

## Weak or Partial RhD Testing – Information Sheet

Updated November 2019 Version 2.0

The RhD antigen is clinically important in transfusion and pregnancy. Allo-immunisation to the antigen results in anti-D formation and its detection is critical in blood banking. Providing the correct blood for transfusion or management of pregnancy, relies on determining the RhD typing correctly.

The RhD antigen is typically detected by serological means using approved anti-D reagents. In some cases, weak or partial expression of the antigen will result in the serological tests giving weaker than normal results when compared to the controls. Knowing the reason for these weaker reactions is useful in determining whether RhD negative or positive blood is indicated for transfusion e.g. RhD weak D type 1, 2 or 3 may be safely given RhD positive blood. The provision of prophylactic anti-D immunoglobulin also relies on knowing the RhD status.

The detection and classification of these weak or partial RhD can often be achieved serologically using a range of monoclonal anti-D reagents. More frequently commercial partial D kits that comply with IVD requirements are becoming difficult to source. Where serological typing is not possible, then, *RHD* genotyping can be performed to determine the *RHD* status.

### Clinical Indications

Weak or partial RhD expression from the following group of patients should have their RhD determined further into either weak D or partial D variants:

- female of child bearing age;
- long term transfusion dependent; and
- Patients with haematological disorders that may impact blood group antigen expression.

### Sample Requirements

- EDTA blood (5mL as a minimum)
- Age of sample as fresh as possible
- Samples must be labelled with a minimum of 2 identifiers (3 identifiers preferred)
- Samples must be provided with completed Red Cell Reference Laboratory request form with a minimum of 3 identifiers and include the tests requested, referring organisation's contact details and any relevant clinical information.
- The identifiers on the sample must match the request form exactly

Samples should be sent packaged with a cold ice-brick to the regional Red Cell Reference Laboratory, via the address below as soon as possible following collection. Where there is a delay in transport (more than 12 hours from collection) the sample should be refrigerated. To provide a faster turn around time, samples may be sent directly to the QLD Red Cell Reference Laboratory where *RHD* genotyping is performed.

Region	Delivery Address	Phone	Fax
NSW ACT NT	NSW Red Cell Reference Laboratory Australian Red Cross Lifeblood Dock A – Blood In, 17 O’Riordan St Alexandria NSW AUSTRALIA 2015	+61 2 92342189	+61 2 92342193
QLD	QLD Red Cell Reference Laboratory Australian Red Cross Lifeblood 44 Musk Avenue (delivery via Blamey Street) Kelvin Grove, Queensland, AUSTRALIA 4059	+61 7 38389493	+61 7 38389410
VIC TAS SA	VIC Red Cell Reference Laboratory Australian Red Cross Lifeblood 100-154 Batman Street, West Melbourne, Victoria, AUSTRALIA 3003	+61 3 96940282	+61 3 96940331
WA	WA Red Cell Reference Laboratory Australian Red Cross Lifeblood 290 Wellington St Perth, Western Australia AUSTRALIA 6000	+61 8 94212864	+61 8 94212375

## Reporting

It is expected that results will be reported within 5 working days from receipt of the sample. If *RHD* genotyping is required, a further separate report will follow when testing is completed. PDF reports will be provided via a secure portal (SecureSend) using the supplied email addresses. Due to strict data security compliance, reports will only be provided by fax in urgent scenarios.

## Enquiries

Please contact your local regional Red Cell Reference Laboratory.

	NSW/ACT/NT	QLD	VIC/TAS/SA	WA
Phone	+61 2 9234 2189	+61 7 3838 9493	+61 3 9694 0282	+61 8 9421 2864
Fax	+61 2 9234 2193	+61 7 3838 9410	+61 3 9694 0331	+61 8 9421 2375
Email	<a href="mailto:RedCellReferenceEnquiriesNSW@redcrossblood.org.au">RedCellReferenceEnquiriesNSW@redcrossblood.org.au</a>	<a href="mailto:RedCellRedLab@redcrossblood.org.au">RedCellRedLab@redcrossblood.org.au</a>	<a href="mailto:RedCellReferenceEnquiriesVIC@redcrossblood.org.au">RedCellReferenceEnquiriesVIC@redcrossblood.org.au</a>	<a href="mailto:redcellreferenceenquiriesWA@redcrossblood.org.au">redcellreferenceenquiriesWA@redcrossblood.org.au</a>