *Mucor hiemalis* expressed in *Candida boidinii*
  - 1vial [A1651]
- **Glycosynthase (Endo-M-N175Q)**
  - Recombinant: from *Mucor hiemalis* expressed in *Escherichia coli*
  - 1vial [G0365]
Antibodies and Related Reagents

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**Secondary Antibodies and Others**

**Anti-Mouse IgG**
- Goat Anti-Mouse IgG 1mg / vial [G0386]
- Goat Anti-Mouse IgG Biotin Conjugate 0.1mg / vial [G0387]
- Goat Anti-Mouse IgG HRP Conjugate 0.1mg / vial [G0407]
- Goat Anti-Mouse IgG FITC Conjugate 0.1mg / vial [G0406]

**Anti-Mouse IgM**
- Goat Anti-Mouse IgM 1mg / vial [G0408]
- Goat Anti-Mouse IgM Biotin Conjugate 0.1mg / vial [G0432]
- Goat Anti-Mouse IgM HRP Conjugate 0.1mg / vial [G0417]
- Goat Anti-Mouse IgM FITC Conjugate 0.1mg / vial [G0453]

**Anti-Rabbit IgG**
- Goat Anti-Rabbit IgG 1mg / vial [G0388]
- Goat Anti-Rabbit IgG Biotin Conjugate 0.1mg / vial [G0389]
- Goat Anti-Rabbit IgG HRP Conjugate 0.1mg / vial [G0418]
- Goat Anti-Rabbit IgG FITC Conjugate 0.1mg / vial [G0452]

**Anti-Chicken IgY**
- Sheep Anti-Chicken IgY 1mg / vial [S0998]
- Sheep Anti-Chicken IgY Biotin Conjugate 0.1mg / vial [H1619]
- Sheep Anti-Chicken IgY HRP Conjugate 0.1mg / vial [S0999]

**Anti-HRP Antibody**
- Anti-HRP Rabbit Polyclonal Antibody 0.2mL [A2250]
  - Immunogen: Horseradish Peroxidase
  - Isotype: Rabbit IgG

**Anti-Human IgG**
- Mouse Anti-Human IgG Fc 0.1mg / vial [M2977]
- Mouse Anti-Human IgG Fc Biotin Conjugate 0.1mg / vial [M3053]

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**Detection of Human IgG Fc**

![Western blotting](image1)

**M2977**
- Western blotting
- Lane 1: Human serum
- Lane 2: Human IgG
- Lane 3: Human serum
- Lane 4: Human IgG

![CBB staining](image2)

**CBB staining**
- M.W. (KDa)
- Lane 1: Human serum
- Lane 2: Human IgG
- Lane 3: Human serum
- Lane 4: Human IgG

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Antibodies and Related Reagents

Anti-Influenza Antibodies

Anti-Influenza A Virus Neuraminidase N1 Monoclonal Antibody
  Immunogen: Influenza A/Brisbane/262/95  Clone name: 2-3B  Isotype: Mouse IgG1
  $0.2mL$ [A2407]

Anti-Influenza A Virus Hemagglutinin H3 Monoclonal Antibody
  Immunogen: Influenza A/Sydney/5/97  Clone name: 1G8  Isotype: Mouse IgG3
  $0.2mL$ [I0779]

Anti-Influenza A Virus Neuraminidase N2 Monoclonal Antibody
  Immunogen: Influenza A/Sydney/5/97  Clone name: 1-48  Isotype: Mouse IgG1
  $0.2mL$ [A2380]

Anti-Influenza A Virus Nucleoprotein Monoclonal Antibody
  Immunogen: Influenza A/Beijing/262/95  Clone name: 17  Isotype: Mouse IgG2a
  $0.2mL$ [A2406]

Protein Products

Streptavidin

Streptavidin from Streptomyces avidinii
  $1mg$ / vial [S0951]

Streptavidin HRP Conjugate
  $0.1mg$ / vial [S0972]

Streptavidin FITC Conjugate
  $0.1mg$ / vial [S0966]

Streptavidin DTBTA-Eu³⁺ Conjugate
  $0.1mg$ / vial [S0993]

Streptavidin Maleimide Conjugate
  $0.5mg$ / vial [T3531]

Protein A

Protein A Agarose
  $2mL$ / vial [P2461]

Protein A is a type I membrane protein produced by several strains of Staphylococcus aureus. It has high-affinity binding sites for IgGs obtained from various species such as humans, rabbit, mouse, and bovine. Protein A supported by agarose resin is prepared using a covalent coupling method and can be applied to the purification of IgGs. By using P2461, human IgGs can be eluted under milder conditions (such as at pH 4.0) compared to using other resins with conventional eluting protocols.

Protein A Recombinant, expressed in Escherichia coli
  $5mg$ / vial [P2366]

Protein A Biotin Conjugate
  $1mg$ / vial [P2407]

Protein A HRP Conjugate
  $0.2mg$ / vial [P2466]
Highly-sensitive Detection Probes for Time-resolved Fluorometry

Goat Anti-Mouse IgG DTBTA-Eu\(^{3+}\) Conjugate 0.1mg / vial [G0505]
Goat Anti-Rabbit IgG DTBTA-Eu\(^{3+}\) Conjugate 0.1mg / vial [G0506]
Streptavidin DTBTA-Eu\(^{3+}\) Conjugate 0.1mg / vial [S0993]

**Advantages**

- No cross talk of excitation light
  - \(\lambda_{\text{ex}}, \text{max}=335\) nm
  - \(\lambda_{\text{em}}, \text{max}=616\) nm
- Sharpened emission spectrum
- Large Stokes shift (the difference in wavelength between positions of the band maxima of the absorption and emission spectra)
- Stable fluorescence in various aqueous buffers
  - Available in Tris, TE, PBS, etc., for wide use
- Long fluorescent life time (\(\tau=1.02\) ms)
  - Time-resolved fluorometric measurement can remove background fluorescence from the sample matrix and often gives detectability better than one order of magnitude compared to those of conventional fluorometric assays.

**Comparison of secondary antibody conjugated to DTBTA-Eu\(^{3+}\) or FITC**

Time-resolved fluorometric measurement can remove background fluorescence!

To obtain a high SN ratio

Anti-DTBTA-Eu\(^{3+}\) Antibody 0.5mL [A2239]
Anti-DTBTA-Eu\(^{3+}\) Rabbit Polyclonal Antibody 0.5mL [A2181]
DTBTA-Eu\(^{3+}\) Rabbit Antiserum
DTBTA-Eu\(^{3+}\) Labeling Reagent ATBTA-Eu\(^{3+}\) 10mg [A2083]

<Assay condition>
Dilute the Mouse IgG to each concentration. Goat 96-well plates with diluted Mouse IgG. Block the plates with BSA/TBST. Incubate with Goat Anti-Mouse IgG Conjugates prepared from DTBTA or FITC at 2.5 \(\mu\)g/mL. After incubation, measure the fluorescence intensity on a plate reader. DTBTA-Eu\(^{3+}\): excitation=340 nm, emission=620 nm. Lag Time: 450 \(\mu\)sec
FITC, excitation=486 nm, emission=520 nm.
Cell Staining Reagents

**Methylene Blue Solution** (Methanol Solution) [for Cell Staining]  100mL  [M2392]

**Application**

1. Culture cells in a 6-well plate  
2. Remove medium from the plate and wash it with PBS(-) twice  
3. Remove PBS(-) from it, add 1mL of M2392 and stain cells for 15 minutes  
4. Remove M2392 from it and wash it with deionized water twice

Figure. NIH/3T3 cells stained by the above method  
Please adjust staining time and volume according to cells. Because some cells need to be fixed separately, preliminary tests should be performed.

Cell Proliferation Assay Reagents

**Resazurin** (Ready-to-use solution) [for Cell proliferation assay]  25mL  [R0195]

**Mechanism**

Resazurin can be used quantitatively determine cell proliferation, viability, and cytotoxicity. Resazurin, when added to viable cells, is reduced by the cellular enzymatic or chemical reactions converting blue/non-fluorescent resazurin to highly fluorescent resorufin. The assay is simple to perform since the indicator is water-soluble and has low toxicity, thus eliminating the washing/fixing and extraction steps required in other commonly used cell proliferation assays.

**Cell viability assay**

![Graph showing cell number vs. fluorescent intensity](image)

**Application**

1. Add R0195 at a volume equal to 10% of the cell culture media volume.  
2. Return cells to the incubator and continue the incubation for 2-24 hours*.  
3. Measure the fluorescent intensity using 540-570 nm excitation and 590 nm emission wavelengths. Absorbance can be measured using a spectrophotometer set at 570 nm.  

*Resazurin may be added at any time point during the culture period. For measurement of cell proliferation, it is best to add resazurin during the log phase of growth.
Chromogenic Substrates for Immunological Assay

4-CN (Ready-to-use solution) [for Western blotting] 100mL [C3384]
pNPP (Ready-to-use solution) [for ELISA] 100mL [N1109]

Protein Staining Reagents

Coomassie Brilliant Blue G-250 (Ready-to-use solution) [for Electrophoresis] 500mL [C3488]

Application

1) After electrophoresis, wash the gel with deionized water for 5 minutes three times.
2) Remove the water used for washing, add C3488 till the gel is soaked, and let the gel stain for 1 hour while shaking gently at room temperature.
3) Remove the staining solution, destain the gel with deionized water for 1 hour and check it.
4) If the background is high, destain the gel with deionized water overnight at room temperature.

![Proteins stained by the above method (destained overnight)](image)

<table>
<thead>
<tr>
<th>each protein content</th>
<th>500</th>
<th>250</th>
<th>125</th>
<th>62.5</th>
<th>31.3</th>
<th>15.6</th>
<th>7.8</th>
<th>3.9 (ng/lane)</th>
</tr>
</thead>
<tbody>
<tr>
<td>M.W. (kDa)</td>
<td>200</td>
<td>140</td>
<td>100</td>
<td>73</td>
<td>57</td>
<td>41</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(*Content of 100kDa protein is double.)
Pyrogallol Red (Ready-to-use solution) [for Protein determination] 100mL [P2575]

**Application**

2. Mix P2575 with unknown protein samples, standard protein solutions and distilled water according to Table 1.
3. Incubate for 30 minutes at room temperature.
4. Measure absorbance at 600 nm.
5. Prepare a standard curve by plotting the absorbance data measured in #4) after subtracting from blank absorbance (distilled water), and calculate the amount of protein in test samples.

<table>
<thead>
<tr>
<th>Assay</th>
<th>test tube</th>
<th>micro plate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measurement range</td>
<td>0.1 -1.0 mg/mL</td>
<td>0.1 -1.0 mg/mL</td>
</tr>
<tr>
<td>Sample solution or *protein standard</td>
<td>50 μL</td>
<td>10 μL</td>
</tr>
<tr>
<td>P2575</td>
<td>1 mL</td>
<td>200 μL</td>
</tr>
</tbody>
</table>

*This product requires the standard protein solution (such as BSA).

**Example for use: in a microplate**

1. Prepare four dilution series of standard protein solutions from the concentration at 1000 μg/mL by doubling dilution.
2. Mix 200 μL of P2575 with 10 μL each of a protein sample at an unknown concentration, the standard protein solution and distilled water in a 96 microplate.
3. Incubate for 30 minutes at room temperature, measure absorbance at 600 nm, and prepare a standard curve.

Bradford Assay Solution (Ready-to-use) [for Protein determination] 500mL [B5702]

**Application**

2. Mix B5702 with unknown protein samples, standard protein solutions and distilled water according to Table 2.
3. Incubate for 5 minutes at room temperature.
4. Measure absorbance at 600 nm.
5. Prepare a standard curve by plotting the absorbance data measured in #4) after subtracting from blank absorbance (distilled water), and calculate the amount of protein in test samples.

<table>
<thead>
<tr>
<th>Assay</th>
<th>test tube</th>
<th>micro plate</th>
<th>micro assay</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measurement range</td>
<td>0.1 -1.0 mg/mL</td>
<td>0.1 -1.0 mg/mL</td>
<td>0.1 -25 μg/mL</td>
</tr>
<tr>
<td>Sample solution or *protein standard</td>
<td>20 μL</td>
<td>4 μL</td>
<td>500 μL</td>
</tr>
<tr>
<td>B5702</td>
<td>1 mL</td>
<td>200 μL</td>
<td>500 μL</td>
</tr>
</tbody>
</table>

*This product requires the standard protein solution (such as BSA).*
Synthetic Carbohydrate Chains

Gbβ3-ethylamine [G0402]

Ganglioside GM3[d18:1, (Carbon-13)C16:0] [G0419]

Ganglioside GM3[d18:1, (Carbon-13)C16:0] [G0419]

HNK-1 Ethylazide [H1333]

Forsman Pentose MP Glycoside [F0584]

Sialyl Neolactotetraosylceramide [S0910]

SSEA-1-PrNH2 [S0946]

Sialyl Lewis X-Lactose [S0849]

G2 Glycan [G0487]

Gαlβ(1-3)GαlNαcβ(1-3)Gαla(1-4)Gαlβ(1-4)Glcβ-β-PNP [G0355]

α-Galactosylceramide (= α-GalCer) [G0509]

Feel free to contact us. Using advanced proprietary technologies, we synthesize a wide range of sugar chains for daily research.