



Reti-TIC®

Single Tests for Quick, Simple, Clean and Precise Counting of Reticulocytes.

Product information for visual microscopic counting of reticulocytes.

Principle

Visualization of erythrocyte regeneration by counting of reticulocytes after supravital staining of substantia granulofilamentosa (ribonucleoproteins) on fresh, non-fixed and juvenile erythrocytes.

The four stages of substantia granulofilamentosa maturation are coiled skein (I), incomplete reticulation (II), complete reticulation (III) and granular form (IV). In peripheral blood mostly stages III and IV are found.

Erythrocytes (red blood cells; RBCs) stained with Reti-TIC® are light green, reticulocytes have blue-green granules or reticulation.

The microscopic counting of reticulocytes will be made in relation to 1000 RBCs after supravital staining of smear.

Reti-TIC® for reticulocytes counting allow quick, uncomplicated, clean and precise counting. Each Reti-TIC® tube contains 100 µL staining solution. 100 µL blood is used.

Reagents

Reti-TIC® are ready for use and have a shelf life at room temperature (+15...+25 °C) up to the imprinted expiry date.

Remove tube only for direct use. Storage of the tubes only in its original packaging and at a dark place. Reclose sachet with a clip.

Note: Storage lower than approx. +10 °C may effects insoluble precipitations of dye pigments. In this case discard the tubes. Slight crystalline precipitations are normal due to the high dye concentration as far as they do not disturb the microscopic picture.

Risks and Safety

Please observe the necessary precautions for use of laboratory reagents and body fluids. Applications should be performed by expert personnel only. Follow the national and laboratory internal guidelines for work safety and infection control. Wear suitable protective clothing and disposable gloves while handling.

It is important to ensure effective protection against infection according to laboratory guidelines.



www.sds-id.com

For additional safety information please refer to the information on the label and the corresponding Safety Data Sheet (SDS).

The safety settings were made according to legal guidelines. If there are differences in the labeling or the safety information between the label and SDS, the details of the SDS are valid. Download by QR code or link: www.sds-id.com/100040-6

Contents/Main Components

004016-... [Cont.] C.I. 51010 0,50% and C.I. 52040 0,25% in isotonic solution

004016-0006 SET Reti-TIC® • Single test

004016-4100 1. 100x 100 µL Reti-TIC®
Packed in styrofoam racks.

004016-6010 SET Reti-TIC® • Small package

004016-4100 1. 10x 100 µL Reti-TIC®
Packed in aluminium foil sachet.

Additional required or recommended materials and equipment

Microscopic slides

Microscope for use in biomedical laboratory (see also Information).

Sample Material

K₂- or K₃-EDTA blood, in exceptional cases capillary blood.

For sample collection, storage and labeling follow the standards of technology procedures and the corresponding instructions.

Reference Ranges

	[% Reti]	Reti/µl
Neonates:	20 ... 60	100000 ... 300000
Adults:	5 ... 15	25000 ... 75000

Procedure

The tubes must be clearly labeled for identification.

Dispense 100 µL blood with a pipette into the Reti-TIC® tube. Mix content by repeated aspirating and dispensing of the pipette tip. After about 20 ... 30 minutes, mix and prepare a thin blood smear on a slide. Let the blood smear dry at normal room conditions.

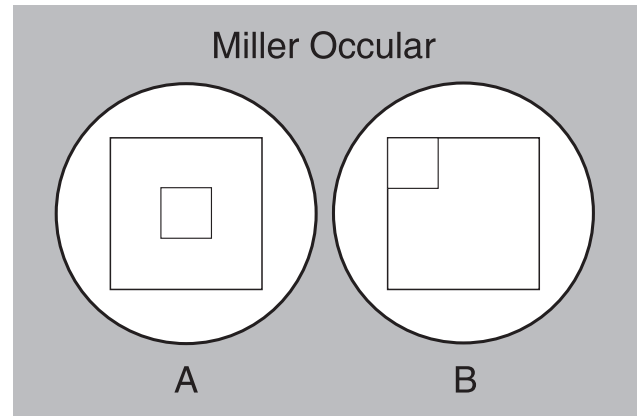
Count the reticulocytes in relation to 1000 erythrocytes with oil immersion, following a meandering pattern.

Miller Occular *1)

A great simplification of the counting is obtained with the Miller Occular. The figure below shows 2 different usual designs. The position of the small squares in type B depends on the rotation of the occular in the microscope in one of the four corners.

The area of the small square is 1/9 of the large square.

The reticulocytes are counted per field of view within the entire large square, the erythrocytes are counted only in the small square. The fields of vision are changed meandering until at least 200 erythrocytes are reached.



Examination/Calculation

Relative calculation = ‰

The result of reticulocytes counting is mostly expressed as parts per thousand (‰) relatively to the count of RBC.

Calculation without Miller Occular

$$(\text{Reticulocytes} \times 1000) / \text{Erythrocytes} = \text{relative Reticulocytes } [\text{‰}]$$

Calculation with Miller Occular

$$(\text{Reticulocytes} \times 1000) / (\text{Erythrocytes} \times 9) = \text{relative Reticulocytes } [\text{‰}]$$

Absolute calculation = Reticulocytes/ μl

Ist die Erythrozytenzahl zu niedrig, wird auch die relative Retikulozytenzahl zu niedrig eingeschätzt. Daher ist die Umrechnung in absolute Retikulozyten pro μl Blut erforderlich. Hierzu wird zusätzlich mit Ery-TIC® die Erythrozytenzahl in der Zählkammer bestimmt.

If the erythrocyte count is too low, the relative reticulocyte count is also underestimated. Therefore, the conversion into absolute reticulocytes per μl of blood is necessary. For this purpose, the erythrocyte count with Ery-TIC® in the counting chamber is additionally determined.

$$\text{Erythrocytes}/\mu\text{l} \times \text{Reticulocytes } [\text{‰}] / 1000 = \text{Reticulocytes}/\mu\text{l}$$

Diagnostics

Valid nomenclatures must be used. Diagnoses must only be made by authorized and trained personnel. When required further tests must be selected and performed according to acknowledged methods.

Quality Controls and Proficiency Test

Exceptions to the quality assurance obligation

Unit-use reagents are portioned for single determination and are consumed with single determination. Such unit-use reagents are usually exempt from the requirements of internal and external quality control. This is subject to the condition that the reagent is used exactly in accordance with the manufacturer's instructions.

Please observe the national quality assurance guidelines.

Quality controls

A suitable control material can be used to check precision and accuracy. All common control blood samples (or interlaboratory samples) can be used that

- are suitable or designated for visual microscopic counting of leukocytes.

Pay attention to the corresponding data of the control blood manufacturer. Control bloods intended only for automatic counting devices may not be suitable.

Specific features

Control blood cells mostly contain stabilized cells with denatured cell membranes or they contain replacement cells (e.g. nucleated avian erythrocytes instead of mammalian leukocytes). This may cause the microscopic appearance to differ from that of fresh human or mammalian blood.

Note:

Resuspend control blood very carefully before each opening. Please note the information for the control blood. Use a cell-friendly mixing device (e.g. roller mixer).

Notes

This product information exclusively relates to the product described in this leaflet. In particular, this product information cannot be applied to similar reagents from other manufacturers.

Classifications

Not for human diagnostics.

Instruction for Use

For professional use only.

To avoid errors, the use of qualified personnel is carried out. National guidelines for work safety and quality assurance must be followed.

The used equipment must comply with the state of technology and the laboratory requirements.

All samples and used tubes/vials must be marked clearly identifiable to exclude any confusion.

Support/Infoservice

For methodological and technical support, please contact us by E-Mail at support@bioanalytic.de.

Periodically check for updates of this product information on our website.

Waste Management

Please observe your national laws and regulations.

Used and expired solutions must be disposed of in accordance with your local regulations.

Inside the EU, national regulations apply that are based on the current, amended version of Council Directive 67/548/EEG on the approximation of the laws, regulations and administrative provisions relating to the classification, packaging and labelling of dangerous substances.

Decontaminated packaging can be disposed of as household waste or recycled, unless otherwise specified.

Literature & Footnotes

Legends for the graphic symbols and tags used follow relevant norms or are available on our internet pages.

*1) Miller oculars (magnification 10 \times) are available for all common microscopes.

[1] Rick, Klinische Chemie und Mikroskopie, 24(1977), Springer Verlag Berlin.