

**MERCK**

# BIOSCOT® Blood Typing Monoclonal Reagents



The Life Science business  
of Merck operates as  
MilliporeSigma in the  
U.S. and Canada.

**Millipore®**

Preparation, Separation,  
Filtration & Monitoring Products



# We are your partner for monoclonal blood typing diagnostics

Merck is one of the leading providers of monoclonal antibodies for the blood typing market. We offer the largest portfolio of human IgM monoclonal antibodies available today. The BIOSCOT® name is globally synonymous with quality. Our ISO-certified and FDA-licensed manufacturing facilities enable us to stay at the forefront of this industry.

## Product Directory

### BIOSCOT® ABO Reagents

Anti-A	6
Anti-B	6
Anti-A,B	6
CORE Bulk Reagent + Diluent	8

### BIOSCOT® Anti-D Reagents

Anti-D IgM	6
Anti-D IgM/IgG Blend	6
CORE Bulk Reagent + Diluent	8

### CORE ABO and D Reagents

Bulk Reagent + Diluent	8
------------------------	---

### Diluents

ABO Reagent Diluent	9
Monoclonal Control	9
Rh Reagent Diluent	9

### BIOSCOT® Rh-Hr Reagents

Anti-C	10
Anti-c	10
Anti-E	10
Anti-e	10
Anti-CDE	10
Anti-C <sup>w</sup>	10
Monoclonal Control	10

### BIOSCOT® Rare Specificity Reagents

Anti-K	12
Anti-k	12
Anti-Fy <sup>a</sup>	12
Anti-Jk <sup>a</sup>	12
Anti-Jk <sup>b</sup>	12
Anti-M	12
Anti-N	12
Anti-S	12
Anti-s	12
Anti-P1	12
Anti-Le <sup>a</sup>	12
Anti-Le <sup>b</sup>	12

### BIOSCOT® Anti-Human Globulin Reagents

Polyspecific, Anti-IgG + C3d	14
------------------------------	----

### Blood Typing Reagents for Research Use

Anti-A	15
Anti-B	15
Anti-A,B	15
Anti-D	15
Anti-C	15
Anti-c	15
Anti-E	15
Anti-e	15
Anti-C <sup>w</sup>	15
Monoclonal Control	15
Anti-K	15
Anti-k	15
Anti-Fy <sup>a</sup>	15
Anti-Jk <sup>a</sup>	15
Anti-Jk <sup>b</sup>	15
Anti-M	15
Anti-N	15
Anti-S	15
Anti-s	15
Anti-P1	15
Anti-Le <sup>a</sup>	15
Anti-Le <sup>b</sup>	15
Anti-Human Globulin	15



# BIOSCOT® Blood Typing Finished Reagents

Millipore® blood typing reagents are made from human or murine monoclonal antibodies and are formulated in low protein diluents.

We offer 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 upon request. We have many years of experience in aiding customers in the registration of products in other countries, so whether your product is Millipore® labeled or in your own trade dress, we can support you with your product registration.

BIOSCOT® labelled reagents are not available to customers in all geographies. Bulk reagent, reagent for research and unlabeled vial formats share the same reactivity and attributes as our BIOSCOT® CE marked reagents. Bulk reagent & unlabeled vial formats are for further manufacturing or non-diagnostic use. Reagents labelled for research use are not intended for use in clinical diagnostic applications.



## 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.”

## 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-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.

### 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 Vials	TL-10X10ML-B
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 Vials	TN-10X10ML-B
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 Vials	TM-10X10ML-B
Anti-D IgM	Human IgM	RUM-1	●	●	●	●	●	1 L Bulk	GG-1L-BK
								10 L Bulk	GG-10L-BK
								50 L Bulk	GG-50L-BK
								10 x 10 mL Vials	GG-10X10ML-B
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 Vials	BM-10X10ML-B
Anti-D	Human IgM	MS-201	●	●	●	●	●	1 L Bulk	TP-1L-BK
								10 L Bulk	TP-10L-BK
								10 x 10 mL Vials	TP-10X10ML-B

# CORE ABO and D Reagents

## Bulk Reagent + Diluent Packs

In response to demands from price-sensitive markets, we offer 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.

Product	Clone	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.

## Monoclonal Control – TT

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

## Rh Reagent Diluent – BY

This diluent shares the same chemical formulation as BM.

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>z</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 we have only been able to source one of these. This reagent directly agglutinated 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

The Millipore® portfolio of 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	<b>BN-1L-BK</b>
								5 mL Vial	<b>BN-5ML-B</b>
								10 x 5 mL Vials	<b>BN-10X5ML-B</b>
Anti-C	Human IgM	MS-273	●	●	●	●	●	1 L Bulk	<b>TW-1L-BK</b>
								5 mL Vial	<b>TW-5ML-B</b>
								10 x 5 mL Vials	<b>TW-10X5ML-B</b>
Anti-c	Human IgM	MS-33	●	●	●	●	●	1 L Bulk	<b>TK-1L-BK</b>
								5 mL Vial	<b>TK-5ML-B</b>
								10 x 5 mL Vials	<b>TK-10X5ML-B</b>
Anti-c	Human IgM	MS-35	●	●	●	●	●	1 L Bulk	<b>TV-1L-BK</b>
								5 mL Vial	<b>TV-5ML-B</b>
								10 x 5 mL Vials	<b>TV-10X5ML-B</b>
Anti-E	Human IgM	MS-80 MS-258	●	●	●	●	●	1 L Bulk	<b>TA-1L-BK</b>
								5 mL Vial	<b>TA-5ML-B</b>
								10 x 5 mL Vials	<b>TA-10X5ML-B</b>
Anti-E	Human IgM	MS-12 MS-260	●	●	●	●	●	1 L Bulk	<b>GI-1L-BK</b>
								5 mL Vial	<b>GI-5ML-B</b>
								10 x 5 mL Vials	<b>GI-10X5ML-B</b>
Anti-e	Human IgM	MS-16 MS-21 MS-63	●	●	●	●	●	1 L Bulk	<b>TU-1L-BK</b>
								5 mL Vial	<b>TU-5ML-B</b>
								10 x 5 mL Vials	<b>TU-10X5ML-B</b>
Anti-e	Human IgM	MS-62 MS-69	●	●	●	●	●	1 L Bulk	<b>GK-1L-BK</b>
								5 mL Vial	<b>GK-5ML-B</b>
								10 x 5 mL Vials	<b>GK-10X5ML-B</b>
Anti-CDE	Human IgM/IgG Blend	MS-24 MS-201 MS-80 MS-26	●	●	●	●	●	1 L Bulk	<b>BW-1L-BK</b>
								5 mL Vial	<b>BW-5ML-B</b>
								10 x 5 mL Vials	<b>BW-10X5ML-B</b>
Anti-C <sup>a</sup>	Human IgM	MS-110	●	●	●	●	●	1 L Bulk	<b>TX-1L-BK</b>
								2 mL Vial	<b>TX-2ML-B</b>
								10 x 2 mL Vials	<b>TX-10X2ML-B</b>
Monoclonal Control			●	●	●	●	●	1 L Bulk	<b>TT-1L-BK</b>
								10 L Bulk	<b>TT-10L-BK</b>
								5 mL Vial	<b>TT-5ML-B</b>
								10 x 5 mL Vials	<b>TT-10X5ML-B</b>

# BIOSCOT®

## Rare Specificity Reagents

### Anti-K (clone MS-56) – TR

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).

### Anti-K (clone AEK4) – BK

This reagent shows comparable reactivity to TR.

### Anti-k (clone P3A118OL67) – NZ

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.

### Anti-Fy<sup>a</sup> (clone P3TIM) – NW

NW is a human monoclonal IgG reagent that 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.

### Anti-Jk<sup>a</sup> (clone MS-15) – BI

This IgM reagent will directly agglutinate cells possessing the Jka antigen. BI can be used to type red cells that are coated with IgG (DAT+).

### Anti-Jk<sup>b</sup> (clone MS-8) – BE

BE will directly agglutinate Jk<sup>b</sup> positive cells, has matched reaction characteristics to BI and offers the same advantages in tests performed with DAT+ red cells.

### Anti-M (clone LM110/140) – NE

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 five-minute incubation.

### Anti-N (clone BO3) – NA

This Anti-N gives good stable reactions with N positive red cells, using an immediate spin tube test method.

### Anti-S (clone MS-94) – TJ

This is a particularly potent IgM reagent that directly agglutinates red cells with the S antigen in tube tests without the need for incubation.

### Anti-s (clone P3BER) – TB

This reagent has matched reaction characteristics to TJ.

### Anti-P1 (clone P3NIL100 – ND

ND is a human IgM reagent that directly reacts with P1 red cells. This reagent can be used in immediate spin tube tests.

### Anti-Le<sup>a</sup> (clone GA2) – NB

This quick-reacting Anti-Le<sup>a</sup> is formulated from murine IgA antibodies.

### Anti-Le<sup>b</sup> (clone P3F234MD4) – NY

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 five-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
								5 mL Vial	TR-5ML-B
								10 x 5 mL Vials	TR-10X5ML-B
Anti-K	Human IgM	AEK4	●	●	●	●	●	1 L Bulk	BK-1L-BK
								5 mL Vial	BK-5ML-B
								10 x 5 mL Vials	BK-10X5ML-B
Anti-k	Human IgG	P3A118OL67	● IAT			●	●	1 L Bulk	NZ-1L-BK
								2 mL Vial	NZ-2ML-B
								10 x 2 mL Vials	NZ-10X2ML-B
Anti-Fy <sup>a</sup>	Human IgG	P3TIM	● IAT			●	●	1 L Bulk	NW-1L-BK
								5 mL Vial	NW-5ML-B
								10 x 5 mL Vials	NW-10X5ML-B
Anti-Jk <sup>a</sup>	Human IgM	MS-15	●					1 L Bulk	BI-1L-BK
								2 mL Vial	BI-2ML-B
								10 x 2 mL Vials	BI-10X2ML-B
Anti-Jk <sup>b</sup>	Human IgM	MS-8	●					1 L Bulk	BE-1L-BK
								2 mL Vial	BE-2ML-B
								10 x 2 mL Vials	BE-10X2ML-B
Anti-M	Murine IgG	LM110/140	●					1 L Bulk	NE-1L-BK
								2 mL Vial	NE-2ML-B
								10 x 2 mL Vials	NE-10X2ML-B
Anti-N	Murine IgG	BO3	●					1 L Bulk	NA-1L-BK
								2 mL Vial	NA-2ML-B
								10 x 2 mL Vials	NA-10X2ML-B
Anti-S	Human IgM	MS-94	●	●	●			1 L Bulk	TJ-1L-BK
								2 mL Vial	TJ-2ML-B
								10 x 2 mL Vials	TJ-10X2ML-B
Anti-s	Human IgM	P3BER	●					1 L Bulk	TB-1L-BK
								2 mL Vial	TB-2ML-B
								10 x 2 mL Vial	TB-10X2ML-B
Anti-P1	Human IgM	P3NIL100	●					1 L Bulk	ND-1L-BK
								2 mL Vial	ND-2ML-B
								10 x 2 mL Vials	ND-10X2ML-B
Anti-Le <sup>a</sup>	Murine IgA	GA2	●					1 L Bulk	NB-1L-BK
								2 mL Vial	NB-2ML-B
								10 x 2 mL Vials	NB-10X2ML-B
Anti-Le <sup>b</sup>	Human IgA	P3F234MD4	●					1 L Bulk	NY-1L-BK
								2 mL Vial	NY-2ML-B
								10 x 2 mL Vial	NY-10X2ML-B



# BIOSCOT® Anti-Human Globulin (AHG) Reagents

## Anti-Human Globulin Polyspecific (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 Polyspecific	Rabbit IgG Murine IgM	BRIC-8	●	●	1 L Bulk	TS-1L-BK
					10 L Bulk	TS-10L-BK
					10 x 10 mL Vials	TS-10X10ML-B



# Blood Typing Reagents for Research Use

Millipore® Monoclonal Blood Typing Reagents for Research Use share the same reactivity and attributes as our BIOSCOT® CE marked reagents but are not intended for use in clinical diagnostic applications.

Product	Ig Type	Clone	Volume	Catalogue No.
Anti-A	Murine IgM	BIRMA-1	10 mL Vial	TL-10ML-RU
Anti-B	Murine IgM	LB-2	10 mL Vial	TN-10ML-RU
Anti-A,B	Murine IgM	ES-15/ES-4	10 mL Vial	TM-10ML-RU
Anti-D	Human IgM	RUM-1	10 mL Vial	GG-10ML-RU
Anti-D Blend	Human IgM /IgG	TH-28/MS-26	10 mL Vial	BM-10ML-RU
Anti-C	Human IgM	MS-24	5 mL Vial	BN-5ML-RU
Anti-C	Human IgM	MS-273	5 mL Vial	TW-5ML-RU
Anti-c	Human IgM	MS-33	5 mL Vial	TK-5ML-RU
Anti-c	Human IgM	MS-35	5 mL Vial	TV-5ML-RU
Anti-E	Human IgM	MS-80/MS-258	5 mL Vial	TA-5ML-RU
Anti-E	Human IgM	MS-12/MS-260	5 mL Vial	GI-5ML-RU
Anti-e	Human IgM	MS-16/MS-21/MS-63	5 mL Vial	TU-5ML-RU
Anti-e	Human IgM	MS-62/MS-69	5 mL Vial	GK-5ML-RU
Anti-C <sup>v</sup>	Human IgM	MS-110	2 mL Vial	TX-2ML-RU
Monoclonal Control			5 mL Vial	TT-5ML-RU
Anti-K	Human IgM	MS-56	5 mL Vial	TR-5ML-RU
Anti-K	Human IgM	AEK4	5 mL Vial	BK-5ML-RU
Anti-k	Human IgG	P3A1180L67	2 mL Vial	NZ-2ML-RU
Anti-Fy <sup>a</sup>	Human IgG	P3TIM	5 mL Vial	NW-5ML-RU
Anti-Jk <sup>a</sup>	Human IgM	MS-15	2 mL Vial	BI-2ML-RU
Anti-Jk <sup>b</sup>	Human IgM	MS-8	2 mL Vial	BE-2ML-RU
Anti-M	Murine IgG	LM-110/140	2 mL Vial	NE-2ML-RU
Anti-N	Murine IgG	BO3	2 mL Vial	NA-2ML-RU
Anti-S	Human IgM	MS-94	2 mL Vial	TJ-2ML-RU
Anti-s	Human IgM	P3BER	2 mL Vial	TB-2ML-RU
Anti-P1	Human IgM	P3NIL100	2 mL Vial	ND-2ML-RU
Anti-Le <sup>a</sup>	Murine IgA	GA2	2 mL Vial	NB-2ML-RU
Anti-Le <sup>b</sup>	Human IgA	P3F234MD4	2 mL Vial	NY-2ML-RU
Anti-Human Globulin	Rabbit IgG Murine IgM	BRIC-8	10 mL Vial	TS-10ML-RU

# Millipore®

Preparation, Separation,  
Filtration & Monitoring Products

Merck KGaA  
Frankfurter Strasse 250  
64293 Darmstadt, Germany

**MerckMillipore.com**

## Consult Our Experts

To learn more about our blood typing reagents, the BIOSCOT® portfolio, or to discuss the availability of these reagents in your country, contact us at [OEM.Diagnostics@merckgroup.com](mailto:OEM.Diagnostics@merckgroup.com) or [OEM\\_Diagnostics\\_Export@merckgroup.com](mailto:OEM_Diagnostics_Export@merckgroup.com)

Visit us online:  
[MerckMillipore.com/diagnostics](https://MerckMillipore.com/diagnostics)

© 2023 Merck KGaA, Darmstadt, Germany and/or its affiliates. All Rights Reserved. Merck, the vibrant M, Millipore and Sigma-Aldrich are trademarks of Merck KGaA, Darmstadt, Germany or its affiliates. All other trademarks are the property of their respective owners. Detailed information on trademarks is available via publicly accessible resources.

MK\_BR5877EN Ver. 4.0  
47343  
05/2023