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www.rockland.com
tech@rockland.com
+1 484.791.3823

Datasheet for 200-306-NF5

ModDetect® 2'-O-Methyl (2'OMe) Biotin Clone OME01

Overview

Description:	ModDetect® 2'-O-Methyl (2'OMe) Biotin Clone OME01 - 200-306-NF5
Item No.:	200-306-NF5
Size:	100 µg
Applications:	ELISA, IF
Host Species:	Mouse

Product Details

Background:	Current studies focusing on RNA therapeutics use as potential drugs antisense oligonucleotides (ASO), short interfering RNA (siRNA), and micro RNA (miRNA). The choice of oligonucleotide chosen for a specific treatment is dependent on many factors. However, all oligo therapeutics must be modified in some manner, as unmodified nucleotides are difficult to identify and are highly susceptible to degradation by endogenous nucleases. Modifications can be created within the sugar-phosphate backbone (first generation), the ribose sugar (second and third generation), or at multiple locations (third generation). Antibodies to modified oligonucleotides are useful for basic immunoassays including, ELISA, IHC, and IF. In addition, several types of toxicology assays (immunogenicity assays), such as antibody-drug assays (ADA) or other pharmacokinetic (PK) and pharmacodynamic (PD) studies require oligonucleotide antibodies as analytical tools for general research and preclinical trial experiments. Antibodies to an oligonucleotide therapeutic allow researchers to assess cellular uptake, tissue distribution, and can serve as a positive control for immunogenicity studies.
Synonyms:	2'-O-Methyl, 2'OMe, ASO, anti-sense oligonucleotide, siRNA, RNA therapeutic, gapmer, aptamer, Biotin Conjugated Anti-2'-O-Methyl (2'OMe), 2'-O-Methyl BAC
Host Species:	Mouse
Conjugate:	Biotin
Clonality:	Monoclonal
Clone ID:	OME01
Format:	IgG1

Target Details

Immunogen Type:	Other
Immunogen:	ModDetect® 2'-O-Methyl (2'OMe) Clone OME01 was prepared from cell culture supernatant produced by repeated immunizations with a proprietary oligo sequence.
Purity/Specificity:	This Protein A purified ModDetect® 2'-O-Methyl (2'OMe) Clone OME01 is directed against 2'OMe modified ribose sugar. This product was Protein A purified from monospecific supernatant and conjugated to biotin.

Application Details

Tested Applications:	ELISA, IF
Application Note:	ModDetect® 2'-O-Methyl (2'OMe) Biotin Clone OME01 has been validated for use in ELISA and immunofluorescence. In antigen-down or immunometric ELISAs, the ModDetect® 2'-O-Methyl (2'OMe) Biotin Clone OME01 preferentially detects 2'OMe modified ribose sugar groups over native deoxyribose or ribose sugars. It is also likely to be functional in IF and IHC assays, however, its sensitivity, specificity, and conditions for optimal use in these assays has not yet been determined. All assays should be optimized by the user.
Assay Dilutions:	All assays should be optimized by the user. Recommended dilutions (if any) may be listed below.
ELISA:	User Optimized
IF:	1:1000

Formulation

Physical State:	Liquid (sterile filtered)
Concentration:	1 mg/mL by UV absorbance at 280 nm
Buffer:	0.02 M Potassium Phosphate, 0.15 M Sodium Chloride, pH 7.2
Preservative:	0.01% (w/v) Sodium Azide
Stabilizer:	10 mg/mL Bovine Serum Albumin (BSA) - Immunoglobulin and Protease free

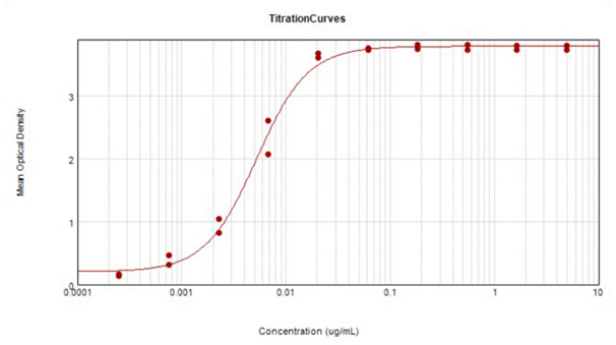
Shipping & Handling

Shipping Condition:	Dry Ice
Storage Condition:	Store vial at -20° C or below prior to opening. Store the vial at -20°C or below after dilution. Avoid cycles of freezing and thawing.
Expiration:	Expiration date is one (1) year from date of receipt.

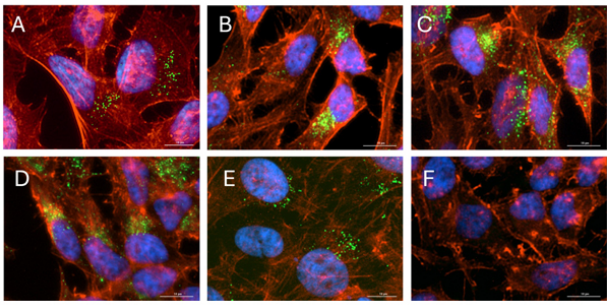
Images



Vial
ModDetect® 2'-O-Methyl (2'OMe) Biotin Clone OME01



ELISA
ELISA results of Rockland's ModDetect® 2'-O-Methyl (2'OMe) Biotin Clone OME01. Each well was coated in duplicate with 5 µg/mL sample of 2'-O-Methyl (2'OMe). The working dilution for the 2'-O-Methyl (2'OMe) Biotin Clone OME01 antibody is 1:191,000. The starting dilution of antibody was 5 µg/mL, and the X-axis represents the Log10 of a 3- fold dilution. The analysis was done following a 4-parameter curve fit model. The assay was performed using Streptavidin-HRP conjugated secondary antibody (p/n S000-03) at 1:10,000 and TMB substrate (p/n TMBE-1000).



Immunofluorescence Microscopy
Rockland Immunochemicals ModDetect® Biotinylated 2'OMe antibodies detect FDA-approved Lumasiran, an siRNA used to treat Primary Hyperoxaluria type 1 (PH1). Briefly, HeLa cells were transfected with Lumasiran, fixed with 4% formaldehyde, and permeabilized with 0.3% Triton-X 100. After being blocked with 5% Goat Serum (p/n D204-00-0050), cells were incubated overnight at 4 °C with a panel of monoclonal antibodies separately, each reactive to the O-Methyl (OMe) chemical modification used to stabilize the siRNA. Biotinylated primary antibodies were used at dilutions ranging from 1:100 to 1:1000 which were subsequently detected using Streptavidin DyLight 488 secondary antibody (p/n S000-41) for 1-hour at room temperature to identify the intracellular localization of siRNA (green). Cells were then counterstained with Phalloidin for actin to visualize the cytoskeleton (red) and Hoechst for nuclei (blue). Panel images show individual clones as follows (A) OME01 (p/n 200-306-NF5), (B) OME02 (p/n 200-306-NF6), (C) OME03 (p/n 200-306-NF7), (D) OME04 (p/n 200-306-NF8), (E) OME05 (p/n 200-306-NF9). No staining is observed for siRNA in a negative control (panel F) where HeLa cells were similarly treated with antibodies but not transfected with siRNA. Only clone OME01 shows detection of endogenous O-methylation under certain conditions of staining.

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