**α-Bungarotoxin and Conjugates**

**Quick Facts**

**Storage upon receipt:**
- ≤–20°C
- Avoid freeze-thaw cycles
- Protect from light

**Introduction**

α-Bungarotoxin, which is extracted from *Bungarus multicinctus* venom, has been used to stain acetylcholine (ACh) receptors in skeletal muscle,1 rat myotubules,2 the electric organ from *Torpedo californica*,3 and transformed *Escherichia coli*.4 Molecular Probes offers unlabeled α-bungarotoxin or α-bungarotoxin labeled with biotin or with a wide selection of fluorophores (Table 1). Fluorescent α-bungarotoxin derivatives are particularly valuable for visualizing the distribution of ACh receptors during neuromuscular junction development.5,6 Our bibliography for tetramethylrhodamine α-bungarotoxin (T1175), which is available at our website (probes.invitrogen.com), lists over 100 publications that have used this probe. Our Alexa Fluor® 488 conjugate of α-bungarotoxin (B13422) is the preferred green fluorescent derivative because of its brightness, pH insensitivity and much greater photostability than fluorescein α-bungarotoxin. The farred fluorescence of our Alexa Fluor® 647 (B35450) or Alexa Fluor® 680 (B35452) conjugates readily permits three and four-color experiments.

**Properties**

The molecular weight of unlabeled α-bungarotoxin is about 8,000. Molecular Probes attaches approximately one fluorophore or one biotin to each α-bungarotoxin, thus retaining optimal binding specificity. The labeled bungarotoxins are then chromatographically separated from unlabeled molecules to ensure maximum labeling of the product. Peak excitation and emission wavelengths for each conjugate are listed in Table 1.

**Materials**

Unlabeled α-bungarotoxin (B1601) is supplied as a lyophilized powder in a unit size of 1 mg. The α-bungarotoxin conjugates are supplied as lyophilized powders from phosphate-buffered saline, pH 7.4 (PBS) in a unit size of 500 μg. The lyophilized products should be stored desiccated at ≤–20°C.

A 1 mg/mL stock solution can be made by reconstituting unlabeled α-bungarotoxin in 1 mL of PBS or the α-bungarotoxin conjugates in the appropriate volume of distilled water (e.g., 0.5 mL). Store the solution at 2–6°C with the addition of sodium azide to a final concentration of 2 mM. For longer storage, divide the solution into aliquots and freeze at ≤–20°C. When properly stored, these products are stable for several months. PROTECT FROM LIGHT. AVOID REPEATED FREEZING AND THAWING.

It is a good practice to centrifuge the peptide conjugate solution briefly in a microcentrifuge before use; only the supernatant should then be added to the experiment. This step will eliminate any peptide aggregates that may have formed in solution, thereby reducing nonspecific background staining.

**Table 1. Molecular Probes’ α-bungarotoxin conjugates.**

<table>
<thead>
<tr>
<th>Cat #</th>
<th>Conjugate</th>
<th>Ex *</th>
<th>Em *</th>
</tr>
</thead>
<tbody>
<tr>
<td>B13422</td>
<td>Alexa Fluor® 488</td>
<td>495</td>
<td>519</td>
</tr>
<tr>
<td>F1176</td>
<td>Fluorescin</td>
<td>494</td>
<td>518</td>
</tr>
<tr>
<td>B7488</td>
<td>Oregon Green® 514</td>
<td>512</td>
<td>530</td>
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<tr>
<td>T1175</td>
<td>Tetramethylrhodamine</td>
<td>554</td>
<td>577</td>
</tr>
<tr>
<td>B35451</td>
<td>Alexa Fluor® 555</td>
<td>555</td>
<td>565</td>
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<td>B13423</td>
<td>Alexa Fluor® 594</td>
<td>590</td>
<td>617</td>
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<tr>
<td>B7489</td>
<td>Texas Red®-X</td>
<td>593</td>
<td>613</td>
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<tr>
<td>B1196</td>
<td>Biotin-XX</td>
<td>NA</td>
<td>NA</td>
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<tr>
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<td>Alexa Fluor® 647</td>
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<td>668</td>
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<tr>
<td>B35452</td>
<td>Alexa Fluor® 680</td>
<td>679</td>
<td>702</td>
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</table>

*Approximate fluorescence excitation (Ex) and emission (Em) maxima, in nm.

Complete spectra for these dyes are available at our website (probes.invitrogen.com).

**References**

Several Molecular Probes products and product applications are covered by U.S. and foreign patents and patents pending. All names containing the designation ® are registered with the U.S. Patent and Trademark Office.

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Please visit our website—probes.invitrogen.com—for the most up-to-date information.

Molecular Probes, Inc.
29851 Willow Creek Road, Eugene, OR 97402
Phone: (541) 465-8300 • Fax: (541) 335-0504
Customer Service: 6:00 am to 4:30 pm (Pacific Time)
Phone: (541) 335-0338 • Fax: (541) 335-0305 • probesorder@invitrogen.com
Toll-Free Ordering for USA:
Order Phone: (800) 438-2209 • Order Fax: (800) 438-0228
Technical Service: 8:00 am to 4:00 pm (Pacific Time)
Phone: (541) 335-0353 • Toll-Free (800) 438-2209
Fax: (541) 335-0238 • probestech@invitrogen.com

Invitrogen European Headquarters
Invitrogen, Ltd.
3 Fountain Drive
Inchinnan Business Park
Paisley PA4 9RF, UK
Phone: +44 (0) 141 814 6100 • Fax: +44 (0) 141 814 6260
Email: euroinfo@invitrogen.com
Technical Services: eurotech@invitrogen.com

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