

## ID-Titration Solution

Precision at the Heart of Concentration



# ID-Titration Solution



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The ID-Titration Solution is a dilution medium intended to be used for the titer determination of antibodies in patient and donor samples with the ID-System.

It brings a high level of standardization and is specifically designed for the ID-System.

- Standardized medium designed for ID-Cards
- For IgG or IgM titration procedures
- Usable in LISS/Coombs, Coombs Anti-IgG and NaCl, Enzyme Test and Cold Agglutinins ID-Cards
- Suitable for any kind of titration including anti-A and anti-B titration<sup>1</sup>
- Usable with all our native ID-cells including reverse, screening, identification, extended panel kits as well as with your own laboratory cells

Combined with the ID-Titration racks, the ID-Titration Solution can be used with IH-500 which leads to a higher accuracy in the dilution procedure and a better reliability of the overall titration process.

- Fully automated on IH-500 and fully integrated with IH-Com
- For a better accuracy, traceability and reliability



ID-Titration Rack

## General Background

A titration is a semi quantitative method undertaken to support the prediction and management of hemolytic disease of fetus and newborn (HDFN) and ABO mismatched organ transplant<sup>2</sup>.

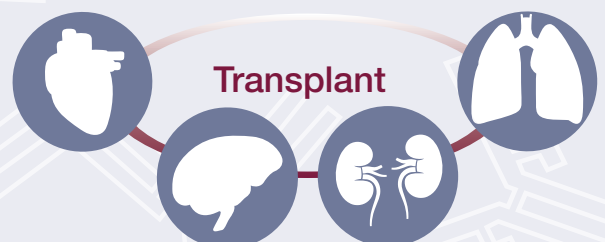
During pregnancy, when an antibody of potential clinical significance is detected and identified, this measurement is an important part of predicting whether this antibody is capable of causing HDFN.

In case of ABO mismatched transplant, a titration is carried out to allow critical assessment of the feasibility and monitoring of treatment to reduce antibody titre.

Other clinical scenarios may require titration of the patient sample. For example\*:

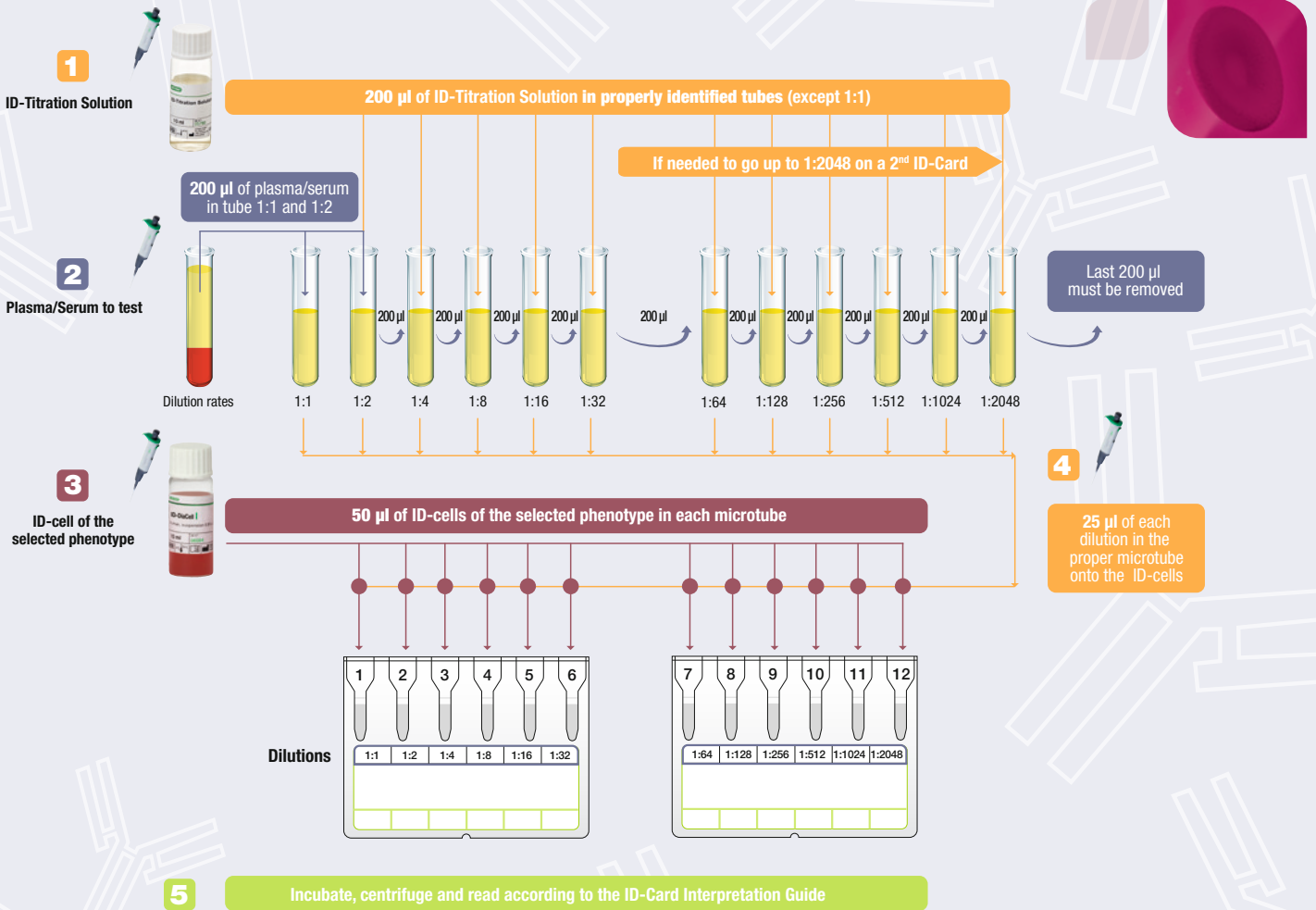
- Semi-quantification of an antibody by micro-titration compared to dilutions of a standard of a known concentration<sup>3</sup>
- Assessment of either the characteristics of a new antiserum or the antigen site density of red blood cells
- Determination of the relative specificity of autoantibodies in warm antibody immune haemolytic anaemia (WAIHA)
- Investigation of so-called high titre low avidity "HTLA" antibodies. For example, antibodies known to belong to the Knops blood group system<sup>4/5</sup>
- Determination of the titer, specificity and thermal amplitude of a cold auto antibody for example anti-I

*\*List not exhaustive*



# Manual Method

The ID-Titration Solution is used for the two fold serial dilution of plasma/serum prior to their antibody titration in ID-Cards as shown below in the 5 steps scheme.



## Example of Results

Example of 3 antibodies of different strengths, titre value and titre score but with the same end point. Scoring system for these examples from strongest (12) to negative reactions (0).

<b>Samples 1 &amp; 2</b>	Could be parallel titrations of an antibody implicated in HDFN
<b>Sample 2</b>	Most recent sample, shows a significant rise in the titre score value
<b>Sample 3</b>	Shows an antibody of high titre but low avidity which is reflected in the reaction grades and the final end point

	Dilutions	1:1	1:2	1:4	1:8	1:16	1:32	1:64	1:128	1:256	1:512	1:1024	1:2048	Titre	End point	Score
<b>Sample 1</b>	Grade	3+	3+	3+	2+	2+	2+	1+	+/-	+/-	-	-	-	64		
	Value	10	10	10	8	8	8	5	2	2	0	0	0		1:256	63
<b>Sample 2</b>	Grade	4+	4+	4+	3+	3+	3+	2+	1+	+/-	-	-	-	128		
	Value	12	12	12	10	10	10	8	5	2	0	0	0		1:256	81
<b>Sample 3</b>	Grade	1+	1+	1+	1+	+/-	+/-	+/-	+/-	+/-	-	-	-	8		
	Value	5	5	5	5	2	2	2	2	2	0	0	0		1:256	30

## Main Features

- Standardized medium designed for ID-Cards
- For IgG or IgM titration procedures
- Usable in LISS/Coombs, Coombs Anti-IgG and NaCl, Enzyme Test and Cold Agglutinins ID-Cards
- Suitable for any kind of titration including anti-A and anti-B titration
- Usable with all our native ID-cells including reverse, screening, identification, extended panel kits as well as with your own laboratory cells
- Fully automated on IH-500 and fully integrated with IH-Com
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## Ordering Information

Catalog #	Description
009360	<b>ID-Titration Solution</b> (Id-n°: 05780), 10 x 10 ml
009390	<b>ID-Titration Racks</b> (Id-n°: 05770), 10 racks of 60 wells

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IH-500 and IH-Com are trademarks of Bio-Rad Europe, GmbH in certain jurisdictions.

## Literature

1. *A WHO reference reagent to standardize haemagglutination testing for anti-A and anti-B in serum and plasma: international collaborative study to evaluate a candidate preparation.* Thorpe SJ, Fox B, Sharp G, White J, Milkins C
2. *Joint United Kingdom (UK) Blood Transfusion and Tissue Transplantation Services Professional Advisory Committee/Guidelines for the Blood Transfusion Services/Chap. 13.4: Antibody quantification and titration*
3. *Microtitration of anti-RH1 antibodies: Interest in the follow-up of pregnant women.*, M. Dupont, J. Gouvitsos, I. Dettori, J. Chiaroni, V. Ferrera, *Service d'immunohématologie clinique, Établissement français du sang Alpes-Méditerranée, site de Marseille-Baille, 149, boulevard Baille, 13005 Marseille, France*
4. *Reid ME, Lomas-Francis C, Olsson ML. Knops Blood Group System. In: Reid ME, Lomas-Francis C, Olsson ML, editors. The blood group antigen facts book. 3rd ed. London: Elsevier, 2012. p. 549-55*
5. *Rolih S. A review: antibodies with high-titer, low avidity characteristics. Immunohematol. 1990; 59-67*

Visit [www.bio-rad.com/immunohematology](http://www.bio-rad.com/immunohematology) for more information.



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