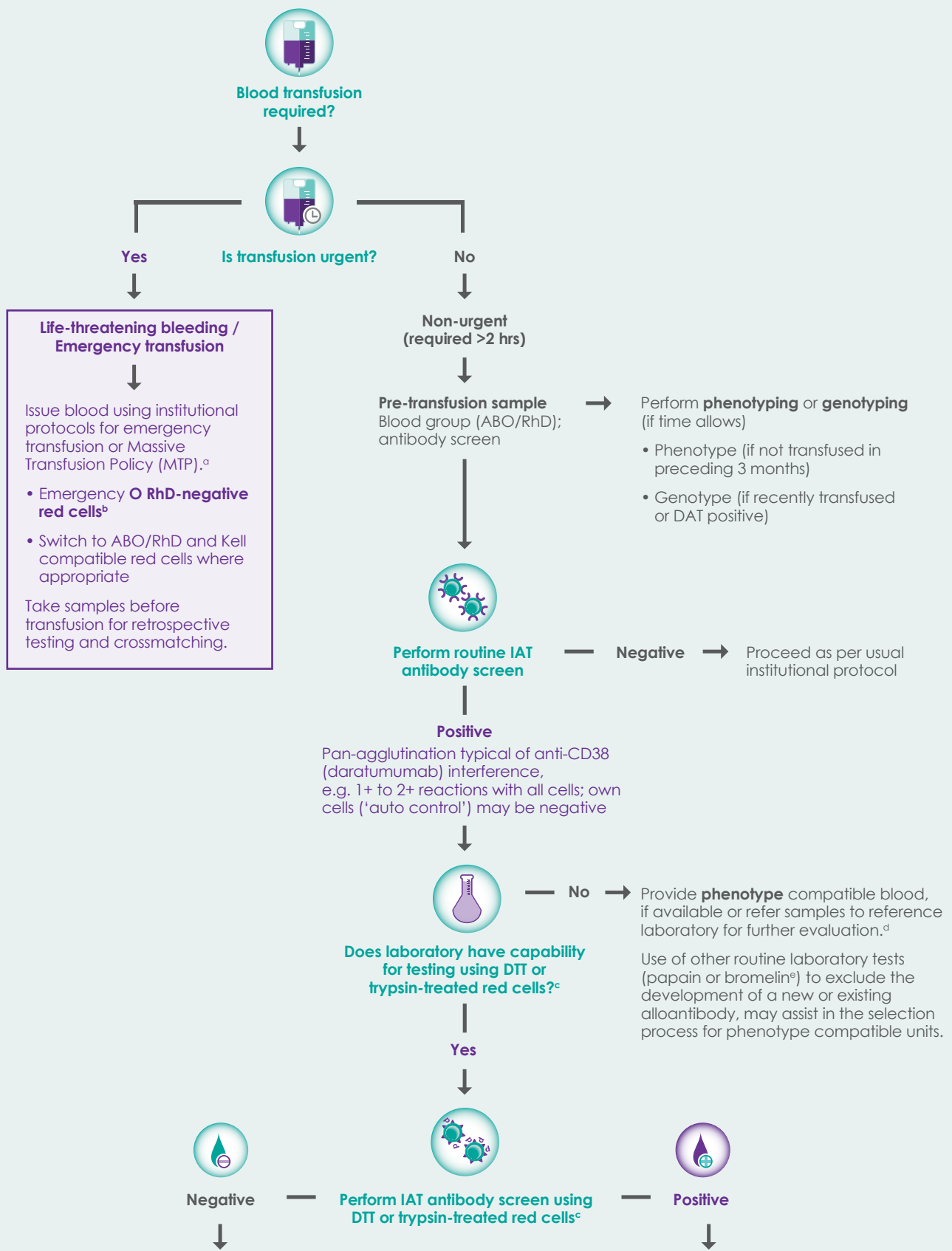


CONSIDERATIONS FOR PRE-TRANSFUSION IMMUNOHAEMATOLOGY TESTING IN PATIENTS RECEIVING ANTI CD-38 MONOCLONAL ANTIBODY THERAPY¹



- Assume no clinically significant red cell alloantibody/ies
- Cannot exclude antibodies to antigens denatured by chosen treatment method (see **Table 1**)
- Transfuse ABO/RhD compatible blood and blood compatible for any significant antigens destroyed by the method used e.g. **Kell compatible** for DTT methods (see **Table 1**)
- Consider selecting blood matched to patient's extended **phenotype / genotype**, particularly if long-term transfusion support anticipated
- Abbreviated crossmatch (eXM or IS) and issue blood by usual protocol
- If IAT crossmatch used – will be positive unless donor cells are treated with DTT or trypsin

- Suggests presence of red cell alloantibody/ies
- Identify antibody/ies using DTT or trypsin-treated ID antibody panel – may require investigation by a Reference Laboratory
- Cannot exclude alloantibodies against antigens denatured by chosen treatment method (see **Table 1**)
- Select blood that is compatible for antibody/ies and antigens denatured by chosen treatment method, e.g. **Kell compatible** for DTT methods (see **Table 1**)
- If alloantibody cannot be identified for any reason, consider selecting blood matched to patient's extended **phenotype/genotype**, particularly if long-term transfusion support anticipated^d
- Full IAT crossmatch – will be positive unless donor cells are treated with DTT or trypsin

Table 1: Antigens denatured or weakened by treatment with DTT or proteolytic enzymes^{2,3}

DTT	Trypsin	Papain/Bromelin
Kell (K, k, Kp ^a , Kp ^b , Js ^a , Js ^b , Ku)	Cartwright (Yt ^a)	Duffy
Cartwright (Yt ^a)	Indian	MNSs, 'N'
Indian	JMH	Indian
JMH	Ge2, Ge3, Ge4	JMH
Scianna	Dombrock	Bp ^a
LW	Bp ^a	Ch/Rg
Lutheran	Ch/Rg	Xg ^a
MER2	Xg ^a	En ^a TS, En ^a FS
Ge3	MN	Ge2, Ge4
Dombrock	En ^a TS	Fy ^a , Fy ^b , Fy ⁶
Diego (some antigens)	Lutheran	Yt ^a
Cromer	Mer2	
	Knops	

^aRefer to ANZSBT Guidelines for Transfusion and Immunohaematology Laboratory Practice

^bO-negative blood is not without risk and may not be suitable in all circumstances, e.g. patient has anti-c or anti-e antibodies

^cTests using DTT or trypsin-treated red cells are published methods for resolving anti-CD38 (daratumumab) interference, however, testing may not be available in all laboratories and/or subject to regulatory restrictions

^dExtended phenotype/genotype, including, as a minimum: **Rh** (C, c, D, E, e), **K**, **Jk^a**, **Jk^b**, **Fy^a**, **Fy^b** and **Ss**

^ePapain and bromelin are not IAT methods for crossmatching purposes

Download Quach H et al. *IMJ* 2018.¹

DAT: direct antiglobulin test. Rh: rhesus. IAT: indirect antiglobulin test. DTT: dithiothreitol. eXM: electronic crossmatch. IS: immediate-spin tube technique. ID: identification. ANZSBT: Australian & New Zealand Society of Blood Transfusion.

Janssen provided the funding for this independent authorship group to meet and develop these guidelines. Janssen reproduced this flow chart to provide a quick reference guide to management of blood compatibility testing when patients may be treated with CD-38 monoclonal antibody medication.

References: 1. Quach H et al. *IMJ* 2018;48:210–20. 2. Branch DR et al. *Br J Haematol* 1983;54:573–8.

3. Reid ME et al. *The Blood Group Antigen FactsBook*. 3rd Edition. 2012.

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