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Ery-TIC®

1:200

Single Tests for Quick, Simple, Clean and Precise Counting of Red Blood Cells.

Product information for quantitative visual microscopic counting of red blood cells (RBCs) with Ery-TIC®.
Ery-TIC® contains EryCount® »pur« reagent solution , an improved version of Hayem's reagent.

Intended Purpose

Ery-TIC® is used for accurate dilution of the sample for microscopic examination of the erythrocyte count in blood. It is a ready-to-use solution that makes the sample evaluable for diagnostics and makes the shape and structure more recognizable by an authorized and qualified person.

Principle

Microscopic counting of red blood cells (RBCs) in a counting chamber after dilution with hypertonic and cell fixing solution.
Ery-TIC® allows quick, easy, clean and precise processing of samples. The Ery-TIC® tubes are prefilled with EryCount® solution. 5 µL of blood are used (dilution 1:200).

Reagent

The Ery-TIC® are ready for use.
Remove individual tubes only for use. Store Ery-TIC® tubes at a dark place (closed box) and upright in their package.
Do not use if reagent is not clear, colorless, free of particles, or if crystallizations are present.

Expiry Date, Shelf life after opening, Storage

EXP DATE Expiry date see product label.

At the storage temperature indicated on the label the reagent has a shelf life until the printed expiry date.

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.
Use a capillary holder for volume capillaries.

SDS ID International
www.sds-id.com

For additional safety information please refer to the information on the label and the corresponding Safety Data Sheet (SDS).
Download by QR code or link: www.sds-id.com/100036-2

Contents / Main Components

004012-4995	Cont.	mod. Hayem's Reagenz Na_2SO_4 / NaCl-Buffer 530 mosm/kg, $HgCl_2$ 2.5 g/l.
004012-0007	**KIT**	**Ery-TIC® 1:200 plus • Single test with capillaries**
004012-4995	1.	100× 995 µl Ery-TIC® 1:200 Packed in styrofoam racks.
ETE005-0100	2.	100× 5 µL End-to-end volume capillaries
KFK-0100	3.	100× Chamber filling capillaries
004012-0006	**SET**	**Ery-TIC® 1:200 • Single test w/o capillaries**
004012-4995	1.	100× 995 µl Ery-TIC® 1:200 Packed in styrofoam racks.
004012-6010	**SET**	**Ery-TIC® 1:200 • Small package w/o capillaries**
004012-4995	1.	10× 995 µl Ery-TIC® 1:200 Packed in aluminium foil sachet.

Replacement pack optional

TIC-CP05	SET	TIC 5µl Capillary pack
ETE005-0100	1.	100× 5 µL End-to-end volume capillaries
KFK-0100	2.	100× Chamber filling capillaries

Do not use other capillaries that are not intended for this TIC test kit.

Additionally required or recommended materials

099920-0001	Capillary Holder *
CC-NEUI	Counting Chamber Neubauer "improved" *
	Microskope for laboratory use

* Available from Bioanalytic GmbH.

Sample Material

Process fresh capillary blood immediately after collection. K_2- or K_3-EDTA blood can be processed within max. 24 hrs when stored closed at +4 ... +8 °C. Do not freeze!
Count samples diluted with Ery-TIC® within 48 hrs. Resuspend the cells before use.
For sample collection, storage and labeling follow the standards of technology procedures and the corresponding instructions.

Reference Ranges

Capillary-/EDTA-blood	[10^6/µL]
Neonates:	4.5 ... 7.0
Children:	4.0 ... 5.5
Men:	4.5 ... 6.0
Women:	4.0 ... 5.5

Procedure

Using capillary pipettes

Fill a 5 µL end-to-end volume capillary bubble-free with blood from end to end. We recommend using a capillary holder for this (see ordering Information). Discard the first drop of capillary blood. Remove blood on the outside with a lint-free tissue without sucking blood from the capillary.
Place filled volume capillary into the opened tube, close and shake vigorously until all blood is flushed from the capillary. Leave capillary in the tube.
Shake the tube once more before loading the counting chamber. Fill the chamber filling capillary about a quarter to half its length by capillary action and seal the upper end with your finger. Touch the tilted capillary (narrow angle) against the edge of the cover slip and load the counting chamber.
Let the RBCs sediment for about 3 minutes in the horizontally positioned hemocytometer before counting cells.

Using automatic micropipette

Only appropriately trained laboratory staff should use this method!
Instead of end-to-end and chamber filling capillaries use an adequate automatic micropipette (only when working with EDTA blood). Proceed as outlined above for the capillaries. Flush pipette tip sufficiently with the reagent solution. Shake the tube once more before loading the counting chamber.

Bioanalytic GmbH
● biomedical & analytical chemical reagents • medical laboratory diagnostics
● in vitro diagnostics (IVD) • biomedical science & analysis technology
● Waldmatten 10-13 • 79224 Umkirch/Freiburg i. Br. • Germany

Phone: +49 7665 5951
Fax: +49 7665 5683
E-Mail: office@bioanalytic.de
Internet: www.bioanalytic.de

Analysis / Calculation

For microscopic counting, use phase-contrast optics or bright field (lowered condenser) at 400× magnification.

Neubauer "improved" counting chamber:

Count 5 group squares (16 smallest squares each) diagonally across the center group square for 80 total squares. In border fields of group squares, count up to the center line.

Total count in 5 group squares × 10'000 = RBC/µL blood

Neubauer and Thoma counting chamber:

Count 5 group squares (16 smallest squares each) for 80 total squares. Use the four group squares in each corner and one in the center.

Total count in 5 group squares × 10'000 = RBC/µL blood

Diagnosis

Diagnoses are to be made only by authorized and qualified persons. This method is to be used as a supplement in human diagnostics. For a final diagnosis, further tests are to be performed according to recognized, valid methods.

Capability Characteristics

The method is an absolute (counting) method. It is traceable to the dilution and volume of the counting chamber.

Ery-TIC® clearly outperforms the (outdated) method using Hayem's reagent and dilution with blood mixing pipettes (see tables below).

Limitations

Strongly increased or decreased cell numbers can make correct cell counting difficult. In these cases, choose a suitable dilution, which needs to be included in the calculation.

Precision Ery-TIC®

Intra-assay n = 25	Mean [10^6/µl]	SD [10^6/µl]	CV [%]
Sample 1	6.09	0.293	4.81
Sample 2	4.50	0.216	4.81

Precision Hayem's Reagent and blood mixing pipette

Intra-assay n = 25	Mean [10^6/µl]	SD [10^6/µl]	CV [%]
Sample 1	6.26	0.719	11.49
Sample 2	4.59	0.503	10.97

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.

Instruction for Use

For professional use only.

To avoid errors, the use of qualified personnel is carried out. Double determinations are always advisable. 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.

Classifications

EU: EDMA: 13 01 09 90 00; IVD Class A (in vitro diagnostic medical device). Basis UDI: 4061609-0003-NT.
AU: Class 1; IVD.
CA: HC: Class I; exempt; for in-vitro diagnostic use.
US: FDA: JCG; Class I; exempt; for in-vitro diagnostic use.

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.

Feedback

Information from users can be reported to support@bioanalytic.de.

Suggestions will be considered for further development.

If a serious incident has occurred during or as a result of use, please report it to the manufacturer and/or its authorized representative and to your national authority.

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 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] German Industrial Norm DIN 58932
[2] Wintrobe, Clinical Hematology, S. 1795 (1974), Lea & Febiger Philadelphia.
[3] Rick, Klinische Chemie und Mikroskopie, 24 (1977), Springer Verlag Berlin.