

# Europium Fluorescent Labeling Reagent and Labeled Probes

## Europium Fluorescent Labeling Reagent

**ATBTA-Eu<sup>3+</sup>**  
**Cyanuric Chloride**

10mg [A2083]  
25g / 500g [C0460]

ATBTA-Eu<sup>3+</sup> is a europium chelate complex and can be used as a fluorescent labeling reagent. ATBTA-Eu<sup>3+</sup> is easily labeled to protein etc. after conversion to DTBTA-Eu<sup>3+</sup> by Cyanuric Chloride.

### Advantages

**Long fluorescent life time (  $\tau = 1.02\text{ms}^*$  )**

For time-resolved fluorometry

**Stable fluorescence in various aqueous buffers**

Available in Tris, TE PBS, etc. for wide use

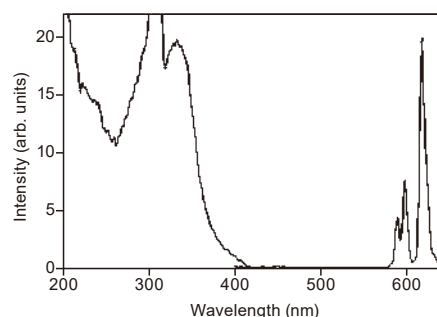
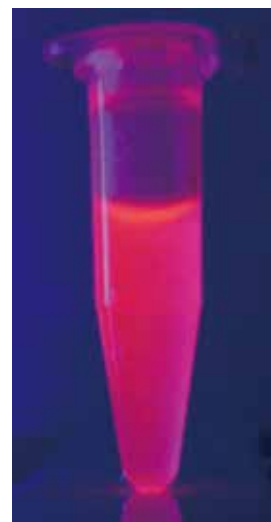
**No cross talk of excitation light**

- $\lambda_{\text{ex, max}} = 335\text{nm}^*$
- $\lambda_{\text{em, max}} = 616\text{nm}^*$

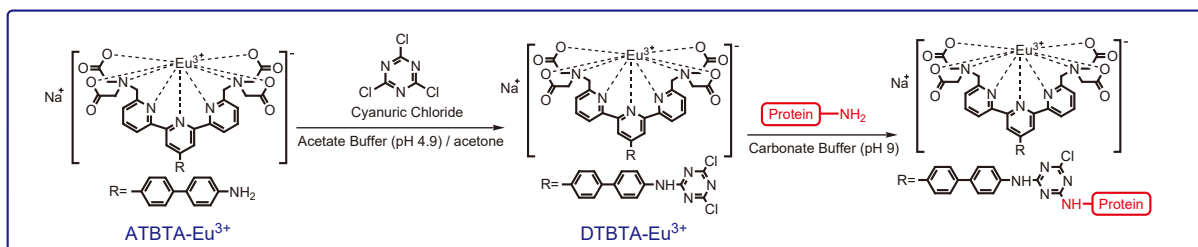
Sharpened emission spectrum

Large Stokes shift (the difference in wavelength between positions of the band maxima of the absorption and emission spectra)

\*Data as DTBTA-Eu<sup>3+</sup>



## Conversion of ATBTA-Eu<sup>3+</sup> to DTBTA-Eu<sup>3+</sup> and the labeling reaction to amino groups



### Typical Procedure (Preparation of DTBTA-Eu<sup>3+</sup>)

Dissolve 2 mg of ATBTA-Eu<sup>3+</sup> in 60  $\mu\text{L}$  of 0.1M acetate buffer (pH 4.9). This solution is added 0.43 mg of Cyanuric Chloride in 25  $\mu\text{L}$  of acetone, and stirred for 30 minutes. The reaction mixture is added dropwise to 1 mL of acetone, and formed precipitate is centrifuged. After washing with 0.5 mL of acetone twice, the yellow powder is dried in vacuum for 1 hour. Dissolve the powder in 1mL of carbonate buffer gives (pH 9) for labeling. This solution contains ca. 2 mM of labeling reagent.

### Warning

This labeling reagent is deactivated by hydrolysis, especially in alkali solution. The reagent dissolved in water should be used immediately. For temporary storage, the reagent should be dissolved in buffer solution at acidic pH (pH <5) and kept at 0  $^{\circ}\text{C}$ .

## DTBTA-Eu<sup>3+</sup>-labeled Secondary Antibodies and Streptavidin

**Goat Anti-Mouse IgG DTBTA-Eu<sup>3+</sup> Conjugate**

0.1mg/vial [G0505]

**Goat Anti-Rabbit IgG DTBTA-Eu<sup>3+</sup> Conjugate**

0.1mg/vial [G0506]

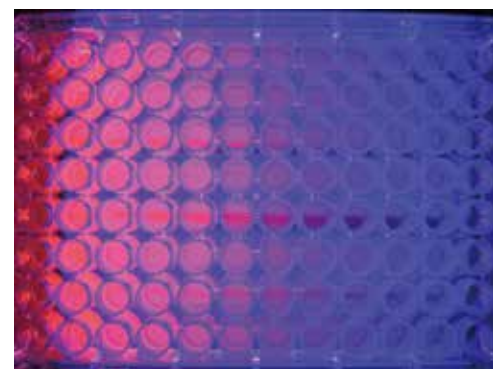
**Streptavidin DTBTA-Eu<sup>3+</sup> Conjugate**

0.1mg/vial [S0993]

\*G0505 and G0506 are unavailable in the U.S. and China. S0993 is also unavailable in China.

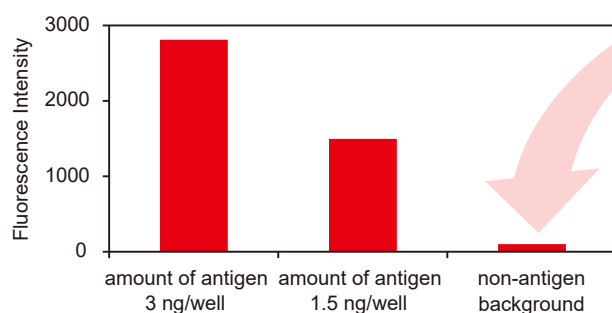
### Applicable to High-sensitive Detection of Biotinylated Antibodies and Various Probes

Secondary antibodies and streptavidin are labeled by europium fluorophore DTBTA-Eu<sup>3+</sup>. Biotinylated antibodies, proteins, nucleic acids and etc. can be sensitively detected by time-resolved fluorometry.

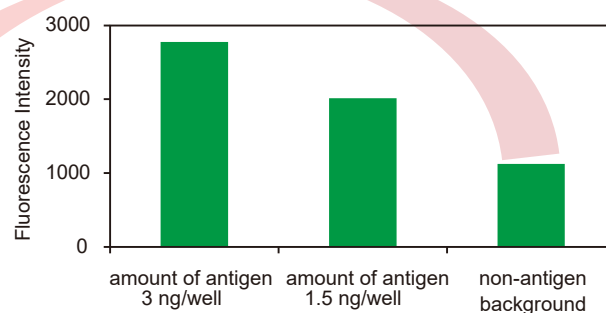


### Comparison of secondary antibody conjugated to DTBTA-Eu<sup>3+</sup> or FITC

**Time-resolved fluorometric measurement can remove background fluorescence!  
To obtain a high SN ratio**



Goat Anti-Mouse IgG DTBTA-Eu<sup>3+</sup> Conjugate [G0505]



Goat Anti-Mouse IgG FITC Conjugate [G0406]

<Assay condition>

Dilute the Mouse IgG to each concentration. Coat 96-well plates with diluted Mouse IgG. Block the plates with BSA/TBST. Incubate with Goat Anti-Mouse IgG Conjugates prepared from DTBTA-Eu<sup>3+</sup> or FITC at 2.5 µg/mL. After incubation, measure the fluorescence intensity on a plate reader. DTBTA-Eu<sup>3+</sup>; excitation=340 nm, emission=620 nm. Lag Time : 450 µsec  
FITC; excitation=485 nm, emission=520 nm.

## Related Products: Anti-DTBTA-Eu<sup>3+</sup> Antibodies

This rabbit antiserum was obtained by immunization of DTBTA-Eu<sup>3+</sup>-labeled KLH (keyhole limpet hemocyanin) as an immunogen and can be recognized with DTBTA-Eu<sup>3+</sup> as a hapten molecule. DTBTA-Eu<sup>3+</sup> is a fluorescent label for proteins and nucleic acids. With the combination of the antiserum, DTBTA-Eu<sup>3+</sup> is applicable as a tag molecule and DTBTA-Eu<sup>3+</sup>-labeled molecules can be immunologically detected with ELISA and Western-blotting via the tag. In addition, the tagged molecule can be monitored and quantified by the fluorescence from DTBTA-Eu<sup>3+</sup> ( $\lambda_{\text{ex. max}} = 335\text{nm}$ ,  $\lambda_{\text{em. max}} = 616\text{nm}$ ).

### Anti-DTBTA-Eu<sup>3+</sup> Rabbit Polyclonal Antibody [2.5mg/mL PBS(-)]

Immunogen: DTBTA-Eu<sup>3+</sup>-labeled KLH

Product Form: Protein A-purified Rabbit IgG

Preservative: 0.1 % Sodium Azide

0.5mL [A2239]

### Anti-DTBTA-Eu<sup>3+</sup> Rabbit Antiserum

Immunogen: DTBTA-Eu<sup>3+</sup>-labeled KLH

Product Form: Rabbit Serum

Preservative: 0.1 % Sodium Azide

0.5mL [A2181]

\*A2239 and A2181 are unavailable in the U.S. and China.

## Related Products: Secondary Antibodies

Goat Anti-Mouse IgG	1mg/vial [G0386]
Goat Anti-Mouse IgG Biotin Conjugate	0.1mg/vial [G0387]
Goat Anti-Mouse IgG FITC Conjugate	0.1mg/vial [G0406]
Goat Anti-Mouse IgG HRP Conjugate	0.1mg/vial [G0407]
Goat Anti-Mouse IgM	1mg/vial [G0408]
Goat Anti-Mouse IgM Biotin Conjugate	0.1mg/vial [G0432]
Goat Anti-Mouse IgM FITC Conjugate	0.1mg/vial [G0453]
Goat Anti-Mouse IgM HRP Conjugate	0.1mg/vial [G0417]
Goat Anti-Rabbit IgG	1mg/vial [G0388]
Goat Anti-Rabbit IgG Biotin Conjugate	0.1mg/vial [G0389]
Goat Anti-Rabbit IgG FITC Conjugate	0.1mg/vial [G0452]
Goat Anti-Rabbit IgG HRP Conjugate	0.1mg/vial [G0418]
Mouse Anti-Human IgG Fc	0.1mg/vial [M2977]
Mouse Anti-Human IgG Fc Biotin Conjugate	0.1mg/vial [M3053]
Sheep Anti-Chicken IgY	1mg/vial [S0998]
Sheep Anti-Chicken IgY Biotin Conjugate	0.1mg/vial [H1619]
Sheep Anti-Chicken IgY HRP Conjugat	0.1mg/vial [S0999]

\*Most of secondary antibodies are unavailable in the U.S. and China.

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## Related Products: Streptavidins

<b>Streptavidin from <i>Streptomyces avidinii</i></b>	1mg/vial [S0951]
<b>Streptavidin FITC Conjugate</b>	0.1mg/vial [S0966]
<b>Streptavidin R-PE Conjugate</b>	0.1mg/vial [T3885]
<b>Streptavidin HRP Conjugate</b>	0.1mg/vial [S0972]
<b>Streptavidin Maleimide Conjugate</b>	0.5mg/vial [T3531]

## Related Products: Biotinylated Primary Antibodies

<b>Anti-6xHis Monoclonal Antibody (6A12) Biotin Conjugate</b>	0.05mg/vial [A3010]
<b>Anti-GST Monoclonal Antibody Biotin Conjugate</b>	0.05mg/vial [A3226]
<b>Anti-Gb<sub>3</sub> Monoclonal Antibody Biotin Conjugate</b>	0.1mg/vial [A2822]
<b>Anti-αGal Polyclonal Antibody Biotin Conjugate</b>	0.05mg/vial [A3144]
<b>Anti-NeuGc Polyclonal Antibody Biotin Conjugate</b>	0.05mg/vial [A3294]
<b>Anti-Protein A Chicken Polyclonal Antibody Biotin Conjugate</b>	0.05mg/vial [A3045]
<b>Anti-Endo-M Polyclonal Antibody Biotin Conjugate</b>	0.1mg/vial [A2959]

\*Most of primary antibodies are unavailable in the U.S. and China.

## Related Products: Biotin Labeling Reagents

<b>Biotin-PEG<sub>3</sub>-Azide</b>	100mg [A2523]
<b>Biotin-azide</b>	100mg [A2524]
<b>Biotin Hydrazide</b>	25mg / 100mg [B2431]
<b>6-Biotinamidohexanoic Acid</b>	100mg [B2433]
<b>6-Biotinamidohexanoic Acid <i>N</i>-Succinimidyl Ester</b>	20mg / 100mg [S0490]
<b>D-Biotin <i>N</i>-Succinimidyl Ester</b>	100mg / 1g [S0491]
<b>Biotin-PEG<sub>2</sub>-NHS</b>	25mg / 100mg [S0955]
<b>Biotin-LC-LC-NHS</b>	25mg / 100mg [S0956]
<b>Maleimide-PEG<sub>2</sub>-Biotin</b>	50mg [B3174]

For further information please refer to our website at [www.TCIchemicals.com](http://www.TCIchemicals.com). ▶▶▶

TCI europium fluorescent



### Ordering and Customer Service

#### TCI AMERICA

Tel : 800-423-8616 / 503-283-1681  
Fax : 888-520-1075 / 503-283-1987  
E-mail : Sales-US@TCIchemicals.com

#### TCI EUROPE N.V.

Tel : +32 (0)3 735 07 00  
Fax : +32 (0)3 735 07 01  
E-mail : Sales-EU@TCIchemicals.com

#### TCI Deutschland GmbH

Tel : +49 (0)6196 64053-00  
Fax : +49 (0)6196 64053-01  
E-mail : Sales-DE@TCIchemicals.com

#### Tokyo Chemical Industry UK Ltd.

Tel : +44 (0)1865 78 45 60  
E-mail : Sales-UK@TCIchemicals.com

#### 梯希爱(上海)化成工业发展有限公司

Tel : 800-988-0390 / 021-67121386  
Fax : 021-6712-1385  
E-mail : Sales-CN@TCIchemicals.com

#### Tokyo Chemical Industry (India) Pvt. Ltd.

Tel : 1800 425 7889 / 044-2262 0909  
E-mail : Sales-IN@TCIchemicals.com

#### TOKYO CHEMICAL INDUSTRY CO., LTD.

Tel : +81 (0)3-5640-8878  
E-mail : globalbusiness@TCIchemicals.com

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