

# BIOSCOT® Blood Typing Monoclonal Reagents



## Merck Millipore, your partner for monoclonal blood typing diagnostics

For over 25 years Merck Millipore has been leading the development of monoclonal antibodies for the blood typing market. Merck Millipore offers the largest stable of human IgM monoclonal antibodies available today and continues to add to its portfolio. Merck Millipore's BIOSCOT® brand is globally synonymous with quality. Our ISO certified and FDA licensed manufacturing facilities enable us to stay at the forefront of this industry.



# BIOSCOT® Blood Typing Finished Reagents

Merck Millipore's blood typing reagents are made from human or murine monoclonal antibodies and are formulated in low protein diluents. These monoclonal reagents offer many advantages over polyclonal-based products.

## These advantages include:

- Highly specific—no risk of contaminating antibodies
- Lot-to-lot consistency
- Low biohazard risk
- IgM antibodies allow direct agglutination, react without the need for an indirect antiglobulin test and can be used to type cells with a positive direct antiglobulin test.

Merck Millipore offers a large portfolio of finished reagents compliant with the requirements of the European Directive 98/79/EC. These reagents are offered in a wide range of commercial options, including supply of finished reagent bulk, BIOSCOT®-labeled vials carrying the CE mark and unlabeled vials. Merck Millipore has many years experience in aiding customers in the registration of products in other countries, so whether your product is Merck Millipore labeled or in your own trade dress, Merck Millipore can assist you with product and batch registration and/or CE marking when applicable. BIOSCOT®-labeled reagents are not available to customers in the US or Canada.

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## BIOSCOT® ABO Reagents

### Anti-A (clone BIRMA-1) TL

This reagent reacts avidly with A<sub>1</sub>, A<sub>2</sub>, A<sub>1</sub>B and A<sub>2</sub>B red cells. It will directly agglutinate most examples of A<sub>x</sub>. It gives classic mixed field reactions with A<sub>3</sub> and A<sub>3</sub>B cells.

### Anti-B (clone LB-2) TN

This reagent reacts avidly with B and AB red cells. The reagent directly agglutinates examples of B<sub>x</sub> but does not agglutinate A<sub>1</sub> red cells with the 'acquired B antigen'.

### Anti-A,B (clones ES-15/ES-4) TM

This reagent allows for independent confirmation of ABO grouping as it is made from antibodies other than those used to make BIOSCOT® Anti-A and Anti-B reagents. The reagent is of particular value in typing blood samples from neonates and geriatrics where the antigens may be weakly expressed and reverse (serum) ABO grouping is not possible. The antibody from ES-15 is particularly effective in detecting the weakest forms of A.

## BIOSCOT® Anti-D Reagents

### Anti-D IgM (clone RUM-1) GG

This reagent is particularly suitable for grouping patients. It is very avid and will directly agglutinate normal, D weak and most D partial types. It does not agglutinate D category VI red cells.

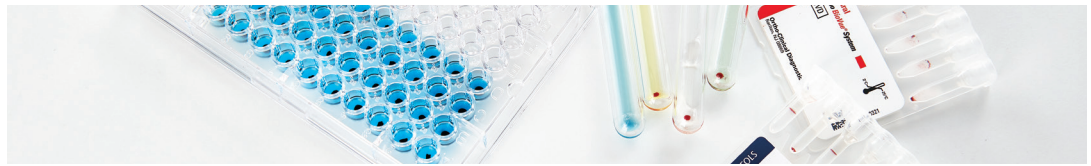
### Anti-D IgM/IgG Blend (clones TH-28 + MS-26) BM

This reagent is particularly suitable for grouping donors or neonates where the detection of D category VI is

desirable. This reagent directly agglutinates red cells with normal D expression and most examples of weak D and partial D but not D<sup>VI</sup>. When used by the indirect antiglobulin method or by many automated methods, the IgG component will agglutinate D<sup>VI</sup> red cells.

### Anti-D IgM (Clone MS-201) TP

The antibody from MS-201 has an identical specificity to RUM-1.



#### RECOMMENDED METHODS

Product	Ig Type	Clone	Tube	Slide	Microplate	Gel	Column	Volume	Catalogue No.
Anti-A	Murine IgM	BIRMA-1	●	●	●			1 L Bulk	TL-1L-BK
								10 L Bulk	TL-10L-BK
								50 L Bulk	TL-50L-BK
								10 x 10 mL Labeled	TL-10X10ML-B
								10 x 10 mL Unlabeled	TL-10X10ML-U
Anti-B	Murine IgM	LB-2	●	●	●			1 L Bulk	TN-1L-BK
								10 L Bulk	TN-10L-BK
								50 L Bulk	TN-50L-BK
								10 x 10 mL Labeled	TN-10X10ML-B
								10 x 10 mL Unlabeled	TN-10X10ML-U
Anti-A,B	Murine IgM	ES-15/ES-4	●	●	●			1 L Bulk	TM-1L-BK
								10 L Bulk	TM-10L-BK
								10 x 10 mL Labeled	TM-10X10ML-B
								10 x 10 mL Unlabeled	TM-10X10ML-U
								Anti-D IgM	Human IgM
10 L Bulk	GG-10L-BK								
50 L Bulk	GG-50L-BK								
10 x 10 mL Labeled	GG-10X10ML-B								
10 x 10 mL Unlabeled	GG-10X10ML-U								
Anti-D IgM/ IgG Blend	Human IgM + Human IgG	TH-28/ MS-26	●	●	●	●	●	1 L Bulk	BM-1L-BK
								10 L Bulk	BM-10L-BK
								50 L Bulk	BM-50L-BK
								10 x 10 mL Labeled	BM-10X10ML-B
								10 x 10 mL Unlabeled	BM-10X10ML-U
Anti-D	Human IgM	MS-201	●	●	●	●	●	1 L Bulk	TP-1L-BK
								10 L Bulk	TP-10L-BK
								10 x 10 mL Labeled	TP-10X10ML-B
								10 x 10 mL Unlabeled	TP-10X10ML-U

# CORE ABO and D Reagents

## Bulk Reagent + Diluent Packs

In response to demands from price-sensitive markets, Merck Millipore offers an alternative to its premium range of A, B and D reagents. The CORE packs are comprised of finished

reagent bulk plus corresponding bulk diluent enabling a 1 to 1 dilution of the premium reagents. Bulk packs are supplied in 50 L production bags with transfer ports.



### RECOMMENDED METHODS

Product	Clone	Tube	Slide	Microplate	Gel	Column	Components	Catalogue No.
CORE Anti-A Bulk Reagent + Diluent Pack	BIRMA-1	•	•	•			50 L TL Anti-A Reagent 50 L TC ABO Reagent Diluent	TL-PACK
CORE Anti-B Bulk Reagent + Diluent Pack	LB-2	•	•	•			50 L TN Anti-B Reagent 50 L TC ABO Reagent Diluent	TN- PACK
CORE Anti-D IgM Bulk Reagent + Diluent Pack	RUM-1	•	•	•	•	•	50 L GG Anti-D IgM Reagent 50 L TT Monoclonal Control	GG-PACK
CORE Anti-D IgM/IgG Blend Bulk Reagent + Diluent Pack	TH-28/ MS-26	•	•	•	•	•	50 L BM Anti-D IgM/IgG Blend Reagent 50 L BY Rh Reagent Diluent 3 L KK IgG Anti-D MS-26	BM-PACK

## Diluents

The following diluents may be used to dilute bulk ABO or D finished reagents to provide product for price sensitive markets. Final formulations and registrations are at the discretion of the purchaser.

### ABO Reagent Diluent

TC

This diluent may be used to dilute bulk TL, TN and TM reagents.

### Rh Reagent Diluent

BY

This diluent shares the same chemical formulation as BM.

### Monoclonal Control

TT

This product may be used to dilute bulk finished reagent GG.

Product	Volume	Catalogue No.
ABO Reagent Diluent	1 L Bulk	TC-1L-BK
	10 L Bulk	TC-10L-BK
	50 L Bulk	TC-50L-BK
Monoclonal Control	1 L Bulk	TT-1L-BK
	10 L Bulk	TT-10L-BK
	50 L Bulk	TT-50L-BK
Rh Reagent Diluent	1 L Bulk	BY-1L-BK
	10 L Bulk	BY-10L-BK
	50 L Bulk	BY-50L-BK



# BIOSCOT® Rh-Hr Reagents

## Anti-C (clone MS-24) BN

This reagent directly agglutinates red cells with normal C antigen expression as well as phenotypes containing C<sup>w</sup> and C<sup>x</sup>. The weakest reactions usually reported are with R<sub>2</sub>R<sub>2</sub> phenotypes.

## Anti-C (clone MS-273) TW

The reactivity of TW matches that of BN with subtle specificity differences.

## Anti-c (clone MS-33) TK

TK reacts strongly with all red cells with normal expression of the c antigen. Examples of partial c are very rare and Merck Millipore has only been able to source one of these. This reagent directly agglutinates red cells from that sample.

## Anti-c (clone MS-35) TV

The reactivity of TV is matched with that of TK. No discrepant findings have been reported from testing samples with the TK and TV reagents.

## Anti-E (clones MS-80/MS-258) TA

TA directly agglutinates red cells with normal E antigen expression. There are significant numbers of weak and variant expressions of E. These vary with ethnic types. This reagent detects E<sup>w</sup> red cells—found in European populations.

## Anti-E (clones MS-12/MS-260) GI

This reagent has the same reactivity as TA and also agglutinates E<sup>w</sup> red cells.

## Anti-e (clones MS-16/21/63) TU

The TU blended reagent gives excellent performance in agglutinating red cells with normal and variant expression of the e antigen. The e antigen shows more variation in expression than any other Rh antigen except D. These variants are particularly common in black populations. From all the test data we have acquired it is only by blending antibodies that a finished reagent can be made which is suitable for detecting e-variants.

## Anti-e (clones MS-62/MS-69) GK

This reagent has a broad specificity. It may not detect as many variants as TU, however we have had a report of a new e-variant detected by GK and not by TU.

## Anti-CDE (clones MS-24/201/80/26) BW

This blended reagent has an excellent record as the replacement for polyclonal anti-CDE. The IgG anti-D component will detect D category VI cells by the indirect antiglobulin method.

## Anti-C<sup>w</sup> (clone MS-110) TX

This reagent directly agglutinates C<sup>w</sup> (RH8) red cells.

## Monoclonal Control TT

Merck Millipore finished reagents have low protein formulations and in routine usage parallel testing with a monoclonal control is not required. When typing samples from patients known to be DAT positive or with protein abnormalities, a monoclonal control reagent is advisable. Parallel testing with TT, Monoclonal Control reagent will confirm the validity of the test result.





#### RECOMMENDED METHODS

Product	Ig Type	Clone	Tube	Slide	Microplate	Gel	Column	Volume	Catalogue No.
Anti-C	Human IgM	MS-24	•	•	•	•	•	1 L Bulk 10 L Bulk 5 mL Labeled 10 x 5 mL Labeled 10 x 5 mL Unlabeled	BN-1L-BK BN-10L-BK BN-5ML-B BN-10X5ML-B BN-10X5ML-U
Anti-C	Human IgM	MS-273	•	•	•	•	•	1 L Bulk 10 L Bulk 5 mL Labeled 10 x 5 mL Labeled 10 x 5 mL Unlabeled	TW-1L-BK TW-10L-BK TW-5ML-B TW-10X5ML-B TW-10X5ML-U
Anti-c	Human IgM	MS-33	•	•	•	•	•	1 L Bulk 10 L Bulk 5 mL Labeled 10 x 5 mL Labeled 10 x 5 mL Unlabeled	TK-1L-BK TK-10L-BK TK-5ML-B TK-10X5ML-B TK-10X5ML-U
Anti-c	Human IgM	MS-35	•	•	•	•	•	1 L Bulk 10 L Bulk 5 mL Labeled 10 x 5 mL Labeled 10 x 5 mL Unlabeled	TV-1L-BK TV-10L-BK TV-5ML-B TV-10X5ML-B TV-10X5ML-U
Anti-E	Human IgM	MS-80 MS-258	•	•	•	•	•	1 L Bulk 10 L Bulk 5 mL Labeled 10 x 5 mL Labeled 10 x 5 mL Unlabeled	TA-1L-BK TA-10L-BK TA-5ML-B TA-10X5ML-B TA-10X5ML-U
Anti-E	Human IgM	MS-12 MS-260	•	•	•	•	•	1 L Bulk 10 L Bulk 5 mL Labeled 10 x 5 mL Labeled 10 x 5 mL Unlabeled	GI-1L-BK GI-10L-BK GI-5ML-B GI-10X5ML-B GI-10X5ML-U
Anti-e	Human IgM	MS-16 MS-21 MS-63	•	•	•	•	•	1 L Bulk 10 L Bulk 5 mL Labeled 10 x 5 mL Labeled 10 x 5 mL Unlabeled	TU-1L-BK TU-10L-BK TU-5ML-B TU-10X5ML-B TU-10X5ML-U
Anti-e	Human IgM	MS-62 MS-69	•	•	•	•	•	1 L Bulk 10 L Bulk 5 mL Labeled 10 x 5 mL Labeled 10 x 5 mL Unlabeled	GK-1L-BK GK-10L-BK GK-5ML-B GK-10X5ML-B GK-10X5ML-U
Anti-CDE	Human IgM/IgG Blend	MS-24 MS-201 MS-80 MS-26	•	•	•	•	•	1L Bulk 10L Bulk 5 mL Labeled 10 x 5 mL Labeled 10 x 5 mL Unlabeled	BW-1L-BK BW-10L-BK BW-5ML-B BW-10X5ML-B BW-10X5ML-U
Anti-C <sup>w</sup>	Human IgM	MS-110	•	•	•	•	•	1 L Bulk 2 mL Labeled 10 x 2 mL Labeled 10 x 2 mL Unlabeled	TX-1L-BK TX-2ML-B TX-10X2ML-B TX-10X2ML-U
Monoclonal Control			•	•	•	•	•	1 L Bulk 10 L Bulk 5 mL Labeled 10 x 5 mL Labeled 10 x 5 mL Unlabeled	TT-1L-BK TT-10L-BK TT-5ML-B TT-10X5ML-B TT-10X5ML-U

# BIOSCOT® Rare Specificity Reagents

<b>Anti-K (clone MS-56)</b>	<b>TR</b>	<b>Anti-Jkb (clone MS-8)</b>	<b>BE</b>
This reagent is very well established for the reliable detection of the K antigen. It has been reported as detecting a K variant (personal correspondence from the International Blood Group Reference Laboratory).		BE has matched reaction characteristics to BI and offers the same advantages over polyclonal Anti-Jk <sup>b</sup> reagents.	
<b>Anti-K (clone AEK4)</b>	<b>BK</b>	<b>Anti-M (clone LM110/140)</b>	<b>NE</b>
This reagent shows comparable reactivity to TR.		This reagent is formulated to pH 8.4 which ensures its specificity for the M antigen. It is recommended for use by the tube test with a short 5 minute incubation.	
<b>Anti-k (clone P3A1180L67)</b>	<b>NZ</b>	<b>Anti-N (clone B03)</b>	<b>NA</b>
This Anti-k is a human monoclonal IgG reagent for use in indirect antiglobulin techniques. The NZ reagent reacts well with all normal expressions of the k antigen, including cells of the K+, k+, Kp(a+) phenotype.		This Anti-N gives good stable reactions with N positive red cells using an immediate spin tube test method.	
<b>Anti-Fy<sup>a</sup> (clone P3TIM)</b>	<b>NW</b>	<b>Anti-S (clone MS-94)</b>	<b>TJ</b>
NW is a human monoclonal IgG reagent which is used by the indirect antiglobulin method. In comparison testing against polyclonal reagents this human monoclonal IgG antibody demonstrated stronger reactivity against the majority of cells.		This is a particularly potent IgM reagent which directly agglutinates red cells with the S antigen in tube tests without the need for incubation.	
<b>Anti-Fy<sup>b</sup> ( clone SpA264LBg1 )</b>	<b>NV</b>	<b>Anti-s (clone P3BER)</b>	<b>TB</b>
This unique monoclonal IgM antibody shows strong reactivity and is a excellent replacement of current polyclonal reagents.		This reagent has matched reaction characteristics to TJ.	
<b>Anti-Jk<sup>a</sup> (clone MS-15)</b>	<b>BI</b>	<b>Anti-P1 (clone P3NIL100)</b>	<b>ND</b>
This IgM reagent will directly agglutinate cells possessing the Jk <sup>a</sup> antigen. Unlike polyclonal reagents BI can be used to type red cells that are coated with IgG (DAT+).		ND is a human IgM reagent which directly reacts with P1 red cells. This reagent can be used in immediate spin tube tests.	
		<b>Anti-Le<sup>a</sup> (clone GA2)</b>	<b>NB</b>
		This quick-reacting Anti-Le <sup>a</sup> is formulated from murine IgA antibodies.	
		<b>Anti-Le<sup>b</sup> (clone P3F234MD4)</b>	<b>NY</b>
		NY is a high titre, human monoclonal IgA reagent. It strongly agglutinates Le(a-b+) red cells of all ABO types. This reagent requires only a short 5 minute incubation.	





RECOMMENDED METHODS

Product	Ig Type	Clone	Tube	Slide	Microplate	Gel	Column	Volume	Catalogue No.
Anti-K	Human IgM	MS-56	•	•	•	•	•	1 L Bulk	TR-1L-BK
								10 L Bulk	TR-10L-BK
								5 mL Labeled	TR-5ML-B
								10 x 5 mL Labeled	TR-10X5ML-B
								10 x 5 mL Unlabeled	TR-10X5ML-U
Anti-K	Human IgM	AEK4	•	•	•	•	•	1 L Bulk	BK-1L-BK
								10 L Bulk	BK-10L-BK
								5 mL Labeled	BK-5ML-B
								10 x 5 mL Labeled	BK-10X5ML-B
								10 x 5 mL Unlabeled	BK-10X5ML-U
Anti-k	Human IgG	P3A1180L67	• IAT	•	•	•	•	1 L Bulk	NZ-1L-BK
								2 mL Labeled	NZ-2ML-B
								10 x 2 mL Labeled	NZ-10X2ML-B
								10 x 2 mL Unlabeled	NZ-10X2ML-U
Anti-Fy <sup>a</sup>	Human IgG	P3TIM	• IAT					1 L Bulk	NW-1L-BK
								5 mL Labeled	NW-5ML-B
								10 x 5 mL Labeled	NW-10X5ML-B
								10 x 5 mL Unlabeled	NW-10X5ML-U
Anti-Fy <sup>b</sup>	Human IgM	SpA264LBg1	•					2 mL Labeled	NV-2ML-B
								10 x 2 mL Labeled	NV-10X2ML-B
								10 x 2 mL Unlabeled	NV-10X2ML-U
Anti-Jk <sup>a</sup>	Human IgM	MS-15	•					1 L Bulk	BI-1L-BK
								2 mL Labeled	BI-2ML-B
								10 x 2 mL Labeled	BI-10X2ML-B
								10 x 2 mL Unlabeled	BI-10X2ML-U
Anti-Jk <sup>b</sup>	Human IgM	MS-8	•					1 L Bulk	BE-1L-BK
								2 mL Labeled	BE-2ML-B
								10 x 2 mL Labeled	BE-10X2ML-B
								10 x 2 mL Unlabeled	BE-10X2ML-U
Anti-M	Murine IgG	LM110/140	•					1 L Bulk	NE-1L-BK
								2 mL Labeled	NE-2ML-B
								10 x 2 mL Labeled	NE-10X2ML-B
								10 x 2 mL Unlabeled	NE-10X2ML-U
Anti-N	Murine IgG	B03	•					1 L Bulk	NA-1L-BK
								2 mL Labeled	NA-2ML-B
								10 x 2 mL Labeled	NA-10X2ML-B
								10 x 2 mL Unlabeled	NA-10X2ML-U
Anti-S	Human IgM	MS-94	•	•	•			1 L Bulk	TJ-1L-BK
								2 mL Labeled	TJ-2ML-B
								10 x 2 mL Labeled	TJ-10X2ML-B
								10 x 2 mL Unlabeled	TJ-10X2ML-U
Anti-s	Human IgM	P3BER	•					1 L Bulk	TB-1L-BK
								2 mL Labeled	TB-2ML-B
								10 x 2 mL Labeled	TB-10X2ML-B
								10 x 2 mL Unlabeled	TB-10X2ML-U
Anti-P1	Human IgM	P3NIL100	•					1 L Bulk	ND-1L-BK
								2 mL Labeled	ND-2ML-B
								10 x 2 mL Labeled	ND-10X2ML-B
								10 x 2 mL Unlabeled	ND-10X2ML-U
Anti-Le <sup>a</sup>	Murine IgA	GA2	•					1 L Bulk	NB-1L-BK
								2 mL Labeled	NB-2ML-B
								10 x 2 mL Labeled	NB-10X2ML-B
								10 x 2 mL Unlabeled	NB-10X2ML-U
Anti-Le <sup>b</sup>	Human IgA	P3F234MD4	•					1 L Bulk	NY-1L-BK
								2 mL Labeled	NY-2ML-B
								10 x 2 mL Labeled	NY-10X2ML-B
								10 x 2 mL Unlabeled	NY-10X2ML-U

# BIOSCOT® Anti-Human Globulin (AHG) Reagents

Anti-Human Globulin polyclonal  
(clone BRIC-8) TS

This reagent is manufactured from a blend of rabbit anti-human IgG and monoclonal anti-human C3d. The product is suitable for DAT and IAT and is dyed green.

**RECOMMENDED METHODS**

Product	Ig Type	Clone	DAT	IAT	Volume	Catalogue No.
Anti-Human Globulin Polyclonal	Rabbit IgG Murine IgM	BRIC-8	•	•	1 L Bulk	TS-1L-BK
					10 L Bulk	TS-10L-BK
					10 mL Labeled	TS-10ML-B
					10 x 10 mL Labeled	TS-10X10ML-B
					10 x 10 mL Unlabeled	TS-10X10ML-U



## Consult a Merck Millipore Expert



Quality. Consistency. Reliability.

To learn more about our blood typing reagents, the BIOSCOT® portfolio, or to discuss your own trade dress product needs, contact us at [OEM.Diagnostics@Merckgroup.com](mailto:OEM.Diagnostics@Merckgroup.com) or call +31 20 721 8902.

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