



**Mouse Anti-Human IgG (H+L) Secondary  
Antibody, Biotin Conjugated**

**Catalog number: BM2001**

This package insert must be read in its entirety before using this product.

For research use only. Not for use in diagnostic procedures.

## Mouse Anti-Human IgG (H+L) Secondary Antibody, Biotin Conjugated

**Catalog Number:** BM2001, **Storage:** At -20°C for one year from date of receipt. Avoid repeated freezing and thawing.

### Product Overview

Product Name	Mouse Anti-Human IgG (H+L) Secondary Antibody, Biotin Conjugate
Synonyms	Biotin-conjugated Mouse Anti-Human IgG; Mouse Anti-Human IgG Biotinylated Antibody; Biotinylated Mouse Anti-Human IgG Secondary Antibody; Mouse Anti-Human IgG Secondary Antibody, Biotin-labeled
Description	Mouse Anti-Human IgG (H+L) Secondary Antibody, Biotin Conjugate, for indirect sensitive immunodetection and/or quantification of low-abundance target proteins through ELISA or IHC by using reporter-labeled biotin-binding signal amplification systems.
Reagent Type	Biotin conjugated secondary antibody
Label	Biotin
Host	Mouse
Target Species	Human
Antibody Class	IgG
Clonality	Polyclonal
Immunogen	Whole molecule human IgG
Purification	Immunoaffinity chromatography
Specificity	Human IgG specific; no cross-reactivity with rabbit/goat/bovine IgG
Form Supplied	Liquid: concentrated buffered stock solution
Formulation	0.5 mg biotin-conjugated secondary antibody 0.01 M PBS (PH 7.4) 50% glycerol
Pack Size	0.5 ml
Concentration	1 mg/ml
Application	ELISA, IHC
Storage	At -20°C for one year from date of receipt. Avoid repeated freezing and thawing.
Shipping	Ships in room temperature. Can also ship with gel ice or dry ice but not necessary.
Precautions	FOR RESEARCH USE ONLY. NOT FOR DIAGNOSTIC OR CLINICAL USE

### Assay Information

Sample Type	Human primary-antibody-probed: SDS-PAGE separated-, membrane-immobilized-proteins from cell/tissue lysates, formalin-fixed paraffin-embedded (FFPE) tissue sections on slides
Assay Type	Immunoanalytical
Technique	Indirect immunodetection of target protein via reporter-labeled biotin-binding detection systems
Assay Purpose	Protein detection/quantification
Equipment Needed	WB/Dot blot/ELISA/IHC instrumentation; Reporter signal detectors: X-

ray film cassette; a charge-coupled device (CCD) imager;  
Spectrophotometer; fluorescent or electron microscope

## Main Advantages

Specificity	High signal-to-noise ratio
High Signal Amplification	Multiple secondary antibodies can bind to a single primary antibody; Multiple reporter molecules localize to a single biotin via avidin/streptavidin bridges
Fast	Fewer processing steps - no need to add a substrate; Less optimization required compared to enzymatic detection; Generates strong signals in a relatively short time span; Fluorescence can be observed directly
Quantifiable	Allows quantification of detected signal
Easy to Use	Supplied in a workable liquid format
Flexible	Biotin- (Strept)Avidin system can be coupled with various types of reporters (enzymes, fluorochromes, fluorophores, chromophores, etc.); One type of labeled secondary antibody can be used to recognize different types of primary antibodies of the target organism specific to a particular antigen
Compatible	Biotin does not interfere with catalysis or antibody binding

## Background

Most commonly, secondary antibodies are generated by immunizing the host animal with a pooled population of immunoglobulins from the target species. The host antiserum is then purified through immunoaffinity chromatography to remove all host serum proteins, except the specific antibody of interest. Purified secondary antibodies are further solid phase adsorbed with other species serum proteins to minimize cross-reactivity in tissue or cell preparations, and are then modified with antibody fragmentation, label conjugation, etc., to generate highly specific reagents. Secondary antibodies can be conjugated to a large number of labels, including enzymes, biotin, and fluorescent dyes/proteins. Here, the antibody provides the specificity to locate the protein of interest, and the label generates a detectable signal. The label of choice depends upon the experimental application.

Biotinylated antibodies are widely used in systems where signal amplification is desired. Often 15-20 biotin moieties are coupled to a single IgG secondary antibody. Biotin binds avidin, streptavidin, or neutravidin with a high degree of affinity and specificity. In immunoassays avidin/streptavidin-biotin binding is used as a bridge between antibodies and reporters like enzymes (HRP, AP), fluorophores, chromophores, etc. Both avidin and streptavidin are tetrameric proteins capable of binding 4 biotin groups to each molecule of avidin or streptavidin, thus amplifying the signal intensity and detection sensitivity by increasing the concentration of reporters at the antigenic site. Two main biotin-binding detection systems have been widely utilized: Avidin-Biotin Complex (ABC) and Labeled Streptavidin Biotin (LSAB) methods. In the ABC method free avidin (or streptavidin) is used as a bridge/link between the biotinylated antibody and 2 biotinylated reporter molecule, resulting in three reporter molecules coupled to the biotinylated antibody. The LSAB method employs a reporter-labeled streptavidin (avidin or neutravidin can alternatively be used) to detect the bound biotinylated-secondary antibody on the tissue section, blotting membrane or ELISA plate, improving the sensitivity of detection by 8-fold. The LSAB method is used when the avidin-biotin-enzyme complex in the ABC method becomes too large to penetrate the tissue.

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