TRANSFUSION MEDICINE

DG gel

One system
Many solutions

TYPING

GRIFOLS

DG Gel system

The DG Gel system is based on column agglutination technology (CAT) for patient and donor blood typing. It is the result of Grifols long history and extensive expertise in transfusion medicine and quality engineering.

The DG Gel system supports achieving safer transfusions and improved outcomes for patients.

Scalable solutions

- Meet different typing and throughput needs with a wide range of reagents and instruments
- Cards, reagents, and complementary solutions are formatted to be conveniently compatible across all instrument platforms

Flexibility

- Get more comprehensive profiles using the original 8-well gel card
- Customize your testing profiles with a wide range of reagent red blood cells and liquid antisera
- Optimize the use of your laboratory with compact and intelligently designed instruments

Intuitive operations

- Consistent and reliable results via a process-oriented system that uses the same technology across all platforms
- Easy to operate instruments and ready-to-use, universal reagents[1]
- High-quality results with users across the world and the high standards of quality recognition (CE mark and FDA approved)

Efficiently type patients and help identify the best donor match

1. Grifols universal reagents are compatible with all of the DG Gel system platforms (from manual to fully automated instruments).

DG Gel reagents

DG Gel reagents are universal![1] The DG Gel cards, reagent red blood cells (RRBC), antisera, and complementary solutions are compatible with all DG Gel system platforms. This compatibility enables any combination of instruments and makes it easy to upgrade laboratory instrumentation.

Compatibility chart

	INSTRUMENT		
REAGENT	FULLY-AUTOMATED	SEMI-AUTOMATED	MANUAL PROCESSING
DG Gel cards	✔	✔	✔
Reagent red blood cells 0.8%	✔	✔	✔
Antisera	✔	✔	✔
Quality controls	✔	✔	✔
Complementary reagents and solutions	✔	✔	✔

Comprehensive portfolio of reagents to fulfill any laboratory's requirement using DG Gel cards

DG Gel cards

DG Gel cards are the original 8-well gel card based on column agglutination technology for blood group typing and investigation of unexpected antibodies. The same cards can be used with any of our instruments.

The 8-well format card provides:

- Unique, exclusive profiles and complete determinations in a single card
- Control well in the cards
- The desired extended phenotype profile combining the DG Gel cards with liquid antisera
- Unique double-decker rack saving storage space

One card format, multiple profiles, same great performance

COMPLETE ABO/RH BLOOD GROUPING

DG Gel ABO/Rh — Ref. 210355

A	B	AB	D^{VI-}	CDE	Ctl.	N/A_1	N/B

TECHNIQUE Determination of the antigens of the ABO and Rh (D) systems and determination of the reverse ABO group.

TESTS/CARD 1

CLONES
Anti-A: Monoclonal anti-A (mixture of IgM antibodies of murine origin, clones 16243 G2 and 16247 E6)
Anti-B: Monoclonal anti-B (IgM antibodies of murine origin, clone 9621 A8)
Anti-AB: Monoclonal anti-AB (mixture of IgM antibodies of murine origin, clones 16245 F11 D8, 16247 E6 and 7821 D9)
Anti-D^{VI-}: Monoclonal anti-D (IgM antibodies of human origin, clone P3x61)
Anti-CDE: Monoclonal anti-CDE (mixture of IgM antibodies of human origin, clones P3x61, P3x25513 G8, P3x234)
Ctl.: Buffered solution without antibodies (control microtube)
N: Buffered solution without antibodies (reverse group test)

PRESENTATION 2 x 25 cards

DG Gel ABO/Rh (2D) — Ref. 210338

A	B	AB	D^{VI-}	D^{VI+}	Ctl.	N/A_1	N/B

TECHNIQUE Determination of the antigens of the ABO and Rh (D) systems and determination of the reverse ABO group.

TESTS/CARD 1

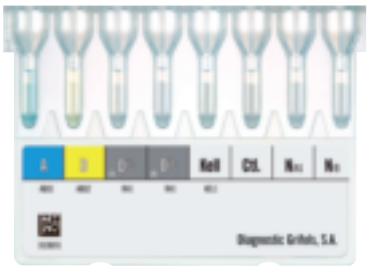
CLONES
Anti-A: Monoclonal anti-A (mixture of IgM antibodies of murine origin, clones 16243 G2 and 16247 E6)
Anti-B: Monoclonal anti-B (IgM antibodies of murine origin, clone 9621 A8)
Anti-AB: Monoclonal anti-AB (mixture of IgM antibodies of murine origin, clones 16245 F11 D8, 16247 E6 and 7821 D9)
Anti-D^{VI-}: Monoclonal anti-D (IgM antibodies of human origin, clone P3x61)
Anti-D^{VI+}: Monoclonal anti-D (mixture of IgG and IgM antibodies of human origin, clones P3x290, P3x35, P3x61 and P3x21223 B10). This anti-D monoclonal reagent detects weak D and partial variants of the D antigen, including the D^{VI} variant
Ctl.: Buffered solution without antibodies (control microtube)
N: Buffered solution without antibodies (reverse group test)

PRESENTATION 2 x 25 cards

DG Gel ABO/Rh (2D) + Kell

Ref. 210348

A	B	D^{VI-}	D^{VI-}	Kell	Ctl.	N_{A1}	N_{B}



TECHNIQUE Determination of the antigens of the ABO, Rh (D), Kell systems and determination of the reverse ABO group.

TESTS/CARD 1

CLONES
Anti-A: Monoclonal anti-A (IgM antibodies of murine origin, clone DAM-1)
Anti-B: Monoclonal anti-B (IgM antibodies of murine origin, clone 9621 A8)
Anti-D^{VI-}: Monoclonal anti-D (IgM antibodies of human origin, clone P3x61)
Anti-D^{VI-}: Monoclonal anti-D (IgM antibodies of human origin, clone MS-201)
Anti-Kell: Monoclonal anti-Kell (IgM antibodies of human origin, clone MS-56)
Ctl.: Buffered solution without antibodies (control microtube)
N: Buffered solution without antibodies (reverse group test)

PRESENTATION 2 x 25 cards

DG Gel ABO/Rh (CR)

Ref. 210378

A	B	D^{VI-}	D^{VI-}	Ctl.	N	N	N

TECHNIQUE Determination of the antigens of the ABO and Rh (D) systems and determination of the complete reverse ABO group.

TESTS/CARD 1

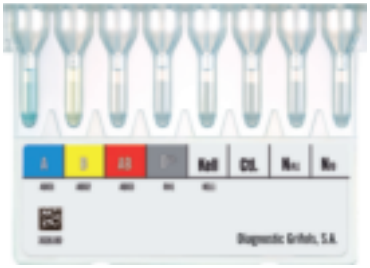
CLONES
Anti-A: Monoclonal anti-A (IgM antibodies of murine origin, clone DAM-1)
Anti-B: Monoclonal anti-B (IgM antibodies of murine origin, clone 9621 A8)
Anti-D^{VI-}: Monoclonal anti-D (IgM antibodies of human origin, clone P3x61)
Anti-D^{VI-}: Monoclonal anti-D (IgM antibodies of human origin, clone MS-201)
Ctl.: Buffered solution without antibodies (control microtube)
N: Buffered solution without antibodies (reverse group test)

PRESENTATION 2 x 25 cards

DG Gel ABO/Rh + Kell (RT)

Ref. 210352

A	B	AB	D^{VI-}	Kell	Ctl.	N_{A1}	N_{B}



TECHNIQUE Determination of the antigens of the ABO, Rh (D), Kell systems and determination of the reverse ABO group.

TESTS/CARD 1

CLONES
Anti-A: Monoclonal anti-A (IgM antibodies of murine origin, clone DAM-1)
Anti-B: Monoclonal anti-B (IgM antibodies of murine origin, clone 9621 A8)
Anti-AB: Monoclonal anti-AB (mixture of IgM antibodies of murine origin, clones ES-15, LA-2, LB-2)
Anti-D^{VI-}: Monoclonal anti-D (IgM antibodies of human origin, clone P3x61)
Anti-Kell: Monoclonal anti-Kell (IgM antibodies of human origin, clone MS-56)
Ctl.: Buffered solution without antibodies (control microtube)
N: Buffered solution without antibodies (reverse group test)

PRESENTATION 2 x 25 cards

DG Gel ABO-CDE

Ref. 210340

A	B	D^{VI-}	C	E	Ctl.	N_{A1}	N_{B}

TECHNIQUE Determination of the antigens of the ABO and Rh (D, C, E) systems and determination of the reverse ABO group.

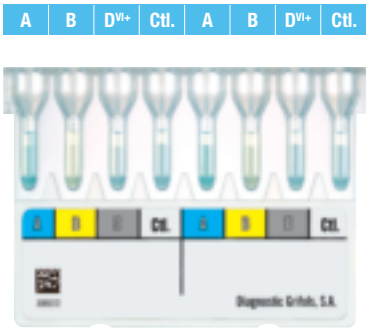
TESTS/CARD 1

CLONES
Anti-A: Monoclonal anti-A (mixture of IgM antibodies of murine origin, clones 16243 G2 and 16247 E6)
Anti-B: Monoclonal anti-B (IgM antibodies of murine origin, clone 9621 A8)
Anti-D^{VI-}: Monoclonal anti-D (IgM antibodies of human origin, clone P3x61)
Anti-C: Monoclonal anti-C (IgM antibodies of human origin, clone P3x25513 G8)
Anti-E: Monoclonal anti-E (IgM antibodies of human origin, clone 906)
Ctl.: Buffered solution without antibodies (control microtube)
N: Buffered solution without antibodies (reverse group test)

PRESENTATION 2 x 25 cards

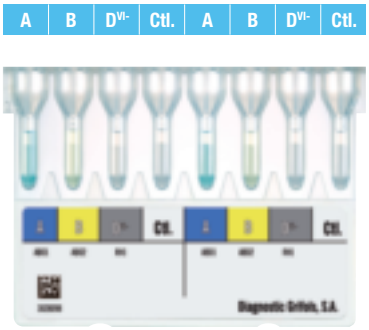
BLOOD GROUP CONFIRMATION

DG Gel Confirm — Ref. 210339



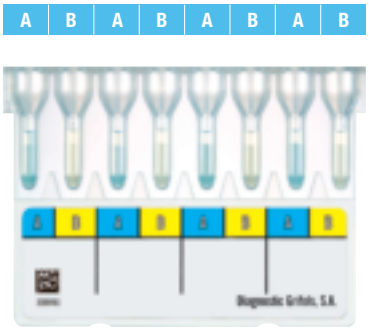
TECHNIQUE Confirmation of the blood groups of the ABO and Rh (D) systems.
TESTS/CARD 2
CLONES
Anti-A: Monoclonal anti-A (mixture of IgM antibodies of murine origin, clones 16243 G2 and 16247 E6)
Anti-B: Monoclonal anti-B (IgM antibodies of murine origin, clone 9621 A8)
Anti-D^{VI+}: Monoclonal anti-D (mixture of IgG and IgM antibodies of human origin, clones P3x290, P3x35, P3x61 and P3x21223 B10). This anti-D monoclonal reagent detects weak D and partial variants of the D antigen, including the D^{VI} variant
Ctl.: Buffered solution without antibodies (control microtube)
PRESENTATION 2 x 25 cards

DG Gel Confirm P — Ref. 210351



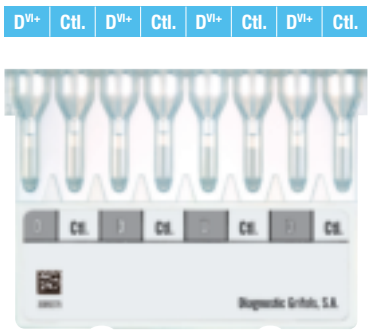
TECHNIQUE Confirmation of the blood groups of the ABO and Rh (D) systems.
TESTS/CARD 2
CLONES
Anti-A: Monoclonal anti-A (IgM antibodies of murine origin, clone Birma-1)
Anti-B: Monoclonal anti-B (IgM antibodies of murine origin, clone LB-2)
Anti-D^{VI+}: Monoclonal anti-D (IgM antibodies of human origin, clone MS-201)
Ctl.: Buffered solution without antibodies (control microtube)
PRESENTATION 2 x 25 cards

DG Gel AB (x4) — Ref. 210346



TECHNIQUE Confirmation of the blood groups of the ABO system.
TESTS/CARD 4
CLONES
Anti-A: Monoclonal anti-A (mixture of IgM antibodies of murine origin, clones 16243 G2 and 16247 E6)
Anti-B: Monoclonal anti-B (IgM antibodies of murine origin, clone 9621 A8)
PRESENTATION 2 x 25 cards

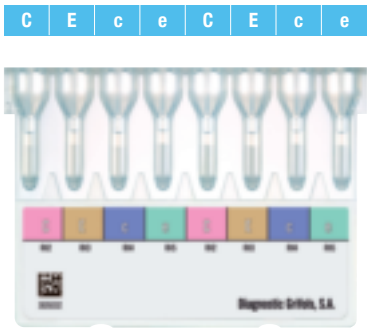
DG Gel Anti-D — Ref. 210341



TECHNIQUE Determination of the Rh (D) system.
TESTS/CARD 4
CLONES
Anti-D^{VI+}: Monoclonal anti-D (mixture of IgG and IgM antibodies of human origin, clones P3x290, P3x35, P3x61, and P3x21223 B10). This anti-D monoclonal reagent detects weak D and partial variants of the D antigen, including the D^{VI} variant
Ctl.: Buffered solution without antibodies (control microtube)
PRESENTATION 1 x 25 cards

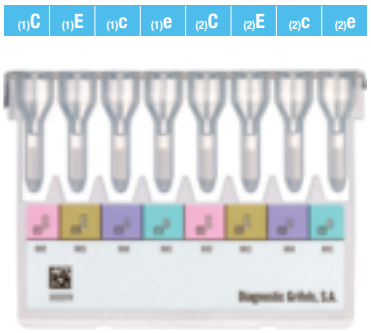
RH PHENOTYPE & KELL

DG Gel Rh Pheno — Ref. 210349



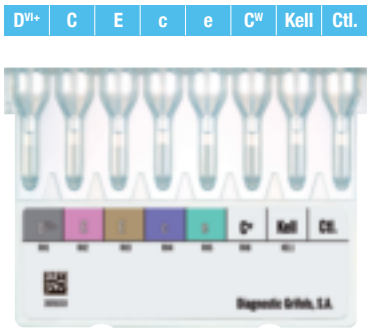
TECHNIQUE Determination of the antigens of the Rh system.
TESTS/CARD 2
CLONES
Anti-C: Monoclonal anti-C (IgM antibodies of human origin, clone MS-24)
Anti-E: Monoclonal anti-E (IgM antibodies of human origin, clone MS-260)
Anti-c: Monoclonal anti-c (IgM antibodies of human origin, clone MS-33)
Anti-e: Monoclonal anti-e (mixture of IgM antibodies of human origin, clones MS-21, MS-16, and MS-63)
PRESENTATION 2 x 25 cards

DG Gel Double Pheno — Ref. 210382



TECHNIQUE Double determination of the antigens of the Rh system.
TESTS/CARD 1
CLONES
Anti-$_{(1)}$C: Monoclonal anti-C (IgM antibodies of human origin, clone MS-24)
Anti-$_{(1)}$E: Monoclonal anti-E (IgM antibodies of human origin, clone MS-260)
Anti-$_{(1)}$c: Monoclonal anti-c (IgM antibodies of human origin, clone H-48)
Anti-$_{(1)}$e: Monoclonal anti-e (mixture of IgM antibodies of human origin, clones MS-21, MS-63, and MS-16)
Anti-$_{(2)}$C: Monoclonal anti-C (IgM antibodies of human origin, clone P3x25513G8)
Anti-$_{(2)}$E: Monoclonal anti-E (IgM antibodies of human origin, clone 906)
Anti-$_{(2)}$c: Monoclonal anti-c (IgM antibodies of human origin, clone MS-33)
Anti-$_{(2)}$e: Monoclonal anti-e (mixture of IgM antibodies of human origin, clones MS-63, and MS-16)
PRESENTATION 2 x 25 cards

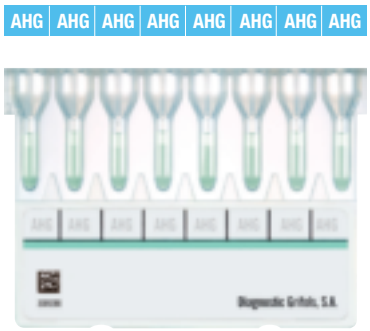
DG Gel Rh Pheno + Kell — Ref. 210350



TECHNIQUE Determination of the antigens of the Rh and Kell systems.
TESTS/CARD 1
CLONES
Anti-D^{VI+}: Monoclonal anti-D (mixture of IgM antibodies of human origin, clones RUM-1 and ESD-1M). This anti-D monoclonal reagent detects weak D and partial variants of the D antigen, including the D^{VI} variant
Anti-C: Monoclonal anti-C (IgM antibodies of human origin, clone MS-24)
Anti-E: Monoclonal anti-E (IgM antibodies of human origin, clone 906)
Anti-c: Monoclonal anti-c (IgM antibodies of human origin, clone MS-33)
Anti-e: Monoclonal anti-e (mixture of IgM antibodies of human origin, clones MS-21, MS-63 and MS-16)
Anti-C^{w}: Monoclonal anti-C^{w} (IgM antibodies of human origin, clone MS-110)
Anti-Kell: Monoclonal anti-Kell (IgM antibodies of human origin, clone MS-56)
Ctl.: Buffered solution without antibodies (control microtube)
PRESENTATION 2 x 25 cards

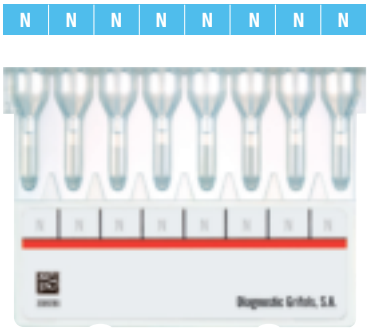
UNEXPECTED ANTIBODY INVESTIGATION

DG Gel Coombs — Ref. 210342



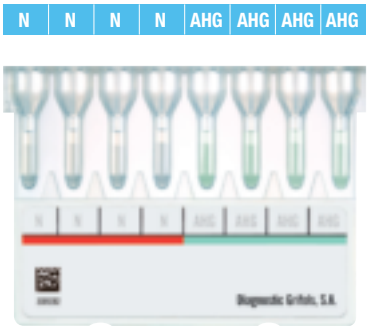
TECHNIQUE	Indirect Coombs and direct Coombs tests. The indirect Coombs tests include screening and identification of unexpected antibodies, cross-matching tests, autocontrol, and red blood cell typing.
TESTS/CARD	Depending on the test
CLONES	**AHG:** Coombs, buffered low ionic strength solution (LISS) with polyspecific anti-human globulin. Mixture of rabbit polyclonal anti-IgG and monoclonal anti-C3d antibodies (IgM antibodies of murine origin, clone 12011 D10)
PRESENTATION	2 x 25 cards

DG Gel Neutral — Ref. 210343



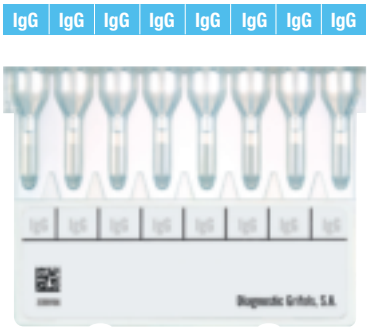
TECHNIQUE	Physical medium for saline and enzymatic tests. The saline and enzymatic technique tests include: screening and identification of unexpected antibodies, cross-matching tests, autocontrol, red blood cell typing, and determination of the reverse ABO group.
TESTS/CARD	Depending on the test
CLONES	**N:** Buffered solution without antibodies (neutral microtubes)
PRESENTATION	2 x 25 cards

DG Gel Neutral/Coombs — Ref. 210375



TECHNIQUE	Indirect, direct Coombs tests and physical medium for saline and enzymatic tests. The tests include: screening and identification of unexpected antibodies, cross-matching tests, autocontrol, and red blood cell typing.
TESTS/CARD	Depending on the test
CLONES	**N:** Buffered solution without antibodies (neutral microtubes) **AHG:** Coombs, buffered low ionic strength solution (LISS) with polyspecific anti-human globulin. Mixture of rabbit polyclonal anti-IgG and monoclonal anti-C3d antibodies (IgM antibodies of murine origin, clone 12011 D10)
PRESENTATION	2 x 25 cards

DG Gel Anti-IgG — Ref. 210344

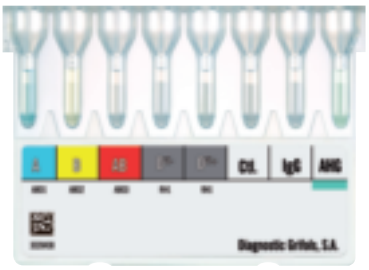


TECHNIQUE	Indirect Coombs and direct Coombs tests. The indirect Coombs tests include: screening and identification of unexpected antibodies, cross-matching tests, and autocontrol.
TESTS/CARD	Depending on the test
CLONES	**Anti-IgG:** Rabbit polyclonal anti-IgG in buffered low ionic strength solution (LISS)
PRESENTATION	2 x 25 cards

SPECIAL TESTS

DG Gel Newborn — Ref. 210353

A	B	AB	D^{VI-}	D^{VI+}	Ctl.	IgG	AHG



TECHNIQUE Determination of the antigens of the ABO and Rh (D) systems and direct Coombs test in newborns.

TESTS/CARD 1

CLONES
Anti-A: Monoclonal anti-A (IgM antibodies of murine origin, clone DAM-1)
Anti-B: Monoclonal anti-B (IgM antibodies of murine origin, clone 9621 A8)
Anti-AB: Monoclonal anti-AB (mixture of IgM antibodies of murine origin, clones LA-2, LB-2, and ES-15)
Anti-D^{VI-}: Monoclonal anti-D (IgM antibodies of human origin, clone P3x61)
Anti-D^{VI+}: Monoclonal anti-D (mixture of IgM antibodies of human origin, clones RUM-1 and ESD-1M). This anti-D monoclonal reagent detects weak D and partial variants of the D antigen, including the D^{VI} variant
Ctl.: Buffered solution without antibodies (control microtube)
Anti-IgG: Rabbit polyclonal anti-IgG in buffered low ionic strength solution (LISS)
AHG: Coombs, buffered low ionic strength solution (LISS) with polyspecific anti-human globulin. Mixture of rabbit polyclonal anti-IgG and monoclonal anti-C3d antibodies (IgM antibodies of murine origin, clone 12011 D10)

PRESENTATION 2 x 25 cards

DG Gel DC Scan — Ref. 210345

AHG	IgG	C3d	Ctl.	AHG	IgG	C3d	Ctl.

TECHNIQUE Evaluation of positive Direct Coombs samples. It allows differentiating red blood cells sensitized in vivo by IgG type immunoglobulin or the complement C3d fraction.

TESTS/CARD 2

CLONES
AHG: Coombs, buffered low ionic strength solution (LISS) with polyspecific anti-human globulin. Mixture of rabbit polyclonal anti-IgG and monoclonal anti-C3d antibodies (IgM antibodies of murine origin, clone 12011 D10)
Anti-IgG: Rabbit polyclonal anti-IgG in buffered low ionic strength solution (LISS)
Anti-C3d: Monoclonal anti-C3d (IgM antibodies of murine origin, clone 12011 D10)
Ctl.: Buffered solution without antibodies (control microtube)

PRESENTATION 1 x 25 cards

DG Gel CT — Ref. 210374

A	B	D^{VI+}	Ctl.	N	N	AHG	AHG

TECHNIQUE Confirmation of the blood groups of the ABO and Rh (D) systems, ABO/Rh (D) isogroup compatibility test, screening of unexpected antibodies, crossmatch, and autocontrol.

TESTS/CARD 1

CLONES
Anti-A: Monoclonal anti-A (mixture of IgM antibodies of murine origin, clones 16243 G2 and 16247 E6)
Anti-B: Monoclonal anti-B (IgM antibodies of murine origin, clone 9621 A8)
Anti-D^{VI+}: Monoclonal anti-D (mixture of IgG and IgM antibodies of human origin, clones P3x290, P3x35, P3x61, P3x21223 B10). This anti-D monoclonal reagent detects weak D and partial variants of the D antigen, including the D^{VI} variant
Ctl.: Buffered solution without antibodies (control microtube)
N: Buffered solution without antibodies (neutral microtubes)
AHG: Coombs, buffered low ionic strength solution (LISS) with polyspecific anti-human globulin. Mixture of rabbit polyclonal anti-IgG and monoclonal anti-C3d antibodies (IgM antibodies of murine origin, clone 12011 D10)

PRESENTATION 2 x 25 cards

DG Gel T/S Poly — Ref. 210377

A	B	D^{VI-}	Ctl.	AHG	AHG	AHG	AHG

TECHNIQUE Confirmation of the blood groups of the ABO and Rh (D) systems and indirect Coombs tests. The indirect Coombs tests include: screening of unexpected antibodies, cross-matching tests, and autocontrol.

TESTS/CARD 1

CLONES
Anti-A: Monoclonal anti-A (IgM antibodies of murine origin, clone DAM-1)
Anti-B: Monoclonal anti-B (IgM antibodies of murine origin, clone 9621 A8)
Anti-D^{VI-}: Monoclonal anti-D (IgM antibodies of human origin, clone P3x61)
Ctl.: Buffered solution without antibodies (control microtube)
AHG: Coombs, buffered low ionic strength solution (LISS) with polyspecific anti-human globulin. Mixture of rabbit polyclonal anti-IgG and monoclonal anti-C3d antibodies (IgM antibodies of murine origin, clone 12011 D10)

PRESENTATION 2 x 25 cards

Reagent red blood cells 0.8%

The DG Gel system offers a complete range of reagent red blood cells for use with column agglutination technology that can easily adapt to the daily work requirements of immunohematology laboratories (IH) laboratories and fulfill high-quality standards.

Determination of the reverse group

Reagent red blood cells from known A_1, A_2, B, and O group donors for reverse grouping

- The combination of A_1 and A_2 provides an effective way of detecting unexpected anti-A_1
- The preservative used does not inhibit complement activation, allowing for the detection of hemolysins

Find the product that best fits your needs with a comprehensive range of reagent red blood cells 0.8%

Reagent red blood cells for reverse grouping

REF	PRODUCT	PRESENTATION
210215	Serigrup Diana 4	4 x 10 mL (A_1, A_2, B, O)
213588	Reverse-Cyte A_1, A_2, B, O (0.8%)	4 x 10 mL (A_1, A_2, B, O)
213659	Serigrup Diana A_1, B	2 x 10 mL (A_1, B)
213598	Reverse-Cyte A_1, B 0.8%	2 x 10 mL (A_1, B)
213591	Reverse-Cyte A_1 0.8%	1 x 10 mL (A_1)
213658	Serigrup Diana A_2	1 x 10 mL (A_2)
213592	Reverse-Cyte A_2 0.8%	1 x 10 mL (A_2)
213593	Reverse-Cyte B 0.8%	1 x 10 mL (B)
213594	Reverse-Cyte O 0.8%	1 x 10 mL (O)

Reverse-Cyte reagents

Screening of unexpected antibodies

Panels of 1, 2, 3, or 4 cells, with a specifically selected antigen configuration, for screening most of the clinically relevant, unexpected antibodies.

- A complementary range of papainized (P) red blood cells is available (2, 3, and 4 cells)
- Routine presence of antigen C^w, K, Kp^a, Le^a, Le^b and P1
- Homozygous expression for the following antigens: D, C, c, E, e, M, N, S, s, Fy^a, Fy^b, Jk^a, Jk^b, Lu^b, Kp^b and k
- Screen-Cyte Di^a 0.8%: 3-cell panel for screening unexpected antibodies including anti-Di^a
- Sero-Cyte Pool 0.8%: Mixture of 2 cells in 1 vial (pool) for screening unexpected antibodies in donors. Each vial of red blood cells is from a single O group donor, except for the Sero-Cyte Pool 0.8%

Reagent red blood cells for screening of unexpected antibodies

REF	PRODUCT	PRESENTATION
213634	Sero-Cyte Pool 0.8%	3 x 10 mL (I, I, I)
210204	Serascan Diana 2	2 x 10 mL (I, II)
213589	Sero-Cyte 0.8%	2 x 10 mL (I, II)
210206	Serascan Diana 3	3 x 10 mL (I, II, III)
213590	Screen-Cyte 0.8%	3 x 10 mL (I, II, III)
213653	Screen-Cyte Di^a 0.8%	3 x 10 mL (I, II, III^{Dia})
210208	Serascan Diana 4	4 x 10 mL (I, II, III, IV)
210203	Serascan Diana Di^a	1 x 10 mL (Di^a)
213802	Diego(a)-Cyte 0.8%	1 x 10 mL (Di^a)

Papainized reagent red blood cells for screening of unexpected antibodies

REF	PRODUCT	PRESENTATION
210205	Serascan Diana 2P	2 x 10 mL (IP, IIP)
210207	Serascan Diana 3P	3 x 10 mL (IP, IIP, IIIP)
210209	Serascan Diana 4P	4 x 10 mL (IP, IIP, IIIP, IVP)
213665	Screen-Cyte P 0.8%	3 x 10 mL (IP, IIP, IIIP)

Identification of unexpected antibodies

11-cell, 12-cell and 15-cell panels with an antigen configuration specifically selected for identification of clinically relevant unexpected antibodies.

- Several panels can be used in combination
- A complementary range of papainized (P) red blood cells is available
- In the presence of anti-D, anti-C or anti-E, it enables detection of a second antibody for Jk, Fy, MNS or K
- **Homozygous expression** for the following antigens: M, N, S, s, C, c, E, e, Lu^b, k, Kp^b, Js^b, Fy^a, Fy^b, Jk^a and Jk^b
- **Data-Cyte Plus Di^a 0.8%:** a new 12-cell panel that always includes a positive cell for the Di^a antigen
- **Identisera Diana + Identisera Diana Extend:** Unique 15-cell panel with 3 R_1R_1 cells and 4 rr homozygous cells and complementary Jk, Fy and MNS cells

Reagent red blood cells for identification of unexpected antibodies

REF	PRODUCT	PRESENTATION
210210	Identisera Diana	11 x 5 mL (1 to 11)
210212	Identisera Diana Extend	4 x 5 mL (12 to 15)
213587	Data-Cyte Plus 0.8%	11 x 4 mL (1 to 11)
213627	Data-Cyte Plus Di^a 0.8%	12 x 4 mL (1 to 12^{Dia})

Papainized reagent red blood cells for identification of unexpected antibodies

REF	PRODUCT	PRESENTATION
210211	Identisera Diana P	11 x 5 mL (1P to 11P)
210213	Identisera Diana Extend P	4 x 5 mL (12P to 15P)
213661	Data-Cyte Plus P 0.8%	11 x 4 mL (1P to 11P)

Identisera Diana

Antisera for DG Gel cards

The DG Gel system provides a wide range of high-quality monoclonal and polyclonal antisera for typing common and rare antigens.

Antisera reagents combined with DG Gel Neutral, DG Gel Coombs, or DG Gel anti-IgG cards enables further customization of your testing profile without using different cards.

Antisera validated for manual and automated processing

REF	PRODUCT	ANTIBODY TYPE & ORIGIN	CLONE	PRESENTATION
213633*	Anti-H Mono-Type	Monoclonal murine IgM	10934C11	1 x 5 mL
213437*	Anti-A_1 Lectin	Lectin from Dolichos biflorus	-	1 x 5 mL
213005	Anti-D IgG Mono-Type	Monoclonal murine/human IgG	ESD1	1 x 10 mL
213140	Anti-C^w	Monoclonal human IgM	MS-110	1 x 5 mL
213176	Anti-K	Monoclonal human IgM	MS-56	1 x 5 mL
213557*	Anti-K Mono-Type (2)	Monoclonal human IgM	AEK-3	1 x 5 mL
213209*	Anti-k- (cellano) Mono-Type	Monoclonal human IgG	P3A118OL67	1 x 5 mL
213995*	Anti-Kp^a Dual	Polyclonal human	-	1 x 5 mL
213996*	Anti-Kp^b Dual	Polyclonal human	-	1 x 5 mL
213208*	Anti-Fy^a Mono-Type	Monoclonal human IgG	P3TIM	1 x 5 mL
213206	Anti-Fy^a for DG Gel	Polyclonal human	-	1 x 5 mL
213207	Anti-Fy^b for DG Gel	Polyclonal human	-	1 x 5 mL
213189	Anti-Jk^a	Polyclonal human	-	1 x 5 mL
213184	Anti-Jk^b	Polyclonal human	-	1 x 5 mL
213192	Anti-Lu^a	Polyclonal human	-	1 x 5 mL
213193	Anti-Lu^b	Polyclonal human	-	1 x 5 mL
213008*	Anti-M Mono-Type Dual	Monoclonal murine IgG	LM110/140	1 x 5 mL
213989*	Anti-N (LN3/MN879) Mono-Type	Monoclonal murine IgG	LN3/MN879	1 x 5 mL
213993*	Anti-S Mono-Type	Monoclonal murine/human IgM	MS-94	1 x 5 mL
213994*	Anti-s Mono-Type	Monoclonal murine/human IgM	P3BER	1 x 5 mL
213217	Anti-Le^a	Monoclonal murine IgA	GA2	1 x 5 mL
213219	Anti-Le^b	Monoclonal murine IgM	LEB1	1 x 5 mL

Antisera validated for manual processing

REF	PRODUCT	ANTIBODY TYPE & ORIGIN	CLONE	PRESENTATION
213204	Anti-Jk^a for DG Gel	Monoclonal human IgM	MS-15	1 x 5 mL
213205	Anti-Jk^a for DG Gel	Monoclonal human IgM	MS-8	1 x 5 mL
213229*	Anti-Di^a Dual	Polyclonal human	-	1 x 2 mL
213230*	Anti-P1 Mono-Type	Monoclonal murine/human IgM	P3NIL100	1 x 5 mL

** Antisera reagents also validated for use in conventional techniques.*

Quality controls for DG Gel cards

Quality management is necessary for reliable and accurate laboratory performance. To guarantee increased transfusion safety, internal controls must be conducted at regular intervals in accordance with local and national guidelines.

Our immunohematology internal quality controls, Extended IV Control and Essential II Control, simulate real patient samples and are ideal for monitoring both manual and automated procedures.

Adapt to laboratory quality assurance protocols with a choice of controls

Specifications

- **Extended IV Control:**
  - Tube 1: A2B R1R2 (CcD.Ee), K pos
  - Tube 2: A $R1^{w}$ R1 (CC^{w} Dee), Fy^{a} neg, with anti-B and anti-Fy^{a}
  - Tube 3: B R2R2 (ccD.EE), with anti-A
  - Tube 4: O rr (ccddee), K neg, with anti-A, anti-B and anti-D (approx. 0.05 IU/mL)
- **Essential II Control:**
  - Tube 1: A rr (ccddee), K pos with anti-B and anti-D (approx. 0.05 IU/mL)
  - Tube 2: B R1R2 (CcD.Ee), K neg, Fy^{a} neg with anti-A and anti-Fy^{a}

Quality control reagents

REF	PRODUCT	PRESENTATION
213286	Extended IV Control	4 x 6 mL
213287	Essential II Control	2 x 2 x 6 mL

Extended IV Control

Essential II Control

2. Extended IV Control and Essential II Control have been validated to also work with Grifols conventional techniques and the MDmulticard system providing additional flexibility.

Complementary reagents and solutions

Complementary solutions are compatible with all DG Gel reagents and instruments, improving laboratory stock management, enabling the use of any combination of instruments, and making it easy to upgrade laboratory instrumentation.

Complementary reagents and solutions

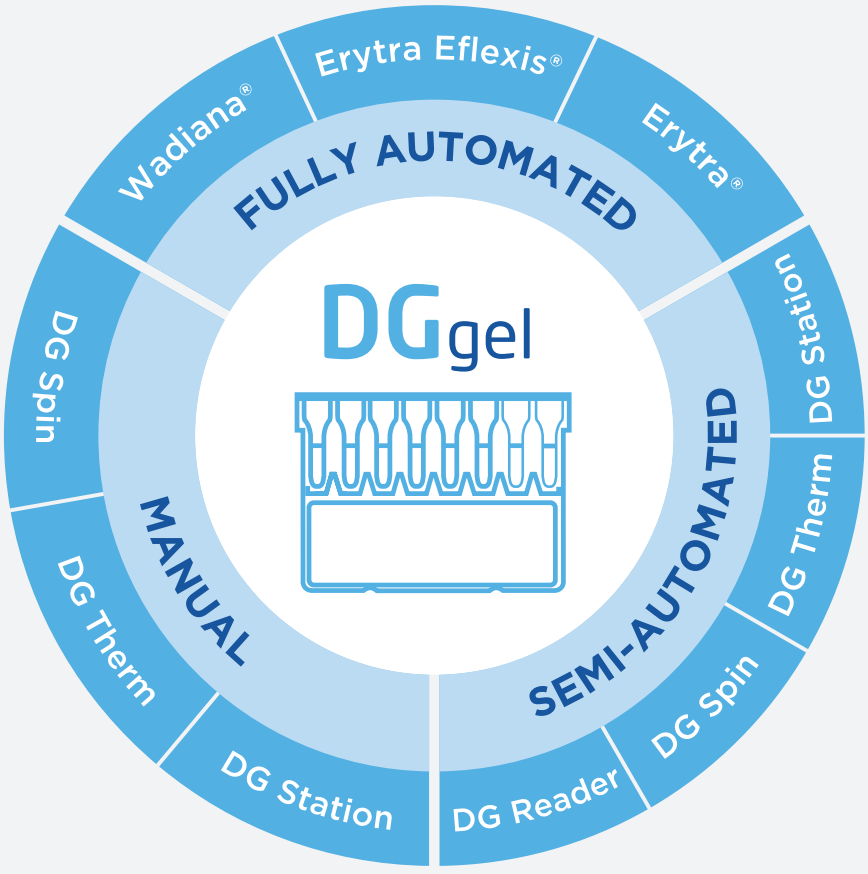
REF	PRODUCT	PRESENTATION	DESCRIPTION
210354	DG Gel Sol	2 x 100 mL	DG Gel Sol is a reagent used for preparing red blood cell suspensions used in DG Gel techniques.
210385	DG CellMedia	1 x 500 mL	DG CellMedia is a liquid red blood cell preservative used to prepare red blood cell 0.8% suspensions for use with DG Gel cards.
210357	DG-Papain	1 x 10 mL	DG-Papain is a liquid papain solution for performing enzyme assays in DG Gel techniques.
213578	Bromelase 30	1 x 10 mL	Bromelase 30 is a liquid bromelain solution for performing enzyme assays using conventional and DG Gel techniques.
213679	DG Fluid A	12 x 125 mL	DG Fluid A is a saline-based solution for internal washing of the fluid systems and probes of in vitro diagnostic devices. It should be diluted and used with DG Fluid B.
213678	DG Fluid B	12 x 125 mL	DG Fluid B is a tensioactive solution used for internal washing of the fluid systems and probes of in vitro diagnostic devices. It should be diluted and used with DG Fluid A.
213797	DG Clean	9 x 30 mL	DG Clean is a solution for cleaning the probes of Grifols analyzers. For laboratory use.

DG Gel system instruments

Grifols has been a pioneer in column agglutination automation by designing and manufacturing a range of scalable instruments from manual to fully automated.

DG Gel system instruments have a smart and simple design, which require minimal maintenance.[3] They were designed for consistent test procedures and sample management across different platforms. Using unique simultaneous perforation and dispensing technologies, they allow 100% use of the card wells, which reduces the risk of cross-contamination.

Combine DG Gel instruments to handle an increased workload or use as a backup system



Welcome to the virtual experience of DG Gel system.
Please download the DG Gel augmented reality application through the QR code. Scan the DG Gel target circle with your smartphone or tablet to begin the experience.

Download from

Download from

3. Only monthly maintenance is required.

Automated systems

erytra

Erytra is a fully automated, high-throughput, high-capacity instrument for performing pretransfusion compatibility tests using gel technology. Erytra combines efficiency and flexibility with intuitive operation that adapts to laboratory needs. The instrument assists in delivering highly reliable, quick results, which contribute to patient safety.

High workloads are handled efficiently

- Self-organizing capacity to optimally perform sample testing
- Autonomy of up to 4 hours
- Erytra can be combined with another Erytra or Erytra Eflexis using the same software
- Laboratory Information Systems (LIS)

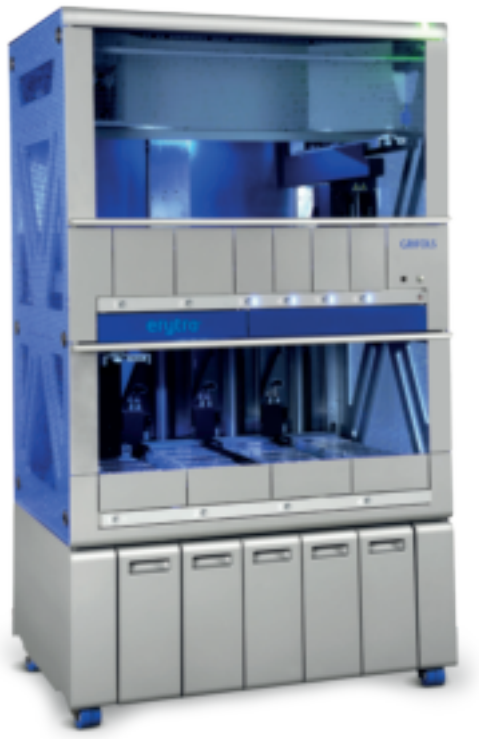
High efficiency and flexibility

Superior flexibility

- Continuous loading of samples and reagents
- High capacity: 96 samples, 54 liquid reagents, 400 DG Gel cards
- Emergency samples (STAT)
- Configurable parameters to be adapted to different laboratory requirements

Easy user interaction

- Minimal training required due to intuitive software and simple design
- Real-time status of reagents and samples
- High-definition color results for easier revision of results
- Quality control check throughout the test procedure



120 x 80 x 170 cm; 43 x 28 x 69 in
(W x D x H)
Approximately 350 kg; 772 lb

Automated systems

erytra eflexis

A new, fully automated, mid-size analyzer that performs pretransfusion compatibility tests using DG Gel technology.

This smart, flexible, and intuitive instrument helps labs achieve workflow efficiency and improve daily work routines.

Smart, compact design

- Multiple laboratory configurations and multi-site networks: option to connect different Erytra Eflexis and Erytra units as a network
- Compact benchtop model with transparent casing for a clear view of the internal processes
- LIS bi-directional connectivity

Flexible performance

- True continuous loading and unloading of samples, reagents, and cards
- STAT management: just press the STAT button for sample prioritization
- Two in one: unique interchangeable sample and reagents lineal racks automatically identified by the system for additional laboratory workflow adaptability
- Capacity for 200 DG Gel cards, up to 72 samples and 46 liquid reagents

Intuitive operations

- Minimal training to interact with the easy-to-use external touchscreen
- Grifols exclusive simultaneous perforations and dispensing technology for 100% use of the cards
- The same intuitive and customizable Erytra software suite
- Remote access for results validation and after-sales support remote connection
- Minimal maintenance[4]

Adaptability that fits your lab

110 x 71 x 91 cm; 43.3 x 27.9 x 35.8 in
(W x D x H)
Approximately 173 kg; 381.4 lb

4. Only monthly maintenance is required.

Automated systems

wadiana

Wadiana is a fully automated, compact instrument, to process DG Gel cards in pretransfusion compatibility tests.

It is the next step for manual or semi-automated users who want a fully automated instrument while maintaining flexibility, and also want a smooth implementation.

All-in-one instrument

- Compact and small instrument
- Fully automated of sample procedure
- LIS bidirectional communication

Adaptability

- Benchtop instrument ideal even for the smallest laboratory
- Minimum reaction time: 4 minutes of startup
- Random positioning of samples and reagents (48 samples, 18 liquid reagents and 24 DG Gel cards)

Robust hardware

- Reliable and proven instrument
- Use of 100% of the card wells
- Card integrity check prior to processing
- Minimal maintenance[5]

A smart choice for your laboratory

100 x 60 x 65 cm; 39 x 24 x 26 in
(W x D x H)
Approximately 87 kg; 192 lb

5. Only monthly maintenance is required.

Semi-automated and manual systems

Manual instruments are the minimum essentials to manually process DG Gel cards.

They can be used as a single platform for card processing for low sample volume laboratories or as a backup system for laboratories using a fully automated system.

Manual instruments can be combined with the DG Reader providing traceability and data management of results.

DGreader

Instrument for reading and interpreting DG Gel cards

- Fully standardized card reading and results interpretation
- Record and data storage
- Check required results and print necessary reports
- Reduce transcription errors with automated upload of results to LIS

38.22 x 41.3 x 18.25 cm; 15 x 16.3 x 7.2 in
(W x D x H)
Approximately 12 kg; 27.5 lb

DGtherm

Digital incubator

- 2 independent incubation zones
- Capacity for 12 DG Gel cards and 12 tubes each
- Digital on-screen display
- Fixed preset temperature of 37°C
- Adjustable, preset incubation time of 15 minutes

31 x 33 x 10 cm; 24 x 26 x 40 in
(W x D x H)
Approximately 4 kg; 9 lb

DGspin

Digital centrifuge

- Simultaneous centrifuge of up to 24 DG Gel cards
- Removable and exchangeable spinning head
- Pre-defined centrifuge parameters
- Digital on-screen display
- Automatic detection of incorrect placement of DG Gel cards on the spinning head

41 x 52.5 x 18 cm; 16 x 21 x 7 in
(W x D x H)
Approximately 9 kg; 20 lb

DGmanual station

Work station

- Aluminum support for DG Gel cards, sample tubes and reagents
- Capacity for 16 DG Gel cards, 2 bottles of DG Gel Sol diluent, 8 vials of reagents (5 and 10 mL) and 32 dilution tubes (13 mm) and 16 sample tubes (16 mm)
- Completely adaptable to suit both left-handed and right-handed operators

55.5 x 34 x 75 cm; 21.8 x 13.4 x 3 in
(W x D x H)
Approximately 0.75 kg; 1.65 lb

Automated systems

REF	PRODUCT	DESCRIPTION
213787	Wadiana	Fully automated instrument for the processing of DG Gel cards
232295	PC Matrox 4Sight	Computer for the Wadiana instrument
210400	Erytra	Fully automated instrument with a high-processing capacity for the processing of DG Gel cards
210600	Erytra Eflexis	A fully automated, mid-sized analyzer to perform the pretransfusion compatibility tests using DG Gel technology with a smart and compact design for intuitive operations

Semi-automated systems

REF	PRODUCT	DESCRIPTION
213777	DG Reader	Reader for DG Gel cards
232295	PC Matrox 4Sight GP	Computer for the DG Reader

Manual systems

REF	PRODUCT	DESCRIPTION
210366	DG Manual Station	DG Gel card work station (2 modules for cards + 2 racks for reagents)
213722	DG Pipette	Pipette for set volumes (10, 25, 50 µL)
213720	DG Dispenser Plus	Dispenser for set volumes (from 250 µL to 2500 µL)
213734	DG Therm	Digital incubator for the processing of DG Gel cards
210363	DG Spin	Digital centrifuge for the processing of DG Gel cards

Accessories

REF	PRODUCT	DESCRIPTION
213713	Sample holder	Holder to load samples into Erytra and Erytra Eflexis analyzer
210601	Erytra Eflexis rack for samples	Rack to load samples into the Erytra Eflexis
233178	Erytra system solution container	Container designated for the Erytra diluted system solution (DG Fluid A or DG Fluid B)
234179	System solution container	Container designated to hold diluted wash solution (A or B) or decontamination solution in Erytra Eflexis
210603	Erytra Eflexis card waste container	Disposable container for card waste
213778	Diana BCC	Barcode replicating printer
213776	Diana BCC labels	Blank labels for use with the Diana BCC printer (1000 units)
213775	DG Pipette tips	Bag of tips for the DG Pipette (1000 units)
210367	DG Cap holder	Support for the dropper caps of the reagent red blood cells
210610	Grifols Bench	Special stand-alone table designed to increase Erytra Eflexis autonomy

Product registration and availability vary by country. Ask your local Grifols representative for more information.

The DG Gel system supports safer transfusions and improving outcomes for patients.

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GRIFOLS

TRANSFUSION MEDICINE

DG gel

Technical Guide

TYPING

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Icon guideline

IDENTIFY DG GEL CARD

RED BLOOD CELL SAMPLE DILUTION

ABO/Rh/K typing: **5%** in DG Gel Sol

Antibody testing & special techniques: **1%** in DG Gel Sol

DILUTION REQUIRED	SAMPLE VOLUME (RBCs)	DILUENT VOLUME (DG GEL SOL)
5%	50 µL	1 mL
	10 µL	200 µL
1%	10 µL	1 mL
	5 µL	500 µL

RED BLOOD CELL SAMPLE DILUTION DISPENSING

ABO/Rh/K typing: **10 µL**

Antibody testing & special techniques: **50 µL**

REAGENT RED BLOOD CELLS DISPENSING

Serigrup Diana, Reverse-Cyte 0.8%
Serascan Diana, Sero-Cyte 0.8%*
Screen-Cyte 0.8%*
Indentisera Diana
Data-Cyte Plus 0.8%*
50 µL

PLASMA OR SERUM SAMPLE/ANTISERA DISPENSING

Determination of reverse group: **50 µL**

Rest of techniques: **25 µL**

INCUBATION OF THE DG GEL CARD

Coombs & enzymatic techniques: **15 min/37ºC**

Saline techniques: **15 min/Room temperature**
(Possibility of incubation at 37ºC or 2-8ºC)

Incubator for DG Gel cards: DG Therm

CENTRIFUGATION: 9 MIN

Centrifuge for DG Gel cards: DG Spin

READING RESULTS

DG Reader can be used
See reaction patterns

*And the papainized version.

Product registration and availability vary by country. Ask your local Grifols representative for more information.

Notes: Ensure the resuspension of the red blood cells sample dilution before use.

Homogenize the vials of reagent red blood cells before use.

DG GEL PORTFOLIO

Reagent red blood cells 0.8%

Determination of the reverse group	Screening of unexpected antibodies	Identification of unexpected antibodies	
			
Serigrup Diana **Reverse-Cyte**	**Serascan Diana*** **Sero-Cyte** **Screen-Cyte***	**Identisera Diana*** **Data-Cyte Plus***	**Identisera Diana** **Extend***
Nine different options for determination of the reverse group.	Thirteen different options for screening panels with 1, 2, 3 and 4 cells.	Up to sixty-four different cells for the identification of unexpected antibodies.	

*And the papainized version. Product registration and availability vary by country. Ask your local Grifols representative for more information.

Reagent red blood cells 0.8%

Determination of the reverse group

Serigrup Diana Reverse-Cyte

Nine different options for determination of the reverse group

SERIGRUP DIANA

Serigrup Diana A_1 / B
Ref. 213659

Serigrup Diana A_2
Ref. 213658

Serigrup Diana 4
Ref. 210215

REVERSE-CYTE

Reverse-Cyte A_1 0.8%
Ref. 213591

Reverse-Cyte A_2 0.8%
Ref. 213592

Reverse-Cyte B 0.8%
Ref. 213593

Reverse-Cyte O 0.8%
Ref. 213594

Reverse-Cyte A_1, B 0.8%
Ref. 213598

Reverse-Cyte A_1, A_2, B, O 0.8%
Ref. 213588

Product registration and availability vary by country. Ask your local Grifols representative for more information.

Reagent red blood cells 0.8%

Screening of unexpected antibodies

Serascan Diana Sero-Cyte Screen-Cyte

Thirteen different options for screening panels with 1, 2, 3 and 4 cells

SERASCAN DIANA

Serascan Diana 2/2P

Ref. 210204/210205

Serascan Diana 3/3P

Ref. 210206/210207

Serascan Diana 4/4P

Ref. 210208/210209

Serascan Diana Di[a]

Ref. 210203

SERO-CYTE

Sero-Cyte 0.8%

Ref. 213589

Sero-Cyte Pool 0.8%

Ref. 213634

SCREEN-CYTE

Screen-Cyte 0.8%

Ref. 213590

Screen-Cyte Di[a] 0.8%

Ref. 213653

Screen-Cyte P 0.8%

Ref. 213665

DIEGO(A)-CYTE

Diego (a)-Cyte

Ref. 213802

Product registration and availability vary by country. Ask your local Grifols representative for more information.

Reagent red blood cells 0.8%

	IDENTISERA DIANA	DATA-CYTE
Identification of unexpected antibodies	 Identisera Diana Ref. 210210	 Data-Cyte Plus 0.8% Ref. 213587
Identisera Diana Data-Cyte Plus	 Identisera Diana P Ref. 210211	 Data-Cyte Plus P 0.8% Ref. 213661
Up to sixty-four different cells for the identification of unexpected antibodies	 Identisera Diana Extend Ref. 210212  Identisera Diana Extend P Ref. 210213	 Data-Cyte Plus Di[a] 0.8% Ref. 213627

Product registration and availability vary by country. Ask your local Grifols representative for more information.

Antisera for DG Gel cards

Rare antigen typing

Antisera for DG Gel cards

- Anti-H Mono-Type
  Ref. 213633
- Anti A_1 Lectin
  Ref. 213437
- Anti-D IgG Mono-Type
  Ref. 213005
- Anti-C^w
  Ref. 213140
- Anti-K
  Ref. 213176
- Anti-K Mono-Type (2)
  Ref. 213557
- Anti-k (cellano) Mono-Type
  Ref. 213209
- Anti-Kp^a Dual
  Ref. 213995
- Anti-Kp^b Dual
  Ref. 213996
- Anti-Fy^a Mono-Type
  Ref. 213208
- Anti-Fy^a for DG Gel
  Ref. 213206
- Anti-Fy^b for DG Gel
  Ref. 213207
- Anti-Jk^a for DG Gel
  Ref. 213204
- Anti-Jk^b for DG Gel
  Ref. 213205
- Anti-Le^a
  Ref. 213217
- Anti-Le^b
  Ref. 21319
- Anti-Lu^a
  Ref. 213192
- Anti-Lu^b
  Ref. 213193
- Anti-M Mono-Type Dual
  Ref. 213008
- Anti-N (LN3/MN879) Mono-Type
  Ref. 213989
- Anti-S Mono-Type
  Ref. 213993
- Anti-s Mono-Type
  Ref. 213994
- Anti-Di^a Dual
  Ref. 213229
- Anti-P1 Mono-Type
  Ref. 213230

Liquid antisera tool to solve routine testing and complex cases

Product registration and availability vary by country. Ask your local Grifols representative for more information.

Complementary reagents and solutions for the DG Gel system

DG Gel Sol Ref. 210354	**DG Gel CellMedia** Ref. 210385	**DG-Papain** Ref. 210357	**Bromelase 30** Ref. 210578
			
DG Gel Sol is a reagent for preparing red blood cell suspensions used in gel techniques.	Red blood cells preservative solution, fused to prepare red blood cell 0.8% suspensions for use with DG Gel cards.	A liquid papain solution for performing enzyme assays using DG Gel cards.	A liquid bromelain solution for performing enzyme assays in DG Gel techniques.

Product registration and availability vary by country. Ask your local Grifols representative for more information.

Quality controls for the DG Gel system

Essential II Control Ref. 213287	**Extended IV Control** Ref. 213286
	
Double set of two simulated whole blood tubes. Quality controls reagents for ABO/Rh(D) grouping, determination of the Rh phenotype and K antigen and screening of irregular antibodies.	Single set of four simulated whole blood tubes. Quality control of reagents for ABO/Rh(D) grouping, determination of the Rh phenotype and K antigen and screening of irregular antibodies.

Product registration and availability vary by country. Ask your local Grifols representative for more information.

Manual instrumentation for DG Gel cards

DG Manual Station

- Workstation for manually processing the DG Gel cards and test tubes.
- Capacity for 16 DG Gel cards, 2 bottles of DG Gel Sol diluent, 8 vials of reagents (4, 5 and 10 mL), 32 dilution tubes (13 mm) and 16 sample tubes (16 mm).

Ref. 210366

DG Pipette

- Manual dispenser fo the precise pipetting of liquids in repeat series.
- One load can dispense multiple deposits of selectable volumes: 10 µL in 40 wells, 25 µL in 16 wells or 50 µL in 8 wells.

Ref. 213722

DG Dispenser Plus

- Fixed volume dispenser for volumes of 250 µL to 2500 µL.
- One load can dispense multiple deposits of selectable volumes: 10 µL in 40 wells, 25 µL in 16 wells or 50 µL in 8 wells.

Ref. 213720

Product registration and availability vary by country. Ask your local Grifols representative for more information.

Manual instrumentation for DG Gel cards

DGtherm

Digital incubator for manual processing of DG Gel cards.

- 2 independent incubation zones
- Capacity for 12 DG Gel cards and 12 tubes each
- Digital on-screen display
- Fixed preset temperature of 37°C
- Adjustable, preset incubation time of 15 minutes

Ref. 213734

DGspin

Digital centrifuge for the manual processing of DG Gel cards.

- Simultaneous centrifuge of up to 24 DG Gel cards
- Removable and exchangeable spinning head
- Pre-defined centrifuge parameters
- Digital on-screen display
- Automatic detection of incorrect placement of DG Gel cards on the spinning head

Ref. 210363

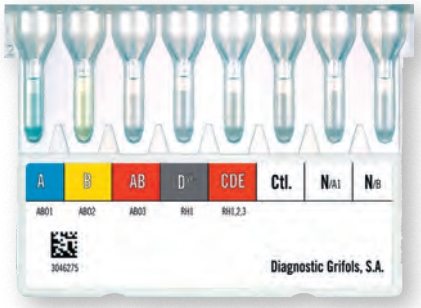
Product registration and availability vary by country. Ask your local Grifols representative for more information.

PROCEDURES

GROUP 1: COMPLETE ABO/RH BLOOD GROUPING

Product registration and availability vary by country. Ask your local Grifols representative for more information.

DG Gel ABO/Rh



MATERIAL REQUIRED

- Samples: red blood cells and serum/plasma
- Automatic pipette 10 µL, 50 µL, 1 mL
- Disposable pipette tips
- Glass tubes
- DG Gel Sol
- Serigrup Diana/Reverse-Cyte 0.8%
- Centrifuge for DG Gel cards: DG Spin

PROCEDURE

1. Identify card
2. Dispense 50 µL of Serigrup Diana/Reverse-Cyte 0.8% into wells 7 and 8
3. Dispense 50 µL of patient's serum/plasma into wells 7 and 8
4. Dilute RBC sample to 5% with DG Gel Sol
5. Dispense 10 µL of RBC dilution into wells 1-6
6. Centrifuge for 9 min
7. Read results

DG Gel ABO/Rh

REFERENCE	PRESENTATION	PROFILE	NUMBER OF TESTS/CARD
210355	2 x 25 cards	A, B, AB, D^{VI-}, CDE, Ctl., $N/_{A1}$, $N/_{B}$	1

TECHNIQUE

Determination of the antigens of the ABO and Rh (D) systems and determination of the reverse ABO group

CLONES

Anti-A: Monoclonal anti-A (mixture of IgM and IgG antibodies of murine origin, clones 16243 G2 and 16247 E6)

Anti-B: Monoclonal anti-B (IgM antibodies of murine origin, clone 9621 A8)

Anti-AB: Monoclonal anti-AB (mixture of IgM and IgG antibodies of murine origin, clones 16245 F11 D8, 16247 E6 and 7821 D9)

Anti-D^{VI-}: Monoclonal anti-D (IgM antibodies of human origin, clone P3x61)

Anti-CDE: Monoclonal anti-CDE (mixture of IgM antibodies of human origin, clones P3x61, P3x25513 G8, P3x234)

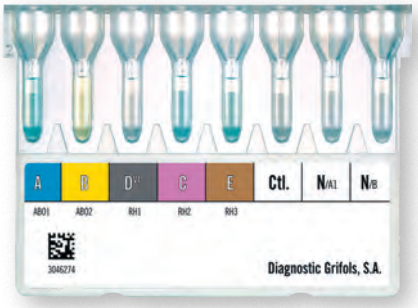
Ctl.: Buffered solution without antibodies (control well)

N: Buffered solution without antibodies (reverse group test)

STORAGE

2-25°C

DG Gel ABO-CDE



MATERIAL REQUIRED

- Samples: red blood cells and serum/plasma
- Automatic pipette 10 µL, 50 µL, 1 mL
- Disposable pipette tips
- Glass tubes
- DG Gel Sol
- Serigrup Diana/Reverse-Cyte 0.8%
- Centrifuge for DG Gel cards: DG Spin

PROCEDURE

1. Identify card
2. Dispense 50 µL of Serigrup Diana/Reverse-Cyte 0.8% into wells 7 and 8
3. Dispense 50 µL of patient's serum/plasma into wells 7 and 8
4. Dilute RBC sample to 5% with DG Gel Sol
5. Dispense 10 µL of RBC dilution into wells 1-6
6. Centrifuge for 9 min
7. Read results

DG Gel ABO-CDE

REFERENCE	PRESENTATION	PROFILE	NUMBER OF TESTS/CARD
210340	2 x 25 cards	A, B, D^{VI-}, C, E, Ctl., $N/_{A1}$, $N/_{B}$	1

TECHNIQUE

Determination of the antigens of the ABO and Rh (D, C, E) systems and determination of the reverse ABO group

CLONES

Anti-A: Monoclonal anti-A (mixture of IgM and IgG antibodies of murine origin, clones 16243 G2 and 16247 E6)

Anti-B: Monoclonal anti-B (IgM antibodies of murine origin, clone 9621 A8)

Anti-D^{VI-}: Monoclonal anti-D (IgM antibodies of human origin, clone P3x61)

Anti-C: Monoclonal anti-C (IgM antibodies of human origin, clone P3x25513 G8)

Anti-E: Monoclonal anti-E (IgM antibodies of human origin, clone 906)

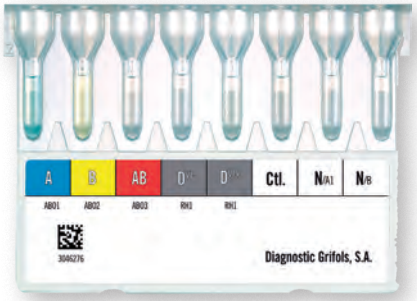
Ctl.: Buffered solution without antibodies (control well)

N: Buffered solution without antibodies (reverse group test)

STORAGE

2-25°C

DG Gel ABO/Rh (2D)



MATERIAL REQUIRED

- Samples: red blood cells and serum/plasma
- Automatic pipette 10 µL, 50 µL, 1 mL
- Disposable pipette tips
- Glass tubes
- DG Gel Sol
- Serigrup Diana/Reverse-Cyte 0.8%
- Centrifuge for DG Gel cards: DG Spin

PROCEDURE

1. Identify card
2. Dispense 50 µL of Serigrup Diana/Reverse-Cyte 0.8% into wells 7 and 8
3. Dispense 50 µL of patient's serum/plasma into wells 7 and 8
4. Dilute RBC sample to 5% with DG Gel Sol
5. Dispense 10 µL of RBC dilution into wells 1-6
6. Centrifuge for 9 min
7. Read results

DG Gel ABO/Rh (2D)

REFERENCE	PRESENTATION	PROFILE	NUMBER OF TESTS/CARD
210338	2 x 25 cards	A, B, AB, D^{VI-}, D^{VI+}, Ctl., $N/_{A1}$, $N/_{B}$	1

TECHNIQUE

Determination of the antigens of the ABO and Rh (D) systems and determination of the reverse ABO group

CLONES

Anti-A: Monoclonal anti-A (mixture of IgM and IgG antibodies of murine origin, clones 16243 G2 and 16247 E6)

Anti-B: Monoclonal anti-B (IgM and IgG antibodies of murine origin, clone 9621 A8)

Anti-AB: Monoclonal anti-AB (mixture of IgM and IgG of murine origin, clones 16245 F11 D8, 16247 E6 and 7821 D9)

Anti-D^{VI-}: Monoclonal anti-D (IgM and IgG antibodies of human origin, clone P3x61)

Anti-D^{VI+}: Monoclonal anti-D (mixture of IgG and IgM antibodies of human origin, clones P3x290, P3x35, P3x61 and P3x21223 B10). This anti-D monoclonal reagent detects weak D and partial variants of the D antigen, including the D^{VI} variant

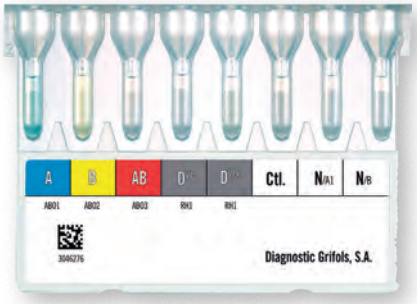
Ctl.: Buffered solution without antibodies (control well)

N: Buffered solution without antibodies (reverse group test)

STORAGE

2-8°C

DG Gel ABO/RH (2D) (RT)



MATERIAL REQUIRED

- Samples: red blood cells and serum/plasma
- Automatic pipette 10 µL, 50 µL, 1 mL
- Disposable pipette tips
- Glass tubes
- DG Gel Sol
- Serigrup Diana/Reverse-Cyte 0.8%
- Centrifuge for DG Gel cards: DG Spin

PROCEDURE

1. Identify card
2. Dispense 50 µL of Serigrup Diana/Reverse-Cyte 0.8% into wells 7 and 8
3. Dispense 50 µL of patient's serum/plasma into wells 7 and 8
4. Dilute RBC sample to 5% with DG Gel Sol
5. Dispense 10 µL of RBC dilution into wells 1-6
6. Centrifuge for 9 min
7. Read results

DG Gel ABO/RH (2D) (RT)

REFERENCE	PRESENTATION	PROFILE	NUMBER OF TESTS/CARD
210126	2 x 25 cards	A, B, AB, D^{VI-}, D^{VI+}, Ctl., $N/_{A1}$, $N/_{B}$	1

TECHNIQUE

Determination of the antigens of the ABO and Rh (D) systems and determination of the reverse ABO group

CLONES

Anti-A: Monoclonal anti-A (mixture of IgM and IgG antibodies of murine origin, clones 16243 G2 and 16247 E6)

Anti-B: Monoclonal anti-B (IgM and IgG antibodies of murine origin, clone 9621 A8)

Anti-AB: Monoclonal anti-AB (mixture of IgM and IgG antibodies of murine origin, clones 16245 F11 D8, 16247 E6 and 7821 D9)

Anti-D^{VI-}: Monoclonal anti-D (IgM and IgG antibodies of human origin, clone MS-201)

Anti-D^{VI+}: Monoclonal anti-D (mixture of IgM antibodies of human origin, clones Anti-D P3x61 and ESD1M)

Ctl.: Buffered solution without antibodies (control well)

N: Buffered solution without antibodies (reverse group test)

STORAGE

2-25°C

DG Gel ABO/Rh (CR)

MATERIAL REQUIRED

- Samples: red blood cells and serum/plasma
- Automatic pipette 10 µL, 50 µL, 1 mL
- Disposable pipette tips
- Glass tubes
- DG Gel Sol
- Serigrup Diana/Reverse-Cyte 0.8%
- Centrifuge for DG Gel cards: DG Spin

PROCEDURE

1. Identify card
2. Dispense 50 µL of Serigrup Diana/Reverse-Cyte 0.8% into wells 6-8
3. Dispense 50 µL of patient's serum/plasma into wells 6 to 8
4. Dilute RBC sample to 5% with DG Gel Sol
5. Dispense 10 µL of RBC dilution into wells 1-5
6. Centrifuge for 9 min
7. Read results

DG Gel ABO/Rh (CR)

REFERENCE	PRESENTATION	PROFILE	NUMBER OF TESTS/CARD
210378	2 x 25 cards	A, B, D^{VI-}, D^{VI-}, Ctl., N, N, N	1

TECHNIQUE

Determination of the antigens of the ABO and Rh (D) systems and complete determination of the reverse ABO group

CLONES

Anti-A: Monoclonal anti-A (IgM antibodies of murine origin, clone DAM-1)

Anti-B: Monoclonal anti-B (IgM antibodies of murine origin, clone 9621 A8)

Anti-D^{VI-}: Monoclonal anti-D (IgM antibodies of human origin, clone P3x61)

Anti-D^{VI-}: Monoclonal anti-D (IgM antibodies of human origin, clone MS-201)

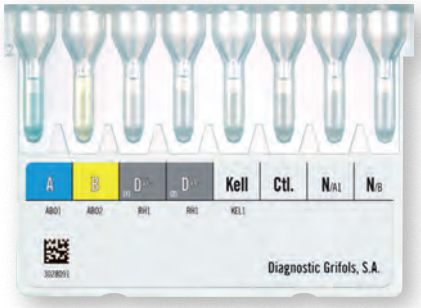
Ctl.: Buffered solution without antibodies (control well)

N: Buffered solution without antibodies (reverse group test)

STORAGE

2-25°C

DG Gel ABO/Rh (2D) + Kell



MATERIAL REQUIRED

- Samples: red blood cells and serum/plasma
- Automatic pipette 10 µL, 50 µL, 1 mL
- Disposable pipette tips
- Glass tubes
- DG Gel Sol
- Serigrup Diana/Reverse-Cyte 0.8%
- Centrifuge for DG Gel cards: DG Spin

PROCEDURE

1. Identify card
2. Dispense 50 µL of Serigrup Diana/Reverse-Cyte 0.8% into wells 7 and 8
3. Dispense 50 µL of patient's serum/plasma into wells 7 and 8
4. Dilute RBC sample to 5% with DG Gel Sol
5. Dispense 10 µL of RBC dilution into wells 1-6
6. Centrifuge for 9 min
7. Read results

DG Gel ABO/Rh (2D) + Kell

REFERENCE	PRESENTATION	PROFILE	NUMBER OF TESTS/CARD
210348	2 x 25 cards	A, B, B, D^{VI-}, D^{VI-} Kell, Ctl., $N/_{A1}$, $N/_{B}$	1

TECHNIQUE

Determination of the antigens of the ABO, Rh (D) and Kell systems and determination of the reverse ABO group

CLONES

Anti-A: Monoclonal anti-A (IgM antibodies of murine origin, clone DAM-1)

Anti-B: Monoclonal anti-B (IgM antibodies of murine origin, clone 9621 A8)

Anti-D^{VI-}: Monoclonal anti-D (IgM antibodies of human origin, clone P3x61)

Anti-D^{VI-}: Monoclonal anti-D (IgM antibodies of human origin, clone MS-201)

Anti-Kell: Monoclonal anti-Kell (IgM antibodies of human origin, clone MS-56)

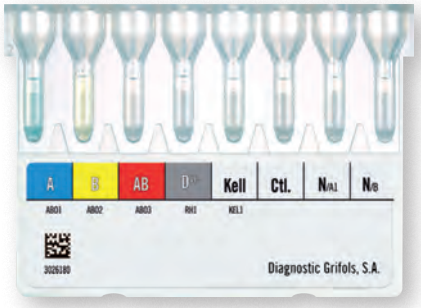
Ctl.: Buffered solution without antibodies (control well)

N: Buffered solution without antibodies (reverse group test)

STORAGE

2-25°C

DG Gel ABO/Rh + Kell (RT)



MATERIAL REQUIRED

- Samples: red blood cells and serum/plasma
- Automatic pipette 10 µL, 50 µL, 1 mL
- Disposable pipette tips
- Glass tubes
- DG Gel Sol
- Serigrup Diana/Reverse-Cyte 0.8%
- Centrifuge for DG Gel cards: DG Spin

PROCEDURE

1. Identify card
2. Dispense 50 µL of Serigrup Diana/Reverse-Cyte 0.8% into wells 7 and 8
3. Dispense 50 µL of patient's serum/plasma into wells 7 and 8
4. Dilute RBC sample to 5% with DG Gel Sol
5. Dispense 10 µL of RBC dilution into wells 1-6
6. Centrifuge for 9 min
7. Read results

DG Gel ABO/Rh + Kell (RT)

REFERENCE	PRESENTATION	PROFILE	NUMBER OF TESTS/CARD
210352	2 x 25 cards	A, B, AB, D^{VI-}, Kell, Ctl., $N/_{A1}$, $N/_{B}$	1

TECHNIQUE

Determination of the antigens of the ABO, Rh (D) and Kell systems and determination of the reverse ABO group

CLONES

Anti-A: Monoclonal anti-A (IgM antibodies of murine origin, clone DAM-1)

Anti-B: Monoclonal anti-B (IgM antibodies of murine origin, clone 9621 A8)

Anti-AB: Monoclonal anti-AB (mixture of IgM antibodies of murine origin, clones ES-15, LA-2, LB-2)

Anti-D^{VI-}: Monoclonal anti-D (IgM antibodies of human origin, clone P3x61)

Anti-Kell: Monoclonal anti-Kell (IgM antibodies of human origin, clone MS-56)

Ctl.: Buffered solution without antibodies (control microtube)

N: Buffered solution without antibodies (reverse group test)

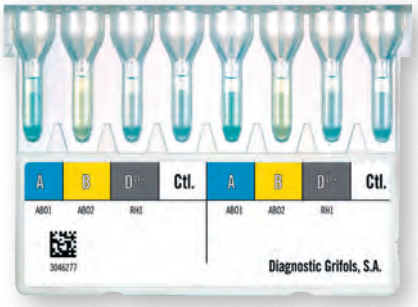
STORAGE

2-25°C

GROUP 2: BLOOD GROUP CONFIRMATION

Product registration and availability vary by country. Ask your local Grifols representative for more information.

DG Gel Confirm



MATERIAL REQUIRED

- Sample: red blood cells
- Automatic pipette 10 µL, 50 µL, 1 mL
- Disposable pipette tips
- Glass tubes
- DG Gel Sol
- Centrifuge for DG Gel cards: DG Spin

PROCEDURE

1. Identify card
2. Dilute RBC sample to 5% with DG Gel Sol
3. Dispense 10 µL of RBC dilution into wells 1-4 or 5-8
4. Centrifuge for 9 min
5. Read results

DG Gel Confirm

REFERENCE	PRESENTATION	PROFILE	NUMBER OF TESTS/CARD
210339	2 x 25 cards	A, B, D^{VI+}, Ctl., A, B, D^{VI+}, Ctl.	2

TECHNIQUE

Confirmation of the blood groups of the ABO and Rh (D) systems in donors

CLONES

Anti-A: Monoclonal anti-A (mixture of IgM and IgG antibodies of murine origin, clones 16243 G2 and 16247 E6)

Anti-B: Monoclonal anti-B (IgM antibodies of murine origin, clone 9621 A8)

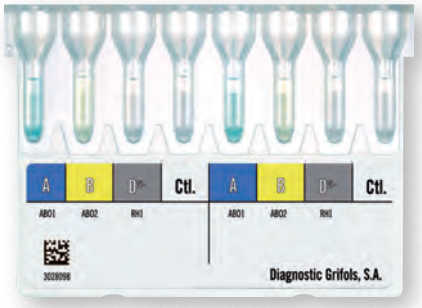
Anti-D^{VI+}: Monoclonal anti-D (mixture of IgG and IgM antibodies of human origin, clones P3x290, P3x35, P3x61 and P3x21223 B10). This anti-D monoclonal reagent detects weak D and partial variants of the D antigen, including the D^{VI} variant

Ctl.: Buffered solution without antibodies (control well)

STORAGE

2-8°C

DG Gel Confirm P



MATERIAL REQUIRED

- Sample: red blood cells
- Automatic pipette 10 µL, 50 µL, 1 mL
- Disposable pipette tips
- Glass tubes
- DG Gel Sol
- Centrifuge for DG Gel cards: DG Spin

PROCEDURE

1. Identify card
2. Dilute RBC sample to 5% with DG Gel Sol
3. Dispense 10 µL of RBC dilution into wells 1-4 or 5-8
4. Centrifuge for 9 min
5. Read results

DG Gel Confirm P

REFERENCE	PRESENTATION	PROFILE	NUMBER OF TESTS/CARD
210351	2 x 25 cards	A, B, D^{VI-}, Ctl., A, B, D^{VI-}, Ctl.	2

TECHNIQUE

Confirmation of the blood groups of the ABO and Rh (D) systems in patients

CLONES

Anti-A: Monoclonal anti-A (IgM antibodies of murine origin, clone Birma-1)

Anti-B: Monoclonal anti-B (IgM antibodies of murine origin, clone LB-2)

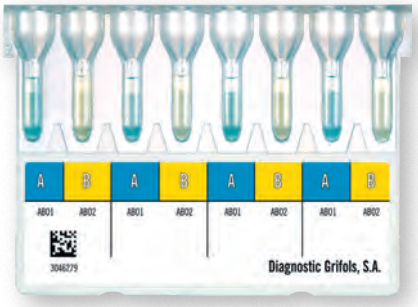
Anti-D^{VI-}: Monoclonal anti-D (IgM antibodies of human origin, clone MS-201)

Ctl.: Buffered solution without antibodies (control well)

STORAGE

2-25°C

DG Gel AB (x4)



MATERIAL REQUIRED

- Sample: red blood cells
- Automatic pipette 10 µL, 50 µL, 1 mL
- Disposable pipette tips
- Glass tubes
- DG Gel Sol
- Centrifuge for DG Gel cards: DG Spin

PROCEDURE

1. Identify card
2. Dilute RBC sample to 5% with DG Gel Sol
3. Dispense 10 µL of RBC dilution into wells 1-2, 3-4, 5-6 or 7-8
4. Centrifuge for 9 min
5. Read results

DG Gel AB (x4)

REFERENCE	PRESENTATION	PROFILE	NUMBER OF TESTS/CARD
210346	2 x 25 cards	4 x (A, B)	4

TECHNIQUE

Confirmation of the blood groups of the ABO system

CLONES

Anti-A: Monoclonal anti-A (mixture of IgM and IgG antibodies of murine origin, clones 16243 G2 and 16247 E6)

Anti-B: Monoclonal anti-B (IgM antibodies of murine origin, clone 9621 A8)

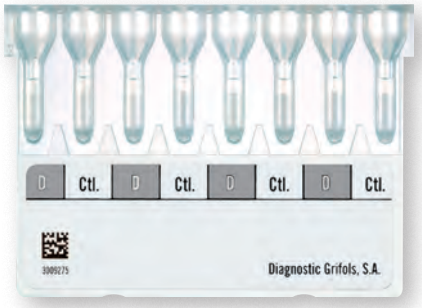
STORAGE

2-25°C

GROUP 3: RH PHENOTYPE + KELL DETERMINATION

Product registration and availability vary by country. Ask your local Grifols representative for more information.

DG Gel Anti-D



MATERIAL REQUIRED

- Sample: red blood cells
- Automatic pipette 10 µL, 50 µL, 1 mL
- Disposable pipette tips
- Glass tubes
- DG Gel Sol
- Centrifuge for DG Gel cards: DG Spin

PROCEDURE

1. Identify card
2. Dilute RBC sample to 5% with DG Gel Sol
3. Dispense 10 µL of RBC dilution into wells 1-2, 3-4, 5-6 or 7-8
4. Centrifuge for 9 min
5. Read results

DG Gel Anti-D

REFERENCE	PRESENTATION	PROFILE	NUMBER OF TESTS/CARD
210341	1 x 25 cards	4 x (D^{VI+}, Ctl.)	4

TECHNIQUE

Determination of the Rh (D)

CLONES

Anti-D^{VI+}: Monoclonal anti-D (mixture of IgG and IgM antibodies of human origin, clones P3x290, P3x35, P3x61 and P3x21223 B10). This anti-D monoclonal reagent detects weak D and partial variants of the D antigen, including the D^{VI} variant

Ctl.: Buffered solution without antibodies (control well)

STORAGE

2-8°C

DG Gel Rh Pheno

MATERIAL REQUIRED

- Sample: red blood cells
- Automatic pipette 10 µL, 50 µL, 1 mL
- Disposable pipette tips
- Glass tubes
- DG Gel Sol
- Centrifuge for DG Gel cards: DG Spin

PROCEDURE

1. Identify card
2. Dilute RBC sample to 5% with DG Gel Sol
3. Dispense 10 µL of RBC dilution into wells 1-4 or 5-8
4. Centrifuge for 9 min
5. Read results

DG Gel Rh Pheno

REFERENCE	PRESENTATION	PROFILE	NUMBER OF TESTS/CARD
210349	2 x 25 cards	C, E, c, e, C, E, c, e	2

TECHNIQUE

Determination of the antigens of the Rh system

CLONES

Anti-C: Monoclonal anti-C (IgM antibodies of human origin, clone MS-24)

Anti-E: Monoclonal anti-E (IgM antibodies of human origin, clone MS-260)

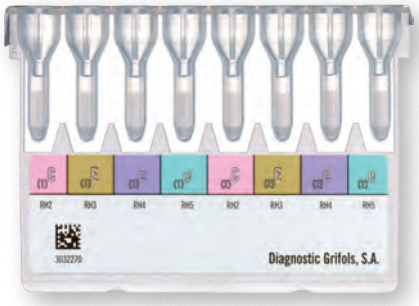
Anti-c: Monoclonal anti-c (IgM antibodies of human origin, clone MS-33)

Anti-e: Monoclonal anti-e (mixture of IgM antibodies of human origin, clones MS-21, MS-16 and MS-63)

STORAGE

2-25°C

DG Gel Double Pheno



MATERIAL REQUIRED

- Sample: red blood cells
- Automatic pipette 10 µL, 50 µL, 1 mL
- Disposable pipette tips
- Glass tubes
- DG Gel Sol
- Centrifuge for DG Gel cards: DG Spin

PROCEDURE

1. Identify card
2. Dilute RBC sample to 5% with DG Gel Sol
3. Dispense 10 µL of RBC dilution into all wells
4. Centrifuge for 9 min
5. Read results

DG Gel Double Pheno

REFERENCE	PRESENTATION	PROFILE	NUMBER OF TESTS/CARD
210382	2 x 25 cards	$_{(1)}$C, $_{(1)}$E, $_{(1)}$c, $_{(1)}$e, $_{(2)}$C, $_{(2)}$E, $_{(2)}$c, $_{(2)}$e	1

TECHNIQUE

Double determination of the antigens of the Rh system

CLONES

Anti-$_{(1)}$C: Monoclonal anti-C (IgM antibodies of human origin, clone MS-24)

Anti-$_{(1)}$E: Monoclonal anti-E (IgM antibodies of human origin, clone MS-260)

Anti-$_{(1)}$c: Monoclonal anti-c (IgM antibodies of human origin, clone 951)

Anti-$_{(1)}$e: Monoclonal anti-e (mixture of IgM antibodies of human origin, clones MS-21, MS-63 and MS-16)

Anti-$_{(2)}$C: Monoclonal anti-C (IgM antibodies of human origin, clone P3x25513G8)

Anti-$_{(2)}$E: Monoclonal anti-E (IgM antibodies of human origin, clone 906)

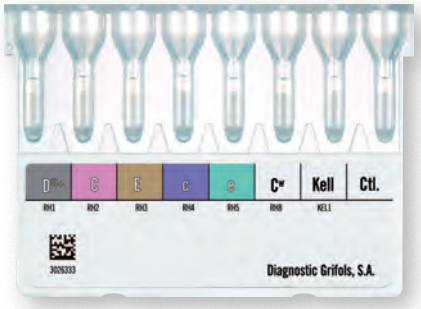
Anti-$_{(2)}$c: Monoclonal anti-c (IgM antibodies of human origin, clone MS-33)

Anti-$_{(2)}$e: Monoclonal anti-e (mixture of IgM antibodies of human origin, clones MS-63 and MS-16)

STORAGE

2-25°C

DG Gel Rh Pheno + Kell



MATERIAL REQUIRED

- Sample: red blood cells
- Automatic pipette 10 µL, 50 µL, 1 mL
- Disposable pipette tips
- Glass tubes
- DG Gel Sol
- Centrifuge for DG Gel cards: DG Spin

PROCEDURE

1. Identify card
2. Dilute RBC sample to 5% with DG Gel Sol
3. Dispense 10 µL of RBC dilution into all wells
4. Centrifuge for 9 min
5. Read results

DG Gel Rh Pheno + Kell

REFERENCE	PRESENTATION	PROFILE	NUMBER OF TESTS/CARD
210350	2 x 25 cards	D^{VI+}, C, E, c, e, C^{w}, Kell, Ctl.	1

TECHNIQUE

Determination of the antigens of the Rh and Kell systems

CLONES

Anti-D^{VI+}: Monoclonal anti-D (mixture of IgM antibodies of human origin, clones RUM-1 and ESD-1M).
This anti-D monoclonal reagent detects weak D and partial variants of the D antigen, including the D^{VI} variant

Anti-C: Monoclonal anti-C (IgM antibodies of human origin, clone MS-24)

Anti-E: Monoclonal anti-E (IgM antibodies of human origin, clone 906)

Anti-c: Monoclonal anti-c (IgM antibodies of human origin, clone MS-33)

Anti-e: Monoclonal anti-e (mixture of IgM antibodies of human origin, clones MS-21, MS-63 and MS-16)

Anti- C^{w} : Monoclonal anti-C w (IgM antibodies of human origin, clone MS-110)

Anti-Kell: Monoclonal anti-Kell (IgM antibodies of human origin, clone MS-56)

Ctl.: Buffered solution without antibodies (control well)

STORAGE

2-25°C

GROUP 4: UNEXPECTED ANTIBODY INVESTIGATION

Product registration and availability vary by country. Ask your local Grifols representative for more information.

DG Gel Coombs

PROCEDURE

- Screening of unexpected antibodies
- Identification of unexpected antibodies
- Crossmatch tests
- Autocontrol
- Direct Coombs

MATERIAL REQUIRED

- Samples: red blood cells and serum/plasma
- Automatic pipette 10 µL, 25 µL, 50 µL, 1 mL
- Disposable pipette tips
- Glass tubes
- DG Gel Sol
- Serigrup Diana/Reverse-Cyte 0.8%
- Serascan Diana/Sero-Cyte 0.8%
- Indentisera Diana/Screen-Cyte 0.8%/ Data-Cyte Plus 0.8%
- Incubator for DG Gel cards: DG Therm
- Centrifuge for DG Gel cards: DG Spin

Procedure for the DG Gel Coombs

REFERENCE	PRESENTATION	PROFILE	NUMBER OF TESTS/CARD
210342	2 x 25 cards	8 x (AHG)	Depending on the test

TECHNIQUE

Indirect Coombs and direct Coombs tests. The indirect Coombs tests include: screening and identification of unexpected antibodies, crossmatch tests, autocontrol and red blood cell typing

CLONES

AHG: Coombs, buffered low ionic strength solution (LISS) with polyspecific
anti-human globulin. Mixture of rabbit polyclonal anti-IgG and monoclonal anti-C3d antibodies (IgM antibodies of murine origin, clone 12011 D10)

STORAGE

2-25°C

Procedure for the DG Gel Coombs

SCREENING
OF UNEXPECTED ANTIBODIES

1. Identify

2. Dispense 50 µL of reagent RBC into the corresponding wells (Serascan Diana 2, 3, 4 or Di^a/Sero-Cyte 0.8%/ Screen-Cyte 0.8%)

3. Dispense 25 µL of patient's serum/ plasma in the same wells

4. Incubate 15 min at 37°C

5. Centrifuge for 9 min

6. Read results

IDENTIFICATION
OF UNEXPECTED ANTIBODIES

1. Identify (2 cards)

2. Dispense 50 µL of reagent RBC into the corresponding wells (Identisera Diana/ Identisera Diana Extend/Data-Cyte Plus 0.8%/Data-Cyte Plus Di^a 0.8%)

3. Dispense 25 µL of patient's serum/ plasma in the same wells

4. Incubate 15 min at 37°C

5. Centrifuge for 9 min

6. Read results

Procedure for the DG Gel Coombs

CROSSMATCH TEST

1. Identify card
2. Dilute RBC to 1% with DG Gel Sol Major CT: donor´s RBC Minor CT: recipient´s RBC
3. Dispense 50 µL of RBC dilution in the corresponding wells
4. Dispense 25 µL of serum/plasma into the same wells Major CT: recipient´s serum Minor CT: donor´s serum
5. Incubate 15 min at 37°C
6. Centrifuge for 9 min
7. Read results

AUTOCONTROL

1. Identify card
2. Dilute patient's RBC to 1% with DG Gel Sol
3. Dispense 50 µL of RBC dilution in the corresponding wells
4. Dispense 25 µL of patient's serum/plasma in the same wells
5. Incubate 15 min at 37°C
6. Centrifuge for 9 min
7. Read results

DIRECT COOMBS

1. Identify card
2. Dilute patient's RBC to 1% with DG Gel Sol
3. Dispense 50 µL of RBC dilution in the corresponding wells
4. Centrifuge for 9 min
5. Read results

DG Gel Neutral

PROCEDURE

- Screening of unexpected antibodies
- Identification of unexpected antibodies
- Crossmatch tests
- Autocontrol
- Determination of the reverse ABO group

MATERIAL REQUIRED

- Samples: red blood cells and serum/plasma
- Automatic pipette 10 µL, 25 µL, 50 µL, 1 mL
- Disposable pipette tips
- Glass tubes
- DG Gel Sol
- Serigrup Diana/Reverse-Cyte 0.8%
- Serascan Diana*/Sero-Cyte 0.8%
- Indentisera Diana*/Screen-Cyte* 0.8%/ Data-Cyte Plus* 0.8%
- Incubator for DG Gel cards: DG Therm
- Centrifuge for DG Gel cards: DG Spin

*And the papainized version.

Procedure for the DG Gel Neutral

REFERENCE	PRESENTATION	PROFILE	NUMBER OF TESTS/CARD
210343	2 x 25 cards	8 x (N)	Depending on the test

TECHNIQUE

Physical medium for saline and enzymatic tests. The saline and enzymatic technique tests include: screening and identification of unexpected antibodies, crossmatch tests, autocontrol, red blood cell typing and determination of the reverse ABO group

CLONES

N: Buffered solution without antibodies (neutral wells)

STORAGE

2-25ºC

Procedure for the DG Gel Neutral

SCREENING
OF UNEXPECTED ANTIBODIES

1. Identify card

2. Dispense 50 µL of Reagent RBC into the corresponding wells (Serascan Diana 2, 3, 4 or Di^a/Serascan Diana 2, 3, or 4/ Serascan Diana P 2, 3/Sero-Cyte 0.8%/ Screen-Cyte P 0.8%/Screen-Cyte 0.8%)

3. Dispense 25 µL of patient's serum/plasma in the same wells

4. Incubate 15 min at 37°C, room temperature or 2-8°C (saline technique)/37°C (enzymatic technique)*

5. Centrifuge for 9 min

6. Read results

IDENTIFICATION
OF UNEXPECTED ANTIBODIES

1. Identify (2 cards)

2. Dispense 50 µL of Reagent RBC into the corresponding wells (Identisera Diana/ Identisera Diana P/ Identisera Diana Extend/Identisera Diana Extend/Data-Cyte Plus 0.8%/Data-Cyte Plus P 0.8%)

3. Dispense 25 µL of patient's serum/plasma in the same wells

4. Incubate 15 min at 37°C, room temperature or 2-8°C (saline technique)/37°C (enzymatic technique)*

5. Centrifuge for 9 min

6. Read results

* For the performance of screening and identification of unexpected antibodies in enzymatic techniques use Serascan Diana P or Screen-Cyte P 0.8% and Identisera Diana P/Identisera Diana Extend P or Data-Cyte Plus P 0.8% reagents respectively.

Procedure for the DG Gel Neutral

CROSSMATCH TEST

1. Identify card
2. Dilute RBC to 1% with DG Gel Sol Major CT: donor´s RBC Minor CT: recipient´s RBC
3. Dispense 50 µL of RBC dilution in the corresponding wells
4. Dispense 25 µL of serum/plasma into the same wells Major CT: recipient´s serum Minor CT: donor´s serum
5. Incubate 15 min at 37°C, room temperature or 2-8°C (saline technique)/37°C (enzymatic technique)*
6. Centrifuge for 9 min
7. Read results

AUTOCONTROL

1. Identify card
2. Dilute patient's RBC to 1% with DG Gel Sol
3. Dispense 50 µL of RBC dilution in the corresponding wells
4. Dispense 25 µL of patient's serum/plasma in the same wells
5. Incubate 15 min at 37°C, room temperature or 2-8°C (saline technique)/37°C (enzymatic technique)*
6. Centrifuge for 9 min
7. Read results

DETERMINATION OF THE REVERSE ABO GROUP

1. Identify card
2. Dispense 50 µL of the reagent RBC in the corresponding wells (Serigrup/Reverse-Cyte)
3. Dispense 50 µL of patient's serum/plasma in the same wells
4. Centrifuge for 9 min
5. Read results

* The test method described in the instructions for using of DG-Papain must be followed for the performance of enzymatic techniques of the crossmatch and autocontrol tests, including two extra steps after dispensing the RBC dilution: Add 25 µL of DG-Papain, incubate for 10 minutes at 37°C. Then, dispense the corresponding serum/plasma.

DG Gel Neutral/Coombs

REFERENCE	PRESENTATION	PROFILE	NUMBER OF TESTS/CARD
210375	2 x 25 cards	N, N, N, N AHG, AHG AHG, AHG	Depending on the test

TECHNIQUE

Indirect, direct Coombs tests and physical medium for saline and enzymatic tests. The tests include: screening and identification of unexpected antibodies, crossmatch tests, autocontrol and red blood cell typing

CLONES

N: buffered solution without antibodies (neutral wells)

AHG: mixture of rabbit polyclonal anti-IgG and monoclonal anti-C3d (12011 D10 murine)

STORAGE

2-25°C

PROCEDURE

See DG Gel Neutral and DG Gel Coombs

DG Gel Anti-IgG

PROCEDURE

- Screening of unexpected antibodies
- Identification of unexpected antibodies
- Crossmatch tests
- Autocontrol
- Direct Coombs

MATERIAL REQUIRED

- Samples: red blood cells and serum/plasma
- Automatic pipette 10 µL, 25 µL, 50 µL, 1 mL
- Disposable pipette tips
- Glass tubes
- DG Gel Sol
- Serigrup Diana/Reverse-Cyte 0.8%
- Serascan Diana/Sero-Cyte 0.8%
- Indentisera Diana/Screen-Cyte 0.8%/ Data-Cyte Plus 0.8%
- Incubator for DG Gel cards: DG Therm
- Centrifuge for DG Gel cards: DG Spin

Procedure for the DG Gel Anti-IgG

REFERENCE	PRESENTATION	PROFILE	NUMBER OF TESTS/CARD
210344	2 x 25 cards	8 x (IgG)	Depending on the test

TECHNIQUE

Indirect Coombs and direct Coombs tests. The indirect Coombs tests include: screening and identification of unexpected antibodies, crossmatch tests and autocontrol

CLONES

Anti-IgG: Rabbit polyclonal anti-IgG in buffered low ionic strength solution (LISS)

STORAGE

2-25ºC

Procedure for the DG Gel Anti-IgG

SCREENING
OF UNEXPECTED ANTIBODIES

1. Identify card

2. Dispense 50 µL of reagent RBC into the corresponding wells (Serascan Diana 2, 3, 4 or Di^{a}/Sero-Cyte 0.8%/ Screen-Cyte 0.8%)

3. Dispense 25 µL of patient's serum/ plasma in the same wells

4. Incubate 15 min at 37°C

5. Centrifuge for 9 min

6. Read results

IDENTIFICATION
OF UNEXPECTED ANTIBODIES

1. Identify (2 cards)

2. Dispense 50 µL of reagent RBC into the corresponding wells (Identisera Diana/ Identisera Diana Extend/Data-Cyte Plus 0.8%/Data-Cyte Plus Di^{a} 0.8%)

3. Dispense 25 µL of patient's serum/ plasma in the same wells

4. Incubate 15 min at 37°C

5. Centrifuge for 9 min

6. Read results

Procedure for the DG Gel Anti-IgG

CROSSMATCH TEST

1. Identify card
2. Dilute RBC to 1% with DG Gel Sol Major CT: donor´s RBC Minor CT: recipient´s RBC
3. Dispense 50 µL of RBC dilution in the corresponding wells
4. Dispense 25 µL of serum/plasma into the same wells Major CT: recipient´s serum Minor CT: donor´s serum
5. Incubate 15 min at 37°C
6. Centrifuge for 9 min
7. Read results

AUTOCONTROL

1. Identify card
2. Dilute patient's RBC to 1% with DG Gel Sol
3. Dispense 50 µL of RBC dilution in the corresponding wells
4. Dispense 25 µL of patient's serum/plasma in the same wells
5. Incubate 15 min at 37°C
6. Centrifuge for 9 min
7. Read results

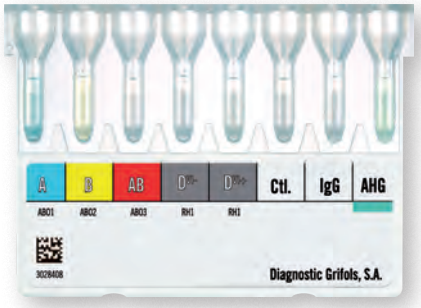
DIRECT COOMBS

1. Identify card
2. Dilute patient's RBC to 1% with DG Gel Sol
3. Dispense 50 µL of RBC dilution in the corresponding wells
4. Centrifuge for 9 min
5. Read results

GROUP 5: SPECIAL TESTS

Product registration and availability vary by country. Ask your local Grifols representative for more information.

DG Gel Newborn



MATERIAL REQUIRED

- Samples: red blood cells and serum/plasma
- Automatic pipette 10 µL, 50 µL, 1 mL
- Disposable pipette tips
- Glass tubes
- DG Gel Sol
- Serigrup Diana/Reverse-Cyte 0.8%
- Centrifuge for DG Gel cards: DG Spin

PROCEDURE

1. Identify card
2. Dilute RBC sample to 1% with DG Gel Sol
3. Dispense 50 µL of RBC dilution in all wells
4. Centrifuge for 9 min
5. Read results

DG Gel Newborn

REFERENCE	PRESENTATION	PROFILE	NUMBER OF TESTS/CARD
210353	2 x 25 cards	A, B, AB, D^{VI-}, D^{VI+}, Ctl., IgG, AHG	1

TECHNIQUE

Determination of the antigens of the ABO and Rh (D) systems and direct Coombs test in newborns

CLONES

Anti-A: Monoclonal anti-A (IgM antibodies of murine origin, clone DAM-1)

Anti-B: Monoclonal anti-B (IgM antibodies of murine origin, clone 9621 A8)

Anti-AB: Monoclonal anti-AB (mixture of IgM antibodies of murine origin, clones LA-2, LB-2 and ES-15)

Anti-D^{VI-}: Monoclonal anti-D (IgM antibodies of human origin, clone P3x61)

Anti-D^{VI+}: Monoclonal anti-D (mixture of IgM antibodies of human origin, clones RUM-1 and ESD-1M). This anti-D monoclonal reagent detects weak D and partial variants of the D antigen, including the D^{VI} variant

Ctl.: Buffered solution without antibodies (control microtube)

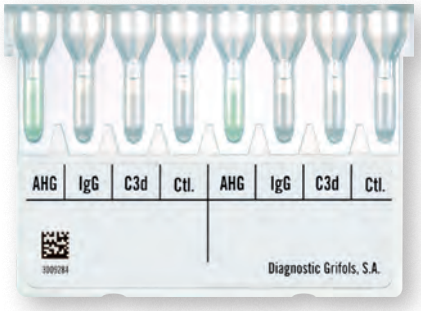
Anti-IgG: Rabbit polyclonal anti-IgG in buffered low ionic strength solution (LISS)

AHG: Coombs, buffered low ionic strength solution (LISS) with polyspecific anti-human globulin. Mixture of rabbit polyclonal anti-IgG and monoclonal anti-C3d antibodies (IgM antibodies of murine origin, clone 12011 D10)

STORAGE

2-25°C

DG Gel DC Scan



MATERIAL REQUIRED

- Samples: red blood cells and serum/plasma
- Automatic pipette 10 µL, 50 µL, 1 mL
- Disposable pipette tips
- Glass tubes
- DG Gel Sol
- Centrifuge for DG Gel cards: DG Spin

PROCEDURE

1. Identify card
2. Dilute RBC sample to 1% with DG Gel Sol
3. Dispense 50 µL of RBC dilution in wells 1-4 or 5-8
4. Centrifuge for 9 min
5. Read results

DG Gel DC Scan

REFERENCE	PRESENTATION	PROFILE	NUMBER OF TESTS/CARD
210345	1 x 25 cards	2 x (AHG, IgG, C3d, Ctl.)	2

TECHNIQUE

Evaluation of positive direct Coombs samples. It allows differentiating red blood cells sensitized in vivo by IgG immunoglobulins or the C3d complement fraction.

CLONES

AHG: Coombs, buffered low ionic strength solution (LISS) with polyspecific anti-human globulin. Mixture of rabbit polyclonal anti-IgG and monoclonal anti-C3d antibodies (IgM antibodies of murine origin, clone 12011 D10)

Anti-IgG: Rabbit polyclonal anti-IgG in buffered low ionic strength solution (LISS)

Anti-C3d: Monoclonal anti-C3d (IgM antibodies of murine origin, clone 12011 D10)

Ctl.: Buffered solution without antibodies (control well)

STORAGE

2-8ºC

DG Gel CT

MATERIAL REQUIRED

- Samples: red blood cells and serum/plasma
- Automatic pipette 10 µL, 25 µL, 50 µL, 1 mL
- Disposable pipette tips
- Glass tubes DG Gel Sol
- Serascan Diana/Serascan Diana P/Sero-Cyte 0.8%/ Screen-Cyte 0.8/Screen-Cyte P 0.8%
- Incubator for DG Gel cards: DG Therm
- Centrifuge for DG Gel cards: DG Spin

PROCEDURE*: ABO/RH GROUP CONFIRMATION

1. Identify card
2. Dilute RBC sample to 1% with DG Gel Sol
3. Dispense 50 µL of RBC dilution in all wells 1-4
4. Centrifuge for 9 min
5. Read results

* Regarding wells 5-8, see DG Gel Neutral and DG Gel Coombs procedures (there are other possible procedures depending on the tests performed)

DG Gel CT

REFERENCE	PRESENTATION	PROFILE	NUMBER OF TESTS/CARD
210374	2 x 25 cards	A, B, D^{VI+}, Ctl., N, N, AHG, AHG	1

TECHNIQUE

Confirmation of the blood groups of the ABO and Rh (D) systems, ABO/Rh (D) isogroup compatibility test, screening of unexpected antibodies*, crossmatch* and autocontrol

CLONES

Anti-A: Monoclonal anti-A (mixture of IgM and IgG antibodies of murine origin, clones 16243 G2 and 16247 E6)

Anti-B: Monoclonal anti-B (IgM antibodies of murine origin, clone 9621 A8)

Anti-D^{VI+} : Monoclonal anti-D (mixture of IgG and IgM antibodies of human origin, clones P3x290, P3x35, P3x61, P3x21223 B10). This anti-D monoclonal reagent detects weak D and partial variants of the D antigen, including the D^{VI} variant

Ctl.: Buffered solution without antibodies (control microtube)

N: Buffered solution without antibodies (neutral microtubes)

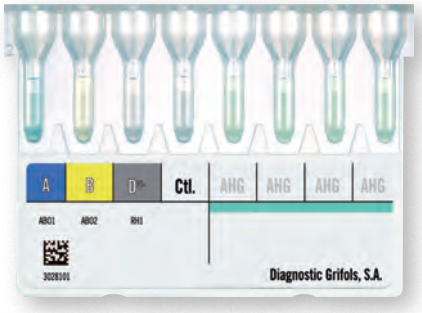
AHG: Coombs, buffered low ionic strength solution (LISS) with polyspecific anti-human globulin. Mixture of rabbit polyclonal anti-IgG and monoclonal anti-C3d antibodies (IgM antibodies of murine origin, clone 12011 D10)

STORAGE

2-8°C

* Saline, enzymatic and LISS-Coombs technique

DG Gel T/S Poly



MATERIAL REQUIRED

- Samples: red blood cells and serum/plasma
- Automatic pipette 10 µL, 25 µL, 50 µL, 1 mL
- Disposable pipette tips
- Glass tubes
- DG Gel Sol
- Serascan Diana/Serascan Diana P/Sero-Cyte 0.8%/ Screen-Cyte 0.8/Screen-Cyte P 0.8%
- Incubator for DG Gel cards: DG Therm
- Centrifuge for DG Gel cards: DG Spin

PROCEDURE*: ABO/RH GROUP CONFIRMATION

1. Identify card
2. Dilute RBC sample to 1% with DG Gel Sol
3. Dispense 50 µL of RBC dilution in wells 1-4
4. Centrifuge for 9 min
5. Read results

* Regarding wells 5-8, see DG Gel Coombs procedures (there are other possible procedures depending on the test performed)

DG Gel T/S Poly

REFERENCE	PRESENTATION	PROFILE	NUMBER OF TESTS/CARD
210377	2 x 25 cards	A, B, D^{VI-}, Ctl., AHG, AHG, AHG, AHG	1

TECHNIQUE

Confirmation of the blood groups of the ABO and Rh (D) systems and Indirect Coombs tests. The Indirect Coombs tests include screening of unexpected antibodies, crossmatch tests, and autocontrol.

CLONES

Anti-A: Monoclonal anti-A (IgM antibodies of murine origin, clone DAM-1)

Anti-B: Monoclonal anti-B (IgM antibodies of murine origin, clone 9621 A8)

Anti-D^{VI-}: Monoclonal anti-D (IgM antibodies of human origin, clone P3x61)

Ctl.: Buffered solution without antibodies (control well)

AHG: Coombs, buffered low ionic strength solution (LISS) with polyspecific anti-human globulin. Mixture of rabbit polyclonal anti-IgG and monoclonal anti-C3d antibodies (IgM antibodies of murine origin, clone 12011 D10)

STORAGE

2-25°C

RARE ANTIGEN TYPING

Product registration and availability vary by country. Ask your local Grifols representative for more information.

Anti-H Mono-Type*

MATERIAL REQUIRED

- Samples: red blood cells
- Automatic pipette 50 µL, 1 mL
- Disposable tips
- Glass tubes
- DG Gel Sol
- DG Gel Neutral card
- Anti-H Mono-Type
- Centrifuge for DG Gel cards: DG Spin

PROCEDURE

1. Identify card
2. Dilute RBC sample to 1% with DG Gel Sol
3. Dispense 50 µL of RBC dilution into well 1
4. Dispense 50 µL of antisera into well 1
5. Incubation RT for 10 min**
6. Centrifuge for 9 min
7. Read results

REFERENCE	PRODUCT	PRESENTATION	ANTIBODY TYPE AND ORIGIN
213633	Anti-H Mono-Type	1 x 5 mL	Monoclonal murine IgM 10934C11

*Antisera reagent also validated for use in conventional techniques.
**15 minutes in the incubation performed by the DG Gel fully automated instruments.

Anti-A_1 Lectin*

MATERIAL REQUIRED

Samples: red blood cells
Automatic pipette 50 µL, 1 mL
Disposable tips
Glass tubes
DG Gel Sol
DG Gel Neutral card
Anti-A_1 Lectin
Centrifuge for DG Gel cards: DG Spin

PROCEDURE

1. Identify card
2. Dilute RBC sample to 1% with DG Gel Sol
3. Dispense 50 µL of RBC dilution into well 1
4. Dispense 50 µL of antisera into well 1
5. Incubation RT for 10 min**
6. Centrifuge for 9 min
7. Read results

REFERENCE	PRODUCT	PRESENTATION	ANTIBODY TYPE AND ORIGIN
213437	Anti-A_1 Lectin	1 x 5 mL	Lectin from Dolichos biflorus

*Antisera reagent also validated for use in conventional techniques.
**15 minutes in the incubation performed by the DG Gel fully automated instruments.

Anti-D IgG Mono-Type

MATERIAL REQUIRED

Samples: red blood cells
Automatic pipette 25 µL, 50 µL, 1 mL
Disposable tips
Glass tubes
DG Gel Sol
DG Gel Coombs card
Anti-D IgG Mono-Type
Incubator for DG Gel cards: DG Therm
Centrifuge for DG Gel cards: DG Spin

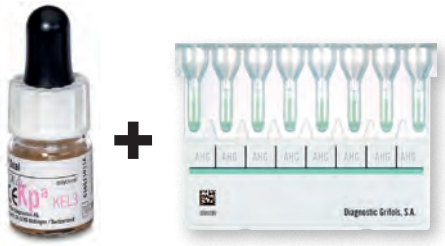
PROCEDURE

1. Identify card
2. Dilute RBC sample to 1% with DG Gel Sol
3. Dispense 50 µL of RBC dilution into well 1
4. Dispense 25 µL of antisera into well 1
5. Incubation 37°C for 10-15 min*
6. Centrifuge for 9 min
7. Read results

REFERENCE	PRODUCT	PRESENTATION	ANTIBODY TYPE AND ORIGIN
213005	Anti-D IgG Mono-Type	1 x 5 mL	Monoclonal murine/human IgG ESD1

*15 minutes in the incubation performed by the DG Gel fully automated instruments.

Anti-Kp^a Dual*



MATERIAL REQUIRED

Samples: red blood cells
Automatic pipette 25 µL, 50 µL, 1 mL
Disposable tips
Glass tubes
DG Gel Sol
DG Gel Coombs card
Anti-Kp^a Dual
Incubator for DG Gel cards: DG Therm
Centrifuge for DG Gel cards: DG Spin

PROCEDURE

1. Identify card
2. Dilute RBC sample to 1% with DG Gel Sol
3. Dispense 50 µL of RBC dilution into well 1
4. Dispense 25 µL of antisera into well 1
5. Incubation 37°C for 10-15 min**
6. Centrifuge for 9 min
7. Read results

REFERENCE	PRODUCT	PRESENTATION	ANTIBODY TYPE AND ORIGIN
213995	Anti-Kp^a Dual	1 x 5 mL	Polyclonal human

*Antisera reagent also validated for use in conventional techniques.
**15 minutes in the incubation performed by the DG Gel fully automated instruments.

Anti-Kp^b Dual*

MATERIAL REQUIRED

Samples: red blood cells
Automatic pipette 25 µL, 50 µL, 1 mL
Disposable tips
Glass tubes
DG Gel Sol
DG Gel Coombs card
Anti-Kp^b Dual
Incubator for DG Gel cards: DG Therm
Centrifuge for DG Gel cards: DG Spin

PROCEDURE

1. Identify card
2. Dilute RBC sample to 1% with DG Gel Sol
3. Dispense 50 µL of RBC dilution into well 1
4. Dispense 25 µL of antisera into well 1
5. Incubation 37°C for 10-15 min**
6. Centrifuge for 9 min
7. Read results

REFERENCE	PRODUCT	PRESENTATION	ANTIBODY TYPE AND ORIGIN
213996	Anti-Kp^b Dual	1 x 5 mL	Polyclonal human

*Antisera reagent also validated for use in conventional techniques.
**15 minutes in the incubation performed by the DG Gel fully automated instruments.

Anti-C^{w}

MATERIAL REQUIRED

Samples: red blood cells
Automatic pipette 25 µL, 50 µL, 1 mL
Disposable tips
Glass tubes
DG Gel Sol
DG Gel Neutral card
Anti-C^{w}
Centrifuge for DG Gel cards: DG Spin

PROCEDURE

1. Identify card
2. Dilute RBC sample to 0.8% with DG Gel Sol
3. Dispense 50 µL of RBC dilution into well 1
4. Dispense 25 µL of antisera into well 1*
5. Centrifuge for 9 min
6. Read results

REFERENCE	PRODUCT	PRESENTATION	ANTIBODY TYPE AND ORIGIN
213140	Anti-C^{w}	1 x 5 mL	Monoclonal human IgM MS-110

*It is also possible to use 10 µL of antisera. See the Instrucions for Use for further details.

Anti-Le^a

MATERIAL REQUIRED

Samples: red blood cells
Automatic pipette 25 µL, 50 µL, 1 mL
Disposable tips
Glass tubes
DG Gel Sol
DG Gel Neutral card
Anti-Le^a
Centrifuge for DG Gel cards: DG Spin

PROCEDURE

1. Identify card
2. Dilute RBC sample to 0.8% with DG Gel Sol
3. Dispense 50 µL of RBC dilution into well 1
4. Dispense 25 µL of antisera into well 1
5. Centrifuge for 9 min
6. Read results

REFERENCE	PRODUCT	PRESENTATION	ANTIBODY TYPE AND ORIGIN
213217	Anti-Le^a	1 x 5 mL	Monoclonal murine IgA GA2

Anti-Le^b

MATERIAL REQUIRED

Samples: red blood cells
Automatic pipette 25 µL, 50 µL, 1 mL
Disposable tips
Glass tubes
DG Gel Sol
DG Gel Neutral card
Anti-Le^b
Centrifuge for DG Gel cards: DG Spin

PROCEDURE

1. Identify card
2. Dilute RBC sample to 0.8% with DG Gel Sol
3. Dispense 50 µL of RBC dilution into well 1
4. Dispense 25 µL of antisera into well 1
5. Centrifuge for 9 min
6. Read results

REFERENCE	PRODUCT	PRESENTATION	ANTIBODY TYPE AND ORIGIN
213219	Anti-Le^b	1 x 5 mL	Monoclonal murine IgM LEB1

Anti-K

MATERIAL REQUIRED

- Samples: red blood cells
- Automatic pipette 25 µL, 50 µL, 1 mL
- Disposable tips
- Glass tubes
- DG Gel Sol
- DG Gel Coombs card
- Anti-K
- Centrifuge for DG Gel cards: DG Spin

PROCEDURE

1. Identify card
2. Dilute RBC sample to 0.8% with DG Gel Sol
3. Dispense 50 µL of RBC dilution into well 1
4. Dispense 25 µL of antisera into well 1*
5. Centrifuge for 9 min
6. Read results

REFERENCE	PRODUCT	PRESENTATION	ANTIBODY TYPE AND ORIGIN
213176	Anti-K	1 x 5 mL	Monoclonal human IgM MS-56

*It is also possible to use 10 µL of antisera. See the Instrucions for Use for further details.

Anti-K Mono-Type (2)*

MATERIAL REQUIRED

Samples: red blood cells
Automatic pipette 25 µL, 50 µL, 1 mL
Disposable tips
Glass tubes
DG Gel Sol
DG Gel Neutral card
Anti-K Mono-Type
Centrifuge for DG Gel cards: DG Spin

PROCEDURE

1. Identify card
2. Dilute RBC sample to 0.8% with DG Gel Sol
3. Dispense 50 µL of RBC dilution into well 1
4. Dispense 25 µL of antisera into well 1**
5. Centrifuge for 9 min
6. Read results

REFERENCE	PRODUCT	PRESENTATION	ANTIBODY TYPE AND ORIGIN
213557	Anti-K Mono-Type	1 x 5 mL	Monoclonal human IgM AEK-4

*Antisera reagent also validated for use in conventional techniques.
**It is also possible to use 10 µL of antisera. See the Instrucions for Use for further details.

Anti-k (cellano) Mono-Type*

MATERIAL REQUIRED

Samples: red blood cells
Automatic pipette 25 µL, 50 µL, 1 mL
Disposable tips
Glass tubes
DG Gel Sol
DG Gel Coombs card
Anti-k (cellano) Mono-Type
Incubator for DG Gel cards: DG Therm
Centrifuge for DG Gel cards: DG Spin

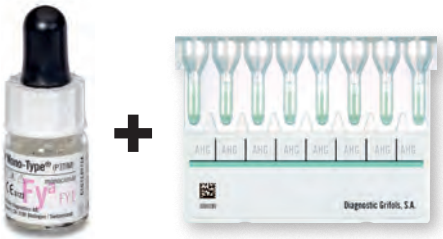
PROCEDURE

1. Identify card
2. Dilute RBC sample to 1% with DG Gel Sol
3. Dispense 50 µL of RBC dilution into well 1
4. Dispense 25 µL of antisera into well 1
5. Incubation 37°C for 10 min**
6. Centrifuge for 9 min
7. Read results

REFERENCE	PRODUCT	PRESENTATION	ANTIBODY TYPE AND ORIGIN
213209	Anti-k (cellano) Mono-Type	1 x 5 mL	Monoclonal human IgG P3A1180L67

*Antisera reagent also validated for use in conventional techniques.
**15 minutes in the incubation performed by the DG Gel fully automated instruments.

Anti-Fy^{a} Mono-Type*



MATERIAL REQUIRED

Samples: red blood cells
Automatic pipette 25 µL, 50 µL, 1 mL
Disposable tips
Glass tubes
DG Gel Sol
DG Gel Coombs card
Anti-Fy^{a} Mono-Type
Incubator for DG Gel cards: DG Therm
Centrifuge for DG Gel cards: DG Spin

PROCEDURE

1. Identify card
2. Dilute RBC sample to 1% with DG Gel Sol
3. Dispense 50 µL of RBC dilution into well 1
4. Dispense 25 µL of antisera into well 1
5. Incubation 37°C for 10 min**
6. Centrifuge for 9 min
7. Read results

REFERENCE	PRODUCT	PRESENTATION	ANTIBODY TYPE AND ORIGIN
213208	Anti-Fy^{a} Mono-Type	1 x 5 mL	Monoclonal human IgG P3TIM

*Antisera reagent also validated for use in conventional techniques.
**15 minutes in the incubation performed by the DG Gel fully automated instruments.

Anti-Fy^{a} for DG Gel

MATERIAL REQUIRED

Samples: red blood cells
Automatic pipette 25 µL, 50 µL, 1 mL
Disposable tips
Glass tubes
DG Gel Sol
DG Gel Coombs card
Anti-Fy^{a} for DG Gel
Incubator for DG Gel cards: DG Therm
Centrifuge for DG Gel cards: DG Spin

PROCEDURE

1. Identify card
2. Dilute RBC sample to 1% with DG Gel Sol
3. Dispense 50 µL of RBC dilution into well 1
4. Dispense 25 µL of antisera into well 1
5. Incubation 37°C for 10 min
6. Centrifuge for 9 min
7. Read results

REFERENCE	PRODUCT	PRESENTATION	ANTIBODY TYPE AND ORIGIN
213206	Anti-Fy^{a} for DG Gel	1 x 5 mL	Polyclonal human

Anti-Fy^{b} for DG Gel

MATERIAL REQUIRED

Samples: red blood cells
Automatic pipette 25 µL, 50 µL, 1 mL
Disposable tips
Glass tubes
DG Gel Sol
DG Gel Coombs card
Anti-Fy^{b} for DG Gel
Incubator for DG Gel cards: DG Therm
Centrifuge for DG Gel cards: DG Spin

PROCEDURE

1. Identify card
2. Dilute RBC sample to 1% with DG Gel Sol
3. Dispense 50 µL of RBC dilution into well 1
4. Dispense 25 µL of antisera into well 1
5. Incubation 37°C for 10 min
6. Centrifuge for 9 min
7. Read results

REFERENCE	PRODUCT	PRESENTATION	ANTIBODY TYPE AND ORIGIN
213207	Anti-Fy^{b} for DG Gel	1 x 5 mL	Polyclonal human

Anti-Jk^a for DG Gel

MATERIAL REQUIRED

Samples: red blood cells
Automatic pipette 10 µL, 25 µL, 50 µL, 1 mL
Disposable tips
Glass tubes
DG Gel Sol
DG Gel Neutral card
Bromelase 30
Anti-Jk^a for DG Gel
Incubator for DG Gel cards: DG Therm
Centrifuge for DG Gel cards: DG Spin

PROCEDURE

1. Identify card
2. Dilute RBC sample to 1% with DG Gel Sol
3. Dispense 50 µL of RBC dilution into well 1
4. Dispense 25 µL of Bromelase 30 into well 1
5. Incubation 37°C for 10 min
6. Dispense 10 µL of antisera into well 1
7. Centrifuge for 9 min
8. Read results

REFERENCE	PRODUCT	PRESENTATION	ANTIBODY TYPE AND ORIGIN
213204	Anti-Jk^a for DG Gel	1 x 5 mL	Monoclonal human IgM MS-15

Anti-Jk^{b} for DG Gel

MATERIAL REQUIRED

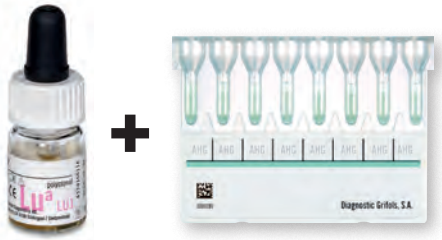
Samples: red blood cells
Automatic pipette 10 µL, 25 µL, 50 µL, 1 mL
Disposable tips
Glass tubes
DG Gel Sol
DG Gel Neutral card
Bromelase 30
Anti-Jk^{b} for DG Gel
Incubator for DG Gel cards: DG Therm
Centrifuge for DG Gel cards: DG Spin

PROCEDURE

1. Identify card
2. Dilute RBC sample to 1% with DG Gel Sol
3. Dispense 50 µL of RBC dilution into well 1
4. Dispense 25 µL of Bromelase 30 into well 1
5. Incubation 37°C for 10 min
6. Dispense 10 µL of antisera into well 1
7. Centrifuge for 9 min
8. Read results

REFERENCE	PRODUCT	PRESENTATION	ANTIBODY TYPE AND ORIGIN
213205	Anti-Jk^{b} for DG Gel	1 x 5 mL	Monoclonal human IgM MS-8

Anti-Lu^a



MATERIAL REQUIRED

Samples: red blood cells
Automatic pipette 10 µL, 25 µL, 50 µL, 1 mL
Disposable tips
Glass tubes
DG Gel Sol
DG Gel Coombs card
Anti-Lu^a
Incubator for DG Gel cards: DG Therm
Centrifuge for DG Gel cards: DG Spin

PROCEDURE

1. Identify card
2. Dilute RBC sample to 0.8% with DG Gel Sol
3. Dispense 50 µL of RBC dilution into well 1
4. Dispense 25 µL of antisera into well 1*
5. Incubation 37°C for 15 min
6. Centrifuge for 9 min
7. Read results

REFERENCE	PRODUCT	PRESENTATION	ANTIBODY TYPE AND ORIGIN
213192	Anti-Lu^a	1 x 5 mL	Polyclonal human

*It is also possible to use 10 µL of antisera. See the Instrucions for Use for further details.

Anti-Lu^b

MATERIAL REQUIRED

Samples: red blood cells
Automatic pipette 25 µL, 50 µL, 1 mL
Disposable tips
Glass tubes
DG Gel Sol
DG Gel Coombs card
Anti-Lu^b
Incubator for DG Gel cards: DG Therm
Centrifuge for DG Gel cards: DG Spin

PROCEDURE

1. Identify card
2. Dilute RBC sample to 0.8% with DG Gel Sol
3. Dispense 50 µL of RBC dilution into well 1
4. Dispense 25 µL of antisera into well 1*
5. Incubation 37°C for 15 min
6. Centrifuge for 9 min
7. Read results

REFERENCE	PRODUCT	PRESENTATION	ANTIBODY TYPE AND ORIGIN
213193	Anti-Lu^b	1 x 5 mL	Polyclonal human

*It is also possible to use 10 µL of antisera. See the Instrucions for Use for further details.

Anti-M Mono-Type Dual*

MATERIAL REQUIRED

- Samples: red blood cells
- Automatic pipette 25 µL, 50 µL, 1 mL
- Disposable tips
- Glass tubes
- DG Gel Sol
- DG Gel Neutral card
- Anti-M Mono-Type Dual
- Centrifuge for DG Gel cards: DG Spin

PROCEDURE

1. Identify card
2. Dilute RBC sample to 1% with DG Gel Sol
3. Dispense 50 µL of RBC dilution into well 1
4. Dispense 25 µL of antisera into well 1
5. Incubation RT for 10-15 min**
6. Centrifuge for 9 min
7. Read results

REFERENCE	PRODUCT	PRESENTATION	ANTIBODY TYPE AND ORIGIN
213008	Anti-M Mono-Type Dual	1 x 5 mL	Monoclonal murine IgG LM110/140

*Antisera reagent also validated for use in conventional techniques.
**15 minutes in the incubation performed by the DG Gel fully automated instruments.

Anti-N (LN3/MN879) Mono-Type*

MATERIAL REQUIRED

- Samples: red blood cells
- Automatic pipette 25 µL, 50 µL, 1 mL
- Disposable tips
- Glass tubes
- DG Gel Sol
- DG Gel Neutral card
- Anti-N (LN3/MN879) Mono-Type
- Centrifuge for DG Gel cards: DG Spin

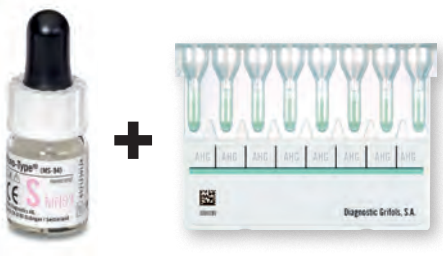
PROCEDURE

1. Identify card
2. Dilute RBC sample to 1% with DG Gel Sol
3. Dispense 50 µL of RBC dilution into well 1
4. Dispense 25 µL of antisera into well 1
5. Incubation RT for 10-15 min**
6. Centrifuge for 9 min
7. Read results

REFERENCE	PRODUCT	PRESENTATION	ANTIBODY TYPE AND ORIGIN
213989	Anti-N (LN3/MN879) Mono-Type	1 x 5 mL	Monoclonal murine IgG LN3/MN879

*Antisera reagent also validated for use in conventional techniques.
**15 minutes in the incubation performed by the DG Gel fully automated instruments.

Anti-S Mono-Type*



MATERIAL REQUIRED

Samples: red blood cells
Automatic pipette 25 µL, 50 µL, 1 mL
Disposable tips
Glass tubes
DG Gel Sol
DG Gel Coombs card
Anti-S Mono-Type
Incubator for DG Gel cards: DG Therm
Centrifuge for DG Gel cards: DG Spin

PROCEDURE

1. Identify card
2. Dilute RBC sample to 1% with DG Gel Sol
3. Dispense 50 µL of RBC dilution into well 1
4. Dispense 25 µL of antisera into well 1
5. Incubation 37°C for 10-15 min**
6. Centrifuge for 9 min
7. Read results

REFERENCE	PRODUCT	PRESENTATION	ANTIBODY TYPE AND ORIGIN
213993	Anti-S Mono-Type	1 x 5 mL	Monoclonal murine/human IgM MS-94

*Antisera reagent also validated for use in conventional techniques.
**15 minutes in the incubation performed by the DG Gel fully automated instruments.

Anti-s Mono-Type*

MATERIAL REQUIRED

Samples: red blood cells
Automatic pipette 25 µL, 50 µL, 1 mL
Disposable tips
Glass tubes
DG Gel Sol
DG Gel Coombs card
Anti-s Mono-Type
Incubator for DG Gel cards: DG Therm
Centrifuge for DG Gel cards: DG Spin

PROCEDURE

1. Identify card
2. Dilute RBC sample to 1% with DG Gel Sol
3. Dispense 50 µL of RBC dilution into well 1
4. Dispense 25 µL of antisera into well 1
5. Incubation 37°C for 10-15 min**
6. Centrifuge for 9 min
7. Read results

REFERENCE	PRODUCT	PRESENTATION	ANTIBODY TYPE AND ORIGIN
213994	Anti-s Mono-Type	1 x 5 mL	Monoclonal murine/human IgM P3BER

*Antisera reagent also validated for use in conventional techniques.
**15 minutes in the incubation performed by the DG Gel fully automated instruments.

Anti-Di^a Dual

MATERIAL REQUIRED

Samples: red blood cells
Automatic pipette 25 µL, 50 µL, 1 mL
Disposable tips
Glass tubes
DG Gel Sol
DG Gel Coombs card
Anti-Di^a Dual
Incubator for DG Gel cards: DG Therm
Centrifuge for DG Gel cards: DG Spin

PROCEDURE

1. Identify card
2. Dilute RBC sample to 1% with DG Gel Sol
3. Dispense 50 µL of RBC dilution into well 1
4. Dispense 25 µL of antisera into well 1
5. Incubation 37°C for 10-15 min*
6. Centrifuge for 9 min
7. Read results

REFERENCE	PRODUCT	PRESENTATION	ANTIBODY TYPE AND ORIGIN
213229	Anti-Di^a Dual	1 x 2 mL	Polyclonal human

*15 minutes in the incubation performed by the DG Gel fully automated instruments.

Anti-P_1 Mono-Type

MATERIAL REQUIRED

Samples: red blood cells
Automatic pipette 25 µL, 50 µL, 1 mL
Disposable tips
Glass tubes
DG Gel Sol
DG Gel Neutral card
Anti-P_1 Mono-Type
Bromelase 30
Centrifuge for DG Gel cards: DG Spin

PROCEDURE

1. Identify card
2. Dilute RBC sample to 1% with DG Gel Sol
3. Dispense 50 µL of RBC dilution into well 1
4. Dispense 25 µL of Bromelase 30 into well 1
5. Dispense 25 µL of antisera into well 1
6. Incubation 18-25ºC for 10-15 min*
7. Centrifuge for 9 min
8. Read results

REFERENCE	PRODUCT	PRESENTATION	ANTIBODY TYPE AND ORIGIN
213230	Anti-P_1 Mono-Type	1 x 5 mL	Monoclonal murine/human IgM P3NIL100

*15 minutes in the incubation performed by the DG Gel fully automated instruments.

CLEAR GUIDE

DG Gel Clear guide

REF	CARD	CONFIGURATION	TECHNIQUE	SAMPLES & REAGENTS												
210355	DG Gel ABO/Rh	A B AB D^{w} CDE Ctl A1 B	Det. of ABO/Rh forward & reverse group	5%	10 µL			50 µL				50 µL	-	--	9 min	Yes
210340	DG Gel ABO-CDE	A B D^{w} C E Ctl A1 B	Det. of ABO/Rh forward & reverse group	5%	10 µL			50 µL				50 µL	-	--	9 min	Yes
210338	DG Gel ABO/Rh (2D)	A B AB D^{w} CDE Ctl A1 B	Det. of ABO/Rh forward & reverse group	5%	10 µL			50 µL				50 µL	-	--	9 min	Yes
210378	DG Gel ABO/Rh (CR)	A B $_{(1)}$D^{w} $_{(2)}$D^{w} Kell Ctl N N N	Det. of ABO/Rh forward & reverse group	5%	10 µL			50 µL				50 µL	-	--	9 min	Yes
210348	DG Gel ABO/Rh (2D)+Kell	A B $_{(1)}$D^{w} $_{(2)}$D^{w} Kell Ctl A1 B	Det. of ABO/Rh forward & reverse group and Kell antigen	5%	10 µL			50 µL				50 µL	-	--	9 min	Yes
210352	DG Gel ABO/Rh+Kell (RT)	A B AB D^{w} Kell Ctl A1 B	Det. of ABO/Rh forward & reverse group and Kell antigen	5%	10 µL								-	--	9 min	Yes
210339	DG Gel Confirm	2 x (A B D^{w} Ctl)	ABO/Rh group confirmation	5%	10 µL								-	--	9 min	Yes
210351	DG Gel Confirm P	2 x (A B D^{w} Ctl)	ABO/Rh group confirmation	5%	10 µL								-	--	9 min	Yes
210346	DG Gel AB (x4)	4 X (A B)	ABO system confirmation	5%	10 µL								-	--	9 min	Yes
210341	DG Gel Anti-D	4 x (D^{w} Ctl)	Det. of Rh (D)	5%	10 µL								-	--	9 min	Yes
210349	DG Gel Rh Pheno	2 x (C E c e)	Det. of Rh system antigens	5%	10 µL								-	--	9 min	Yes
210382	DG Gel Double Pheno	$_{(1)}$C $_{(1)}$E $_{(1)}$c $_{(1)}$e $_{(2)}$C $_{(2)}$E $_{(2)}$c $_{(2)}$e	Det. of Rh system antigens	5%	10 µL								-	--	9 min	Yes
210350	DG Gel Rh Pheno + Kell	D^{w} C E c e C^{w} Kell Ctl	Det. of Rh & Kell systems antigens	5%	10 µL								-	--	9 min	Yes
210342	DG Gel Coombs	8 x (AHG)	Screening of unexpected Ab						50 µL			25 µL	15 min	37°C	9 min	Yes
210344	DG Gel Anti-IgG	8 x (IgG)	Identification of unexpected Ab								50 µL	25 µL	15 min	37°C	9 min	Yes
			Major Crossmatch			1%	50 µL					25 µL	15 min	37°C	9 min	Yes
			Minor Crossmatch	1%	50 µL								25 µL 15 min	37°C	9 min	Yes
			Autocontrol	1%	50 µL							25 µL	15 min	37°C	9 min	
			Direct Coombs	1%	50 µL								--	--	9 min	Yes
			Red blood cell typing	FOLLOW THE INSTRUCTIONS OF THE HEMOCLASSIFICATION SERUM YOU ARE USING												
210343	DG Gel Neutral	8 x (N)	Screening of unexpected Ab Saline (1)						50 µL			25 µL	15 min	RT	9 min	Yes
			Enzymatic (2)							50 µL		25 µL	15 min	37°C	9 min	Yes
			Identification of unexpected Ab Saline (1)								50 µL	25 µL	15 min	RT	9 min	Yes
			Enzymatic (2)								50 µL	25 µL	15 min	37°C	9 min	Yes
			Major Crossmatch Saline (1)			1%	50 µL					25 µL	15 min	RT	9 min	Yes
			Enzymatic (2)			1%	50 µL					25 µL	15 min	37°C	9 min	Yes
			Minor Crossmatch Saline (1)	1%	50 µL								25 µL 15 min	RT	9 min	Yes
			Enzymatic (2)	1%	50 µL								25 µL 15 min	37°C	9 min	Yes
			Autocontrol Saline (1)	1%	50 µL							25 µL	15 min	RT	9 min	Yes
			Enzymatic (2)	1%	50 µL							25 µL	15 min	37°C	9 min	Yes
			Red blood cell typing	FOLLOW THE INSTRUCTIONS OF THE HEMOCLASSIFICATION SERUM YOU ARE USING												Yes
210375	DG Gel Neutral/Coombs	N N N N AHG AHG AHG AHG	Det. of Coombs, enzymatic and saline techniques	SEE GEL NEUTRAL AND DG GEL COOMBS												Yes
210353	DG Gel Newborn	A B AB D^{w} D^{w} Ctl. IgG AHG	Det. of ABO, Rh (D) & direct Coombs in newborns	1%	50 µL								--	--	9 min	Yes
210345	DG Gel DC Scan	2 X (AHG IgG C3d Ctl.)	Evaluation of positive direct Coombs	1%	50 µL								--	--	9 min	Yes
210374	DG Gel CT	A B D^{w} Ctl. N N AHG AHG	ABO/Rh group confirmation	1%	50 µL								--	--	9 min	Yes
			ABO/Rh isogroup compatibility test	1%	50 µL	1%	50 µL						--	--	9 min	Yes
			Screening of unexpected Ab						50 µL	50 µL		25 µL	15 min	37°C	9 min	Yes
			Crossmatch			1%	50 µL					25 µL	15 min	37°C	9 min	Yes
			Autocontrol	1%	50 µL							25 µL	15 min	37°C	9 min	Yes
210377	DG Gel T/S Poly	A B D^{w} Ctl. AHG AHG AHG AHG	ABO/Rh group confirmation	1%	50 µL											Yes
			Screening of unexpected Ab						50 µL			25 µL	15 min	37°C	9 min	Yes
			Crossmatch			1%	50 µL					25 µL	15 min	37°C	9 min	Yes
			Autocontrol	1%	50 µL							25 µL	15 min	37°C	9 min	Yes

Card identification

DILUTION REQUIRED	SAMPLE VOLUME (RBC)	DILUENT VOLUME (DG GEL SOL)
5%	50 µL	1 mL
	10 µL	200 µL
1%	10 µL	1 mL
	5 µL	500 µL

(1) Possibility of incubation at 37°C or 2-8°C

Patient sample dilution (RBCs)
Patient red blood cell sample dilution (RBCs)
Donor sample dilution (RBCs from bag)
Patient red blood cell sample dilution (RBCs from bag)
Serigroup Diana / Reverse-Cyte 0.8%
Serascan Diana / Screen-Cyte 0.8% Sero-Cyte 0.8%/ Sero-Cyte Pool 0.8%
Serascan Diana P / Screen-Cyte P 0.8%
Identisera Diana / Data-Cyte Plus 0.8%
Identisera Diana P / Data-Cyte Plus P 0.8%
Patient plasma or serum
Donor plasma or serum
Incubation time in DG Therm
Incubation temperature in DG Therm
Centrifugation time in DG Spin
Reading in DG Reader

DG Gel Clear guide

1 IDENTIFY THE DG GEL CARD

DG Gel card identification

2 RED BLOOD CELL SAMPLE DILUTION

ABO/Rh typing: **5%**

Antibody testing & special techniques: **1%**

3 RED BLOOD CELL SAMPLE DILUTION DISPENSING

ABO/Rh typing: **10 µL**

Antibody testing & special techniques: **50 µL**

4 RED BLOOD CELL REAGENTS DISPENSING: **50 µL**

Serigrup Diana, Reverse-Cyte 8%, Sero-Cyte 0.8%, Screen-Cyte 0.8%, Data-Cyte Plus 0.8%, Serascan Diana, Identisera Diana, Data-Cyte Plus 0.8%

5 PLASMA OR SERUM SAMPLE DISPENSING

Determination of reverse group: **50 µL**

Other techniques: **25 µL**

6 INCUBATION OF THE DG GEL CARD

Use the incubator for DG Gel cards: DG Spin

Coombs & enzymatic techniques: **15 min / 37ºC**

Saline techniques: **15 min / RT**

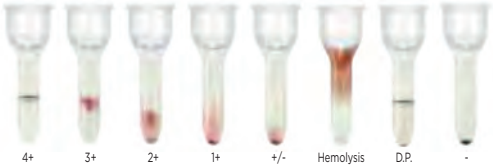
7 CENTRIFUGATION

Use centifuge for DG Gel card: DG Spin

8 READING

DG Reader can be used

See reaction patterns



ANNEXES

HUMAN BLOOD GROUP ANTIGENS & ANTIBODIES

Human Blood Group Antigens & Antibodies

BLOOD GROUP SYSTEM & ISBT NUMBER	BLOOD GROUP ANTIGEN	ISBT SYMBOL	GENE(S)	ANTIGEN OCCURRENCE (%)			ANTIGEN DENSITY	IMMUNOGLOBULIN CLASS	ANTIBODY DETECTION TECHNIQUE				CLINICAL SIGNIFICANCE	
				CAUCASIAN	BLACK	ASIAN			4°C - RT	IAT	PAPAIN /FICIN†	DTT 0.2M†	HTR	HDFN
ABO 001	A	ABO1	ABO	43	27	28	Variable	IgM; (IgG)	Yes	Yes	Enhanced	Resistant	No-Severe	No-Moderate
	B	ABO2		9	20	27	Variable	IgM; (IgG)	Yes	Yes	Enhanced	Resistant	No-Severe	No-Moderate
	A,B	ABO3		56	51	57	Variable	IgM; (IgG)	Yes	Yes	Enhanced	Resistant	No-Mild	No-Moderate
	A1	ABO4		34	19	27	Variable	IgM; (IgG)	Yes	Rarely	Enhanced	Resistant	No-Mild	No
MNS 002	M	MNS1	GYPA	78	74	-	Dosage	IgG (cold); IgM	Yes	Rarely	Sensitive*	Resistant	Rare	Rare
	N	MNS2		72	75	-	Dosage	IgG (cold); IgM	Yes	Rarely	Sensitive*	Resistant	Rare	No
	S	MNS3	GYPB	55	31	-	Dosage	IgG; IgM	Yes	Yes	Variable**	Resistant	No-Mod.(Rare)	No-Mod.(Rare)
	s	MNS4		89	93	-	Dosage	IgG; IgM	Yes	Yes	Variable**	Resistant	No-Mild(Rare)	No-Severe(Rare)
	U	MNS5		99.9	99	-	-	IgG	-	Yes	Resistant	Resistant	Mild-Severe	Mild-Severe
	Mi^a	MNS7	GYPA-B (Hybrid)	<0.01	<0.01	~5	-	IgM; IgG	Yes	Yes	Sensitive	Resistant	Rare	Mild-Severe
	Mur	MNS10		<0.01	<0.01	6-9	-	IgG; (IgM)	Yes	Yes	Sensitive	Resistant	No-Severe	No-Severe
P1PK 003	P1	P1PK1	A4GALT	79	94	20-30	Variable	IgM; (IgG)	Yes	Rarely	Enhanced	Resistant	No-Moderate	No
	p^k	P1PK3		100	100	100	Variable	IgM; (IgG)	Yes	Yes	Enhanced	Resistant	No-Severe	No-Severe
Rh 004	D	RH1	RHD	85	92	99	Variable	IgG; (IgM)	Rarely	Yes	Enhanced	Resistant	Mild-Severe	Mild-Severe
	C	RH2	RHCE	68	27	93	Dosage	IgG; IgM	Rarely	Yes	Enhanced	Resistant	Mild-Severe	Mild-Severe
	E	RH3		29	22	39	Dosage	IgG; IgM	Yes	Yes	Enhanced	Resistant	Mild-Moderate	Mild
	c	RH4		80	98	47	Dosage	IgG; (IgM)	Rarely	Yes	Enhanced	Resistant	Mild-Severe	Mild-Severe
	e	RH5		96	98	96	Dosage	IgG; (IgM)	Rarely	Yes	Enhanced	Resistant	Mild-Moderate	Rare (Mild)
	f	RH6		65	92	12	-	IgG; (IgM)	Yes	Yes	Resistant	Resistant	Mild	Mild
	Ce	RH7		68	27	92	-	IgG; (IgM)	Rarely	Yes	Enhanced	Resistant	Mild	Mild
	C^w	RH8		2	1	-	-	IgG; IgM	Yes	Yes	Enhanced	Resistant	Mild-Severe	Mild-Moderate
	V	RH10		1	30	-	-	IgG	-	Yes	Resistant	Resistant	Mild	No
	G	RH12		84	92	100	-	IgG	-	Yes	Enhanced	Resistant	No-Severe	No-Severe
	hr^s	RH19		96	97	98	-	IgG	-	Yes	Enhanced	Resistant	No-Fatal	No Evidence
	VS	RH20		<0.01	26-40	<0.01	-	IgG	-	Yes	Enhanced	Resistant	Mild	No/+DAT
	hr^s	RH31		98	97	96	-	IgG	-	Yes	Enhanced	Resistant	No	No/+DAT
Lutheran 005	Lu^a	LU1	LU, BCAM	8	5	-	Variable	IgM; IgG	Yes	Yes	Resistant	Sensitive	No	No-Mild (Rare)
	Lu^b	LU2		99.8	99.8	99.8	Variable	IgG; IgM	Yes	Yes	Resistant	Sensitive	Mild-Moderate	Mild
	Lu^3	LU3		<99	>99	>99	-	IgG	Yes	Yes	Resistant	Sensitive	No Data	No Data
Kell 006	K	KEL1	KEL	9	2	Rare	-	IgG; (IgM)	Rarely	Yes	Resistant††	Sensitive	Mild-Severe	Mild-Severe
	k	KEL2		96.8	100	-	-	IgG; (IgM)	-	Yes	Resistant††	Sensitive	Mild-Moderate	Mild-Severe
	Kp^a	KEL3		2	<0.01	-	-	IgG; (IgM)	-	Yes	Resistant††	Sensitive	Mild-Moderate	Mild-Severe
	Kp^b	KEL4		99.9	100	100	-	IgG; (IgM)	-	Yes	Resistant††	Sensitive	No-Moderate	Mild-Moderate
	Js^a	KEL6		<0.01	20	-	-	IgG; (IgM)	-	Yes	Resistant††	Sensitive	No-Moderate	Mild-Severe
	Js^b	KEL7		>99	99	-	-	IgG	-	Yes	Resistant††	Sensitive	Mild-Moderate	Mild-Severe
Lewis 007	Le^a	LE1	FUT3	22	23	-	Variable	IgM; (IgG)	Yes	Yes	Enhanced	Resistant	No/Rare Hemolytic	No-Mild
	Le^b	LE2		72	56	-	Variable	IgM; (IgG)	Yes	Yes	Enhanced	Resistant	No	No-Mild
Duffy 008	Fy^a	FY1	FY, DARC	66	10	99	Dosage	IgG; (IgM)	-	Yes	Sensitive***	Resistant	Mild-Severe/Delayed	Mild-Moderate
	Fy^b	FY2		83	23	18.5	Dosage	IgG; (IgM)	-	Yes	Sensitive***	Resistant	Mild-Severe/Delayed	Mild
	Fy3	FY3		>99.9	32	99.9	-	IgG	-	Yes	Resistant	Resistant	Mild-Mod./Delayed	Mild
Kidd 009	Jk^a	JK1	JK, SLC14A1	77	92	72	Dosage	IgG; IgGM; IgG+IgM	-	Yes	Enhanced	Resistant	No-Severe/Delayed	Mild-Moderate
	Jk^b	JK2		74	49	76	Dosage	IgG; IgGM; IgG+IgM	-	Yes	Enhanced	Resistant	No-Severe/Delayed	No-Mild
	Fy3	JK3		100	-	-	-	IgG; (IgM)	-	Yes	Enhanced	Resistant	No-Severe/Delayed	No-Mild
Diego 010	Di^a	DI1	DI, SLC4A1	0.01	0.01	-	Dosage	IgG	-	Yes	Resistant	Resistant	No-Severe	Mild-Severe
	Di^b	DI2		100	-	-	Dosage	IgG	-	Yes	Resistant	Resistant	No-Moderate	Mild
	Wr^a	DI3		<0.01	-	-	-	IgM; IgG	Yes	Yes	Resistant	Resistant	No-Severe	Mild-Severe
Yt 011	Yt^a	YT1	YT, ACHE	>99.8	>99.8	-	-	IgG (IgG4)	-	Yes	Variable	Sensitive	No-Moderate	No
	Yt^b	YT2		8	-	-	-	IgG	-	Yes	Variable	Sensitive	No	No
Xg 012	Xg^a	XG1	XG, MIC2	F-89 / M-66	-	-	Variable	IgG; (IgM)	-	Yes	Sensitive	Resistant	No	No
Dombrock 014	Do^a	DO1	DO, ART4	67	55	-	-	IgG	-	Yes	Enhanced****	Sensitive	Delayed-Hemolytic	No/+DAT
	Do^b	DO2		82	89	-	-	IgG	-	Yes	Enhanced****	Sensitive	Acute, Delayed	No/+DAT
	Gy^a	DO3		100	100	>99.9	-	IgG	-	Yes	Enhanced****	Sensitive	No-Moderate	No/+DAT
	Hy	DO4		100	>99	100	-	IgG	-	Yes	Enhanced****	Sensitive	No-Moderate	No/+DAT
	Jo^a	DO5		100	>99	100	-	IgG	-	Yes	Enhanced****	Variable	No-Moderate	No
Colton 015	Co^a	CO1	CO, AQP1	99.5	99.5	99.5	-	IgG; (IgM)	-	Yes	Resistant	Resistant	No-Moderate	Mild-Severe
	Co^b	CO2		10	10	10	-	IgG	-	Yes	Resistant	Resistant	No-Moderate	Mild
Chido/Rodgers 017	Ch1	CH/RG1	C4B	96	-	-	Variable	IgG (IgG2; IgG4)	-	Yes	Resistant	Resistant	No	No
	Rg1	CH/RG11	C4A	>98	>98	>98	Variable	IgG	-	Yes	Resistant	Resistant	No	No
H 018	H	H1	FUT1	99.9	99.9	99.9	Variable	IgM; (IgG)	Yes	-	Resistant	Resistant	No-Severe	No
Gerbich 020	Ge2	GE2	GE, GYPC	>99.9	>99.9	>99.9	-	IgG	-	Yes	Variable	Variable	No-Moderate	No/+DAT
	Ge3	GE3		>99.9	>99.9	>99.9	-	IgG; IgM	-	Yes	Resistant	Resistant	No-Moderate	+DAT/Severe
	Ge4	GE4		>99.9	>99.9	>99.9	-	IgG	-	Yes	Resistant	Resistant	No Data	No Data
Knops 022	Kn^a	KN1	KN, CR1 JMH,	98	99	-	Variable	IgG	-	Yes	Sensitive	Sensitive	No	No
John Milton Hagen 026	JMH	JMH1	SEMA7A	94.5	99.9	-	Variable	IgG	-	Yes	Sensitive	Sensitive	No	No
I 027	I	I1	GCNT2	>99	>99	>99	Variable	IgM; (IgG)	Yes	-	Enhanced	Resistant	No	No
Globoside 028	P	GLOB1	B3GALNT1	>99.9	>99.9	>99.9	Variable	IgM; IgG	Yes	Yes	Enhanced	Resistant	No-Severe	No-Mild
Lan 033	Lan	LAN	LAN, ABCB6	>99	>99	>99	Variable	IgG	-	Yes	Resistant	Resistant	No-Severe /Hemolytic	No-Mild
Vel 034	Vel	VEL	SMIM1	>99	>99	>99	Variable	IgM with IgG	-	Yes	Enhanced	Variable	No-Severe /Hemolytic	+DAT/Severe

Antigens are color coded in the second column to represent: Red: High Prevalence. Blue: Polymorphic. Green: Low Prevalence

† The enzyme & DTT information provided is to be used only as a guide because with all chemical treatment of RBCs, the effect varies depending on the exact conditions of treatment, purity of reagents and the age (condition) of the RBCs.

†† Most Kell blood group system antigens are sensitive to treatment with a mixture of trypsin and α-Chymotrypsin.

* M,N: α-Chymotrypsin resistant

** S,s: α-Chymotrypsin Sensitive

*** Fya, Fyb: Trypsin resistant (Fyb weakened)

**** Dombrock system is sensitive to Trypsin

***** Kna: Papain resistant, ficin sensitive

Human Blood Group Antigens & Antibodies

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GRIFOLS

TRANSFUSION MEDICINE

GRIFOLS

erytra eflexis®

Adaptability that fits your lab

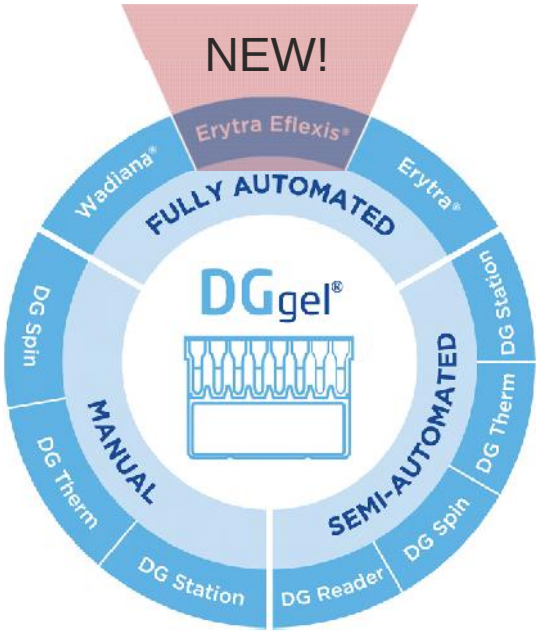
Part of the DG Gel® System

TYPING

DG Gel® System – Scalable Solutions

Adaptable to your laboratory needs

- DG Gel system is the Grifols column agglutination technique (CAT) for pretransfusion testing
- The comprehensive system includes;
  - DG Gel cards
  - Reagents
  - Instrumentation
- DG Gel system reagents are compatible with all of the Grifols blood typing instruments providing exceptional flexibility and automation

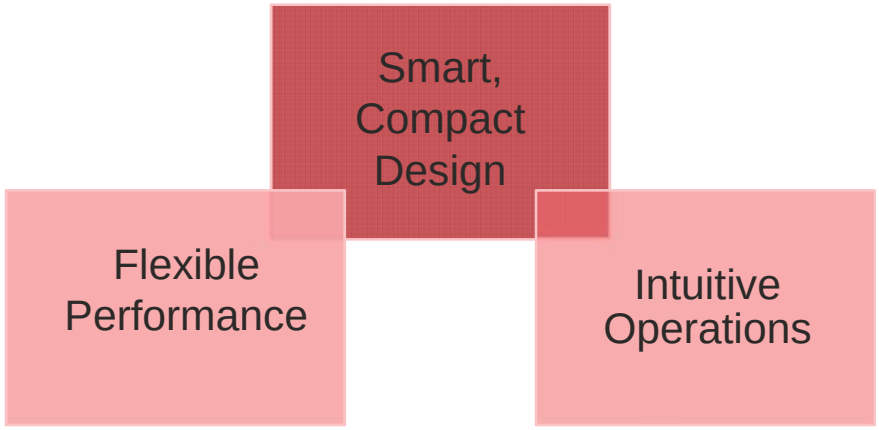


GRIFOLS

Introducing the Erytra Eflexis System

Adaptability as its best

- The Erytra Eflexis is a fully automated, mid-sized analyzer that performs pretransfusion compatibility testing using DG Gel technology with a smart and compact design offering intuitive operation



GRIFOLS

Introducing the Erytra Eflexis System

Smart | Flexible | Intuitive

- The adaptability of the Erytra Eflexis helps labs achieve workflow efficiency and improve daily work routines, providing reliable and timely results that contribute to ensuring patient safety
- A true flexible system allows laboratories to select the solution that is best suited to different workflow needs and capacities

EXPERTISE

Grifols offers vast experience developing & manufacturing fully automated immunohematology (IH) instruments.

- Thousands of IH laboratories across the globe currently use Grifols technology to process gel agglutination cards
- High-quality international service and support
- Pioneering in IH automation

GRIFOLS

How you can benefit by using the Erytra Eflexis?

Smart | Flexible | Intuitive

- Employ highly flexible performance to optimize laboratory operational workflow
- Reduce hands-on time with an intuitive user-friendly experience
- Improve daily workloads and efficiency with ease
  - Multiple lab configurations as well as different multi-site health networks can be tailored

TWO IN ONE

Two different lab configurations in a single instrument through the unique interchangeable sample & reagent lineal racks, which are automatically recognized by the system.

GRIFOLS

Erytra Eflexis – Smart, Compact Design

Designed for convenience and ease of use

- A benchtop, compact model for optimal use of lab space
- Get a clear view of the inside processes via the transparent casing and simple internal organization
- Designed with its own internal back up

INDEPENDENT COMPONENTS

2 **independent centrifuges**
[12 cards/centrifuge]

3 **intelligent incubators independently managed**
[12 cards/incubator]

GRIFOLS

Erytra Eflexis – Samples and Reagents Management

Achieve automation with high capacity

- Exclusive direct loading of the DG Gel double decker racks
- High capacity for cards and samples*
- Internal control check points available throughout the test procedure

CAPACITY UP TO

200	72	46
Cards *[1600 tests]*	**Samples** *[(2 x 12) x 3]*	**Liquid Reagents** *[34 RRBC, 2 DG Gel® Sol positions, 10 liquid antisera]*

*Depends on the system configuration utilized

GRIFOLS

Erytra Eflexis – Flexible Performance

Experience versatile performance and configurations

- Continuous & random, loading & unloading of cards, samples and reagents
- STAT management – just load the samples randomly in any position, click the STAT button and samples will be automatically prioritized
- Flexible incubators management is available depending on the requested tests
- Convenient universal reagents & wash solutions

GRIFOLS

Erytra Eflexis – Intuitive Operation

Easy to operate, maintain, and support

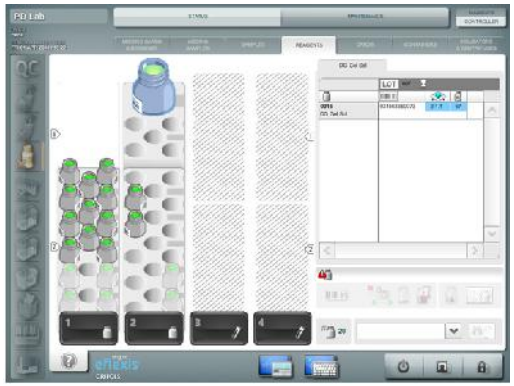
- Exclusive simultaneous perforation and dispensing technology allows for the 100% use of the card wells and helps prevent cross contamination
- Reduce hands-on operation time with an intuitive experience, including innovative system fluid loading & unloading
- Optimal direct drainage to maximize system's autonomy
- Minimal maintenance required

GRIFOLS

Erytra Eflexis – Intuitive Experience

Simply load, select and process

- Minimal training is required to interact with the external touchscreen – requires little user intervention
- The software interface is easy to use and is customizable for different lab requirements



REAL-TIME INFORMATION

The system provides real-time updates for the following;

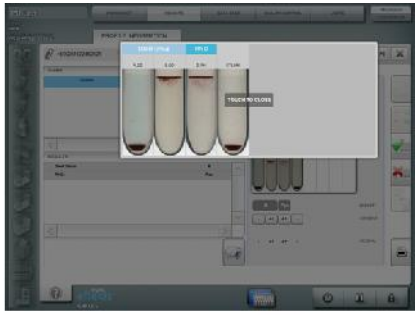
- Functional and status updates for the analyzer, incubators, centrifuges, DG Gel cards, reagents, samples and waste solutions
- Sample processing time
- Warnings alerts for the system
- Maintenance notifications

GRIFOLS

Erytra Eflexis – Intuitive Software

Get clear results and connectivity

- High-resolution reading with a multi-functional CCD camera
- Complete results traceability report including users, analyzer, reagent information, and modifications implemented
- Bidirectional connectivity to the LIS (laboratory information system)
- Remote access for results validation
- Remote support



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The Erytra Eflexis System

Adaptability that fits your lab

Smart, Compact Design

Flexible Performance

Intuitive Operations

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Thank you!

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