NHS
Blood and Transplant

# Red Cell Immunohaematology

Jess Gill

*BMS Advanced Specialist*

# What is RCI?

NHS Blood and Transplant

- National support for Transfusion Laboratories
- RCI labs located in Blood Centres in
  Birmingham, Bristol (Filton),
  London (Collindale, Tooting),
  Liverpool and Sheffield
- Liverpool hosts the NFFB and reagents
- Filton hosts the IBGRL

- Majority of blood transfusions
  can be facilitated by hospitals, BUT..

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# BCSH Guidelines..

NHS Blood and Transplant

- If there is any doubt concerning the identity of any antibodies present, or the ability to exclude clinically significant antibodies, a sample should be sent to a red cell reference laboratory.
- Laboratories that are not registered for antibody investigation in an accredited external quality assurance scheme should refer samples from all patients that have given positive results in the antibody screen to a laboratory that is registered for antibody identification.

# BCSH Guidelines..

NHS Blood and Transplant

- If a patient is known to have (ever) formed a red cell alloantibody, each new sample must be fully tested to exclude the presence of further alloantibodies.

- When one antibody specificity is detected it is essential that the presence or absence of additional clinically significant alloantibodies is established.

# Why Refer to RCI?

NHS Blood and Transplant

- Rare/Anomalous ABO/D blood grouping
- Antibody Confirmation/Identification
- Complex mixtures of antibodies
- Antenatal Investigations;
  - Quantification and titration
  - FMH Investigation
  - Provision of suitable blood for delivery/IUT
- AIHAs/ DAT positive patients
- Suspected Haemolytic Transfusion Reactions
- Advice!
- Panic?

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# Techniques

Indirect Agglutination Technique (IAT)

Column (gel)

LISS Tube

Alternative temperatures

NHS Blood and Transplant

DAT

Auto/Alloadsorption and Elution

Fresh/frozen rare cells

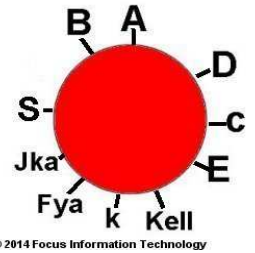
Additional panels; Panel 2, R1R1 and R2R2

Neutralisation

Additional techniques – capture/ BioVue

Enzyme treatment of panel cells

Phenotype/Genotype




© Immense Immunology Insight

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- Via NHSBT Liverpool and in liaison with the International Blood Group Reference Laboratory (IBGRL) RCI have access to additional reagents that may not be available to Hospital Labs;
  - Reference antibody identification panels Rare cells to confirm or exclude specificity
  - Rare antisera for phenotyping
  - National Frozen Cell Bank
  - National / international rare cell exchange
  - WHO International Rare Cell Donor Panel

# BCSH Guidelines..

NHS Blood and Transplant

- Failure to recognise all of the antibody specificities within a sample can lead to a haemolytic transfusion reaction. Specificities should be excluded using red cells having homozygous expression of the relevant antigen. A single example only of each phenotype is sufficient for exclusion.
- This can be demonstrated by choosing reagent red cells that are negative for the recognised specificity but positive for other antigens to which clinically significant antibodies may arise.

NHS
Blood and Transplant

# Example Cases

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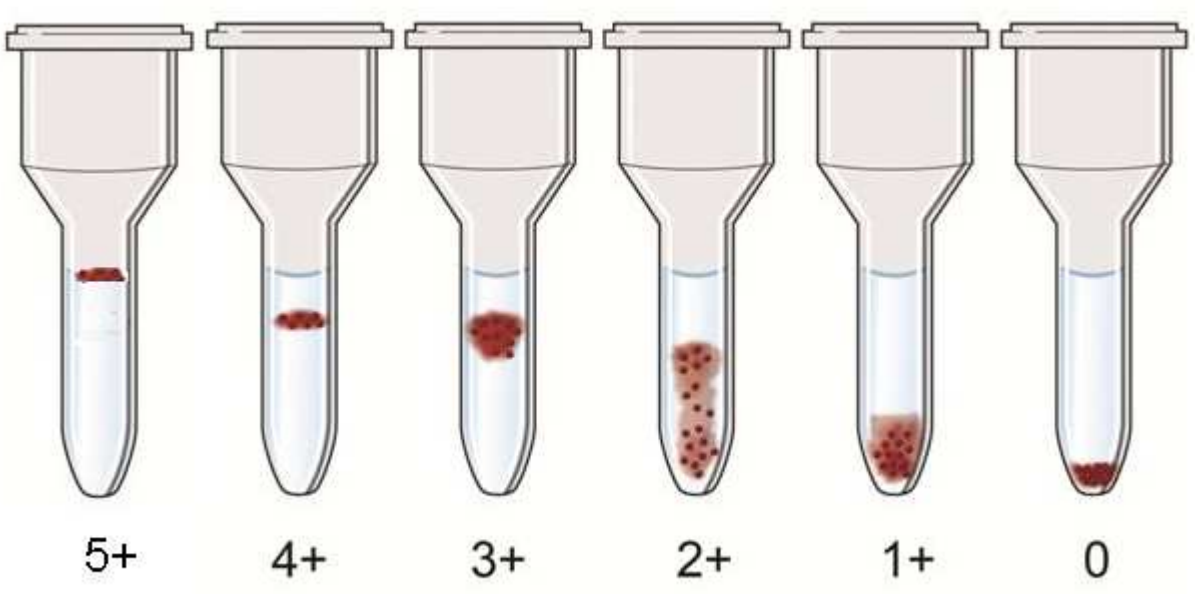
# Agglutination

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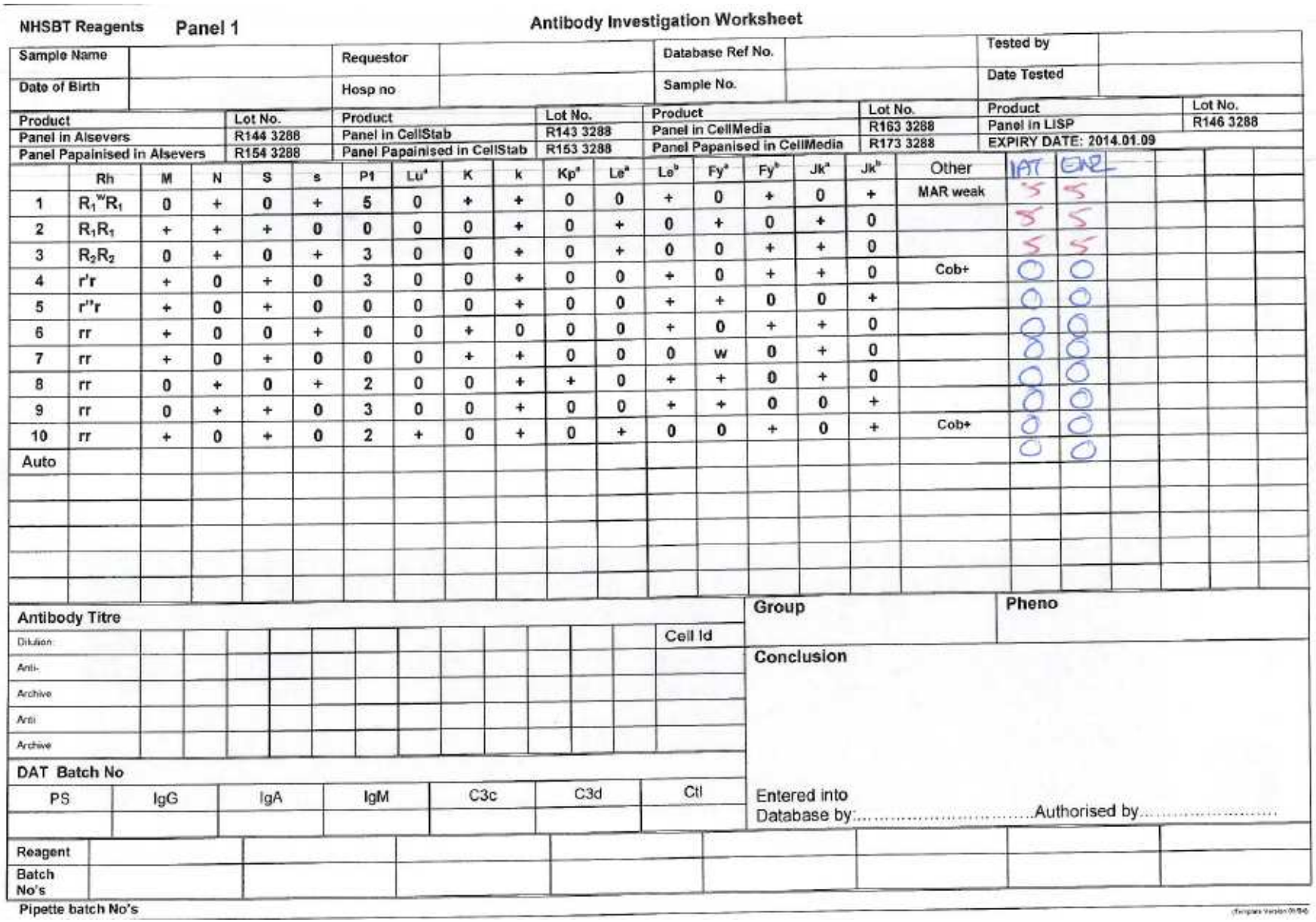

NHSBT Reagents Panel 1

Antibody Investigation Worksheet

| Sample Name | | Requestor | | Database Ref No. | | Tested by | |
|---|---|---|---|---|---|---|---|
| Date of Birth | | Hosp no | | Sample No. | | Date Tested | |

| Product | Lot No. | Product | Lot No. | Product | Lot No. | Product | Lot No. |
|---|---|---|---|---|---|---|---|
| Panel in Alsevers | R144 3288 | Panel in CellStab | R143 3288 | Panel in CellMedia | R163 3288 | Panel in LISP | R146 3288 |
| Panel Papainised in Alsevers | R154 3288 | Panel Papainised in CellStab | R153 3288 | Panel Papanised in CellMedia | R173 3288 | EXPIRY DATE: 2014.01.09 | |

| | Rh | M | N | S | s | P1 | Lu$^a$ | K | k | Kp$^a$ | Le$^a$ | Le$^b$ | Fy$^a$ | Fy$^b$ | Jk$^a$ | Jk$^b$ | Other | IAT | ENZ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | $R_1^wR_1$ | 0 | + | 0 | + | 5 | 0 | + | + | 0 | 0 | + | 0 | + | 0 | + | MAR weak | 5 | 5 |
| 2 | $R_1R_1$ | + | + | + | 0 | 0 | 0 | 0 | + | 0 | + | 0 | + | 0 | + | 0 | | 5 | 5 |
| 3 | $R_2R_2$ | 0 | + | 0 | + | 3 | 0 | 0 | + | 0 | + | 0 | 0 | + | + | 0 | | 5 | 5 |
| 4 | r'r | + | 0 | + | 0 | 3 | 0 | 0 | + | 0 | 0 | + | 0 | + | + | 0 | Cob+ | 0 | 0 |
| 5 | r''r | + | 0 | + | 0 | 0 | 0 | 0 | + | 0 | 0 | + | + | 0 | 0 | + | | 0 | 0 |
| 6 | rr | + | 0 | 0 | + | 0 | 0 | + | 0 | 0 | 0 | + | 0 | + | + | 0 | | 0 | 0 |
| 7 | rr | + | 0 | + | 0 | 0 | 0 | + | + | 0 | 0 | 0 | w | 0 | + | 0 | | 0 | 0 |
| 8 | rr | 0 | + | 0 | + | 2 | 0 | 0 | + | + | 0 | + | + | 0 | + | 0 | | 0 | 0 |
| 9 | rr | 0 | + | + | 0 | 3 | 0 | 0 | + | 0 | 0 | + | + | 0 | 0 | + | | 0 | 0 |
| 10 | rr | + | 0 | + | 0 | 2 | + | 0 | + | 0 | + | 0 | 0 | + | 0 | + | Cob+ | 0 | 0 |
| Auto | | | | | | | | | | | | | | | | | | | |

| Antibody Titre | | | | | | | | | | | | | | Cell Id |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Dilution | | | | | | | | | | | | | | |
| Anti- | | | | | | | | | | | | | | |
| Archive | | | | | | | | | | | | | | |
| Anti | | | | | | | | | | | | | | |
| Archive | | | | | | | | | | | | | | |

Group

Pheno

Conclusion

Entered into Database by:.....Authorised by.....

DAT Batch No

| PS | IgG | IgA | IgM | C3c | C3d | Ctl |
|---|---|---|---|---|---|---|
| | | | | | | |

| Reagent | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Batch No's | | | | | | | | |

Pipette batch No's

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# Have a go yourself!

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| Patient's Name | | Ref. No. | Sample No. | Conclusion |
|---|---|---|---|---|
| D.O.B. | | | | Tested by Date |

Unless otherwise indicated, all cells are positive for $Kp^b$ and $Lu^b$ and negative for $Wr^a$ and $Co^b$.

Instructions for use can be found at http://www.blood.co.uk/reagents

| | Rh | C | D | E | c | e | $C^w$ | M | N | S | s | P1 | $Lu^1$ | K | k | $Kp^a$ | $Le^a$ | $Le^b$ | $Fy^a$ | $Fy^b$ | $Jk^a$ | $Jk^b$ | Other | IAT | EWZ | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | $R_1^{N}R_1$ | + | + | 0 | 0 | + | + | + | + | 0 | + | 4 | 0 | + | + | 0 | + | 0 | 0 | + | + | 0 | | 0 | 0 | | | | |
| 2 | $R_1R_1$ | + | + | 0 | 0 | + | 0 | + | 0 | + | 0 | 3 | 0 | 0 | + | 0 | 0 | + | + | 0 | 0 | + | | 0 | 0 | | | | |
| 3 | $R_2R_2$ | 0 | + | + | + | 0 | 0 | 0 | + | 0 | + | 2 | 0 | 0 | + | + | 0 | + | + | 0 | 0 | + | | 3 | 5 | | | | |
| 4 | r'r | + | 0 | 0 | + | + | 0 | 0 | + | 0 | + | 2 | 0 | 0 | + | 0 | + | 0 | 0 | + | 0 | + | Kna- | 0 | 0 | | | | |
| 5 | r''r | 0 | 0 | + | + | + | 0 | + | 0 | + | 0 | 1 | 0 | 0 | + | 0 | + | 0 | 0 | + | + | 0 | | 4 | 5 | | | | |
| 6 | rr | 0 | 0 | 0 | + | + | 0 | + | 0 | + | 0 | 4 | 0 | + | 0 | 0 | 0 | + | + | 0 | 0 | + | | 0 | 0 | | | | |
| 7 | rr | 0 | 0 | 0 | + | + | 0 | 0 | + | 0 | + | 1 | 0 | + | + | 0 | 0 | + | + | w | 0 | + | | 0 | 0 | | | | |
| 8 | rr | 0 | 0 | 0 | + | + | 0 | + | + | 0 | + | 0 | 0 | 0 | + | + | + | 0 | + | 0 | + | 0 | | 0 | 0 | | | | |
| 9 | rr | 0 | 0 | 0 | + | + | 0 | + | 0 | 0 | + | 0 | + | 0 | + | 0 | 0 | + | 0 | + | 0 | + | | 0 | 0 | | | | |
| 10 | rr | 0 | 0 | 0 | + | + | 0 | 0 | + | + | 0 | 3 | 0 | 0 | + | 0 | 0 | + | 0 | + | + | 0 | | 0 | 0 | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | AUTO | 0 | / | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| Reagent | | | | | | | DAT Profile | Anti-IgG | IgA | IgM | C3c | C3d | Ctrl |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lot No. | | | | | | | Result | | | | | | |

(Template Version 01/04)

Cross-Referenced in Primary Document SOP883



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NHSBT REAGENTS Panel 1

| Product | Lot No. | Product | Lot No. | Product | Lot No. |
|---|---|---|---|---|---|
| ID Panel in Alaevera | R144 3366 | ID Panel Papainised in Alaevera | R154 3366 | ID Panel in LISP | R140 3366 |
| ID Panel in CellStab | R143 3366 | ID Panel Papainised in CellStab | R153 3366 | Expiry Date : 2017.01.05 | |
| ID Panel in CellMedia | R163 3366 | ID Panel Papainised in CellMedia | R173 3366 | | |

| Patient's Name / D.O.B. | | Ref. No. | Sample No. | Conclusion / Tested by / Date |
|---|---|---|---|---|

Unless otherwise indicated, all cells are positive for $Kp^a$ and $Lu^a$ and negative for $Wr^a$ and $Co^a$.

Instructions for use can be found at http://www.blood.co.uk/reagents

| | Rh | C | D | E | c | e | $C^w$ | M | N | S | s | P1 | $Lu^a$ | K | k | $Kp^a$ | $Le^a$ | $Le^b$ | $Fy^a$ | $Fy^b$ | $Jk^a$ | $Jk^b$ | Other | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | $R_1^{w}R_1$ | + | + | 0 | 0 | + | + | + | + | 0 | + | 4 | 0 | + | + | 0 | + | 0 | 0 | + | + | 0 | | 0 | 0 |
| 2 | $R_1R_1$ | + | + | 0 | 0 | + | 0 | + | 0 | + | 0 | 3 | 0 | 0 | + | 0 | 0 | + | + | 0 | 0 | + | | 3 | 0 |
| 3 | $R_2R_2$ | 0 | + | + | + | 0 | 0 | 0 | + | 0 | + | 2 | 0 | 0 | + | + | 0 | + | + | 0 | 0 | + | | 3 | 0 |
| 4 | r'r | + | 0 | 0 | + | + | 0 | 0 | + | 0 | + | 2 | 0 | 0 | + | 0 | + | 0 | 0 | + | 0 | + | Kna- | 0 | 0 |
| 5 | r''r | 0 | 0 | + | + | + | 0 | + | 0 | + | 0 | 1 | 0 | 0 | + | 0 | + | 0 | 0 | + | + | 0 | | 0 | 0 |
| 6 | rr | 0 | 0 | 0 | + | + | 0 | + | 0 | + | 0 | 4 | 0 | + | 0 | 0 | 0 | + | + | 0 | 0 | + | | 3 | 0 |
| 7 | rr | 0 | 0 | 0 | + | + | 0 | 0 | + | 0 | + | 1 | 0 | + | + | 0 | 0 | + | + | w | 0 | + | | 3 | 0 |
| 8 | rr | 0 | 0 | 0 | + | + | 0 | + | + | 0 | + | 0 | 0 | 0 | + | + | + | 0 | + | 0 | + | 0 | | 3 | 0 |
| 9 | rr | 0 | 0 | 0 | + | + | 0 | + | 0 | 0 | + | 0 | + | 0 | + | 0 | 0 | + | 0 | + | 0 | + | | 0 | 0 |
| 10 | rr | 0 | 0 | 0 | + | + | 0 | 0 | + | + | 0 | 3 | 0 | 0 | + | 0 | 0 | + | 0 | + | + | 0 | | 0 | 0 |
| | | | | | | | | | | | | | | | | | | | | | | | ALCTD | 0 | / |
| | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | |

| Reagent | | | | | | | DAT Profile | Anti-IgG | IgA | IgM | C3c | C3d | Ctrl |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lot No. | | | | | | | Result | | | | | | |

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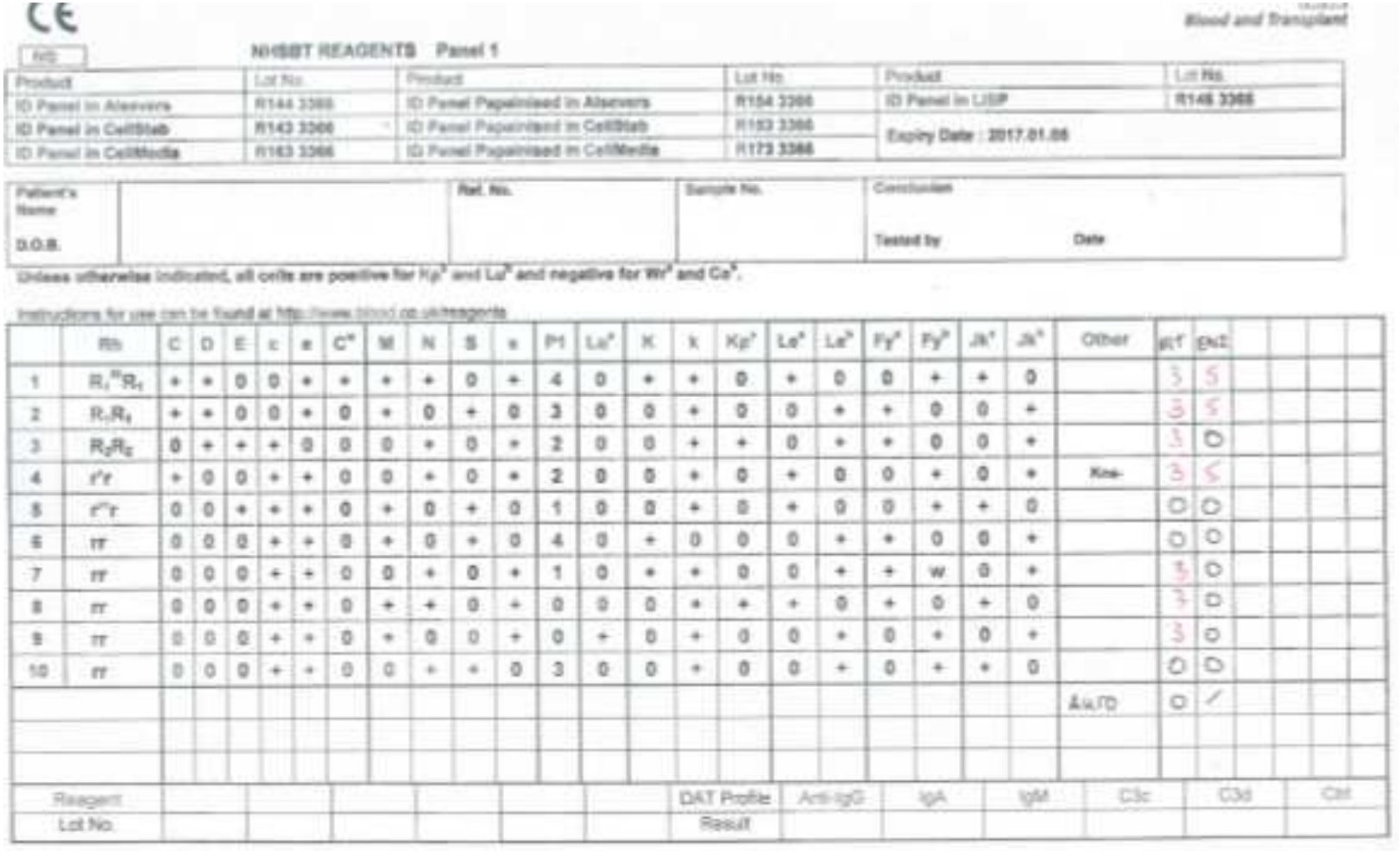

CE

Blood and Transplant

NHSBT REAGENTS Panel 1

| Product | Lot No. | Product | Lot No. | Product | Lot No. |
|---|---|---|---|---|---|
| ID Panel in Alsevers | R144 3366 | ID Panel Papainised in Alsevers | R154 3366 | ID Panel in LISP | R146 3366 |
| ID Panel in CellStab | R143 3366 | ID Panel Papainised in CellStab | R153 3366 | Expiry Date : 2017.01.05 | |
| ID Panel in CellMedia | R163 3366 | ID Panel Papainised in CellMedia | R173 3366 | | |

| Patient's Name | | Ref. No. | Sample No. | Conclusion |
|---|---|---|---|---|
| D.O.B. | | | | Tested by Date |

Unless otherwise indicated, all cells are positive for $Kp^a$ and $Lu^a$ and negative for $Wr^a$ and $Co^a$.

Instructions for use can be found at http://www.blood.co.uk/reagents

| | Rh | C | D | E | c | e | $C^w$ | M | N | S | s | P1 | $Lu^a$ | K | k | $Kp^a$ | $Le^a$ | $Le^b$ | $Fy^a$ | $Fy^b$ | $Jk^a$ | $Jk^b$ | Other | $\beta_1^r$ | $\beta_2^r$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | $R_1^{rr}R_1$ | + | + | 0 | 0 | + | + | + | + | 0 | + | 4 | 0 | + | + | 0 | + | 0 | 0 | + | + | 0 | | 3 | 5 |
| 2 | $R_1R_1$ | + | + | 0 | 0 | + | 0 | + | 0 | + | 0 | 3 | 0 | 0 | + | 0 | 0 | + | + | 0 | 0 | + | | 3 | 5 |
| 3 | $R_2R_2$ | 0 | + | + | + | 0 | 0 | 0 | + | 0 | + | 2 | 0 | 0 | + | + | 0 | + | + | 0 | 0 | + | | 3 | 0 |
| 4 | r'r | + | 0 | 0 | + | + | 0 | 0 | + | 0 | + | 2 | 0 | 0 | + | 0 | + | 0 | 0 | + | 0 | + | Kna- | 3 | 5 |
| 5 | r''r | 0 | 0 | + | + | + | 0 | + | 0 | + | 0 | 1 | 0 | 0 | + | 0 | + | 0 | 0 | + | + | 0 | | 0 | 0 |
| 6 | rr | 0 | 0 | 0 | + | + | 0 | + | 0 | + | 0 | 4 | 0 | + | 0 | 0 | 0 | + | + | 0 | 0 | + | | 0 | 0 |
| 7 | rr | 0 | 0 | 0 | + | + | 0 | 0 | + | 0 | + | 1 | 0 | + | + | 0 | 0 | + | + | w | 0 | + | | 3 | 0 |
| 8 | rr | 0 | 0 | 0 | + | + | 0 | + | + | 0 | + | 0 | 0 | 0 | + | + | + | 0 | + | 0 | + | 0 | | 3 | 0 |
| 9 | rr | 0 | 0 | 0 | + | + | 0 | + | 0 | 0 | + | 0 | + | 0 | + | 0 | 0 | + | 0 | + | 0 | + | | 3 | 0 |
| 10 | rr | 0 | 0 | 0 | + | + | 0 | 0 | + | + | 0 | 3 | 0 | 0 | + | 0 | 0 | + | 0 | + | + | 0 | | 0 | 0 |
| | | | | | | | | | | | | | | | | | | | | | | | Ā/u/D | 0 | ✓ |

| Reagent | | | | | | | DAT Profile | Anti-IgG | IgA | IgM | C3c | C3d | Ctrl |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lot No. | | | | | | | Result | | | | | | |

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| Product | Lot No. | Product | Lot No. | Product | Lot No. |
|---|---|---|---|---|---|
| ID Panel in Alsevers | R144 3366 | ID Panel Papainised in Alsevers | R154 3366 | ID Panel in LISP | R146 3366 |
| ID Panel in CellStab | R143 3366 | ID Panel Papainised in CellStab | R153 3366 | Expiry Date : 2017.01.08 | |
| ID Panel in CellMedia | R163 3366 | ID Panel Papainised in CellMedia | R173 3366 | | |

| Patient's Name | | Ref. No. | Sample No. | Conclusion |
|---|---|---|---|---|
| D.O.B. | | | | Tested by Date |

Unless otherwise indicated, all cells are positive for $Kp^b$ and $Lu^a$ and negative for $Wr^a$ and $Co^a$.

Instructions for use can be found at http://www.bloodbiotech.co.uk/reagents

| | Rh | C | D | E | c | e | $C^w$ | M | N | S | s | P1 | $Lu^a$ | K | k | $Kp^a$ | $Le^a$ | $Le^b$ | $Fy^a$ | $Fy^b$ | $Jk^a$ | $Jk^b$ | Other | IAT | EAT | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | $R_1^{w}R_1$ | + | + | 0 | 0 | + | + | + | + | 0 | + | 4 | 0 | + | + | 0 | + | 0 | 0 | + | + | 0 | | 0 | 0 | | 1 | |
| 2 | $R_1R_1$ | + | + | 0 | 0 | + | 0 | + | 0 | + | 0 | 3 | 0 | 0 | + | 0 | 0 | + | + | 0 | 0 | + | | 0 | 0 | | 0 | |
| 3 | $R_2R_2$ | 0 | + | + | + | 0 | 0 | 0 | + | 0 | + | 2 | 0 | 0 | + | + | 0 | + | + | 0 | 0 | + | | 0 | 0 | | 0 | |
| 4 | $r'r$ | + | 0 | 0 | + | + | 0 | 0 | + | 0 | + | 2 | 0 | 0 | + | 0 | + | 0 | 0 | + | 0 | + | Kna- | 0 | 0 | | 0 | |
| 5 | $r''r$ | 0 | 0 | + | + | + | 0 | + | 0 | + | 0 | 1 | 0 | 0 | + | 0 | + | 0 | 0 | + | + | 0 | | 0 | 0 | | 1 | |
| 6 | rr | 0 | 0 | 0 | + | + | 0 | + | 0 | + | 0 | 4 | 0 | + | 0 | 0 | 0 | + | + | 0 | 0 | + | | 0 | 0 | | 0 | |
| 7 | rr | 0 | 0 | 0 | + | + | 0 | 0 | + | 0 | + | 1 | 0 | + | + | 0 | 0 | + | + | w | 0 | + | | 0 | 0 | | 0 | |
| 8 | rr | 0 | 0 | 0 | + | + | 0 | + | + | 0 | + | 0 | 0 | 0 | + | + | + | 0 | + | 0 | + | 0 | | 0 | 0 | | 1 | |
| 9 | rr | 0 | 0 | 0 | + | + | 0 | + | 0 | 0 | + | 0 | + | 0 | + | 0 | 0 | + | 0 | + | 0 | + | | 0 | 0 | | 0 | |
| 10 | rr | 0 | 0 | 0 | + | + | 0 | 0 | + | + | 0 | 3 | 0 | 0 | + | 0 | 0 | + | 0 | + | + | 0 | | 0 | 0 | | 1 | |
| | | | | | | | | | | | | | | | | | | | | | | | Auto | 3 | / | | / | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| Reagent | | | | | | | DAT Profile | Anti-IgG | IgA | IgM | C3c | C3d | Ctrl |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lot No. | | | | | | | Result | 3+ | 0 | 0 | 0 | 0 | 0 |

0843

IVD

**Reference Panel 1 Profile**

*Blood and Transplant*

| NHSBT REAGENTS | | Product : | Panel 1 in Alasevers | Lot No : R201 3204 | Expiry date : 2016.12.22 |
|---|---|---|---|---|---|
| | | | Panel 1 in Cellstab | Lot No : R202 3204 | |

| Patient's Name | | Requester | | Hemato Ref No. | | Tested by | |
|---|---|---|---|---|---|---|---|
| Date of Birth | | Hosp No. | | Sample No. | | Date Tested | |

Unless otherwise indicated, all cells are positive for $Kp^a$ and $Lu^a$ and negative for $Vel^+$ and $Cs^a$.

| | Rh | C | D | E | c | e | $C^w$ | M | N | S | s | $P1$ | $Lu^a$ | K | k | $Kp^a$ | $Le^a$ | $Le^b$ | $Fy^a$ | $Fy^b$ | $Jk^a$ | $Jk^b$ | Other | gel | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | R1wR1 | + | + | 0 | 0 | + | + | 0 | + | 0 | + | 0 | 0 | 0 | + | 0 | + | 0 | 0 | + | 0 | + | Bgb+ | 0 | | | | |
| 2 | R1wR1 | + | + | 0 | 0 | + | + | + | 0 | + | 0 | 0 | 0 | 0 | + | 0 | 0 | + | + | 0 | + | 0 | Cob+ | 1 | | | | |
| 3 | R1R2 | + | + | + | 0 | + | 0 | + | + | 0 | + | 0 | 0 | 0 | + | 0 | 0 | + | 0 | + | 0 | + | | 0 | | | | |
| 4 | R1R2 | + | + | + | 0 | + | 0 | 0 | + | 0 | + | 4 | 0 | 0 | + | 0 | 0 | + | + | 0 | + | 0 | | 0 | | | | |
| 5 | R2r | 0 | + | 0 | + | + | 0 | + | 0 | 0 | + | 4 | 0 | 0 | + | 0 | 0 | + | 0 | 0 | + | 0 | Dob- Goa+ | 5 | | | | |
| 6 | R1R1 | + | + | 0 | 0 | + | 0 | 0 | + | + | 0 | 1 | 0 | + | 0 | 0 | 0 | 0 | w | 0 | 0 | + | | 0 | | | | |
| 7 | R1R1 | + | + | 0 | 0 | + | 0 | + | 0 | 0 | + | 0 | 0 | + | + | 0 | 0 | + | 0 | + | + | 0 | | 3 | | | | |
| 8 | R1R1 | + | + | 0 | 0 | + | 0 | 0 | + | 0 | + | 2 | 0 | 0 | + | + | 0 | + | + | 0 | + | 0 | | 0 | | | | |
| 9 | R1R1 | + | + | 0 | 0 | + | 0 | + | 0 | + | 0 | 3 | 0 | 0 | + | 0 | + | 0 | 0 | + | 0 | + | | 3 | | | | |
| 10 | R1R1 | + | + | 0 | 0 | + | 0 | + | + | 0 | + | 3 | + | 0 | + | 0 | 0 | + | + | 0 | 0 | + | Cob+ | 0 | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | Auto | 0 | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| Reagent | | | | | | | DAT Profile | Anti-IgG | IgA | IgM | C3c | C3d | Ctrl |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lot No. | | | | | | | Result | | | | | | |