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Leuko-TIC® VT

1 : 20 • Viability Test for WBCs (White Blood Cells).
Single Tests for Quick, Simple, Clean and Precise Counting of VT-WBCs.

Product information for quantitative visual microscopic counting the viability of white blood cells (WBCs) on the basic of Trypane blue staining.

This test kit is specially designed for leukocytes in blood. Erythrocytes are largely eliminated. To count the viability of other cells, especially selected cells, use the Viability-TIC optimized for this purpose.

Intended Purpose

Leuko-TIC® VT is used for accurate dilution of the sample for microscopic examination of the viability of white blood cells. 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 alive and dead white blood cells (WBCs) in the counting chamber after lysis of the Red Blood Cells (RBCs). The cells appear distinctly in front of a clear, slight blue background.

Leuko-TIC® VT for viability WBC counting allow quick, uncomplicated, clean, and precise method of operation. The Leuko-TIC® VT tube contains 360 µL Leuko-TIC® VT solution. Sample volume amounts to 20 µL blood and 20 µL staining solution (dilution 1 : 20).

Reagents

Leuko-TIC® VT 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 use. Store tubes at a dark place (closed box) and upright in the package.

Do not use if reagent is not clear and colorless (except Leuko-TIC® VT staining solution) and free of particles.

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 and general safety information please see details on the label and the corresponding Safety Data Sheet (SDS).

Download by QR code or link:

www.sds-id.com/100035-3 (Leuko-TIC VT Counting Solution)

www.sds-id.com/100176-1 (Leuko-TIC VT Trypanblau)

Contents / Main Components

004006-...	Cont.	1 % ammonium oxalate solution.
080203-...	Cont.	activated Trypane blue solution 0.4 %.
004005-6100	**KIT**	**Leuko-TIC VT • Single test with capillaries**
004006-4360	1.	100× 360 µl Leuko-TIC® VT 1 : 20 Packed in styrofoam racks.
080203-0002.B	2.	1× ≥2.0 ml Leuko-TIC® VT staining solution
ETE020-0100	3.	2× 100 pcs End-to-end volume capillaries 20 µL.
KFK-0100	4.	1× 100 pcs Chamber filling capillaries.
004005-6010	**SET**	**Leuko-TIC VT • Small package w/o capillaries**
004006-4360	1.	10× 360 µl Leuko-TIC® VT 1 : 20 Packed in aluminium foil sachet.
080203-4250.B	2.	1× ≥0.2 ml Leuko-TIC® VT staining solution

Replacement pack optional

TIC-CP20	SET	TIC 20 µL Capillary Pack, containing:
ETE020-0100	1.	1× 100 pcs End-to-end volume capillaries 20 µL.
KFK-0100	2.	1× 100 pcs Chamber filling capillaries.

Do not use other capillaries which are not approved for this TIC test kit.

Additionally required or recommended materials

099920-0001	Capillary holder *.
CC-NEUI / CC-NEUIB	Counting Chamber Neubauer "improved" *. Microscope for use in biomedical laboratory.

* Available from Bioanalytic GmbH.

Sample Material

Process fresh capillary blood or K_2- or K_3-EDTA blood immediately after collection.

Reference Ranges

Capillary- / EDTA-blood	[10^9/L = 10^3/µL total WBC]
Neonates:	10.0 ... 30.0
Nurselings:	7.0 ... 17.0
Infants:	6.0 ... 15.0
Scholars:	5.0 ... 12.0
Adults:	4.0 ... 9.0

The ratio of alive/dead WBCs is depending on unknown factors and should be referenced to special literature.

Procedure

Using capillary pipettes

Fill a 20 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 outside adhesive blood with a lint free tissue - don't change the blood volume. Add the filled volume capillary to the opened tube, close and shake very well until all blood has been removed out of the capillary. Wait for 5 ... 10 minutes for complete lysis of RBCs. Don't remove the capillary from the tube. Fill up a new 20 µL end-to-end volume capillary bubble-free with the Leuko-TIC® VT staining solution from end to end. Use also the capillary holder. Put the filled volume capillary additional into the same tube. Close and shake well until all staining solution has been removed from the capillary. Wait another 1 ... 5 minutes and count immediately.

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. Count cells immediately.

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.

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Examination / calculation

For microscopic counting, use phase-contrast optics or bright field (lowered condenser) at 100× magnification.

Alive WBCs appeared brightly. Dead WBCs appeared blue. Often the morphology of dead WBCs looks with indistinct cell membrane structures.

Neubauer "improved" or Neubauer counting chamber

Count the WBCs (alive and dead separately) of the 4 large corner squares of each 1 mm^2 surface, consisting of 4 × 4 squares. If the Neubauer „improved" counting chamber is used count cells up to the center line.

aWBC count of the 4 large corner squares × 0.05 = aWBC ×10^9/L blood
aWBC count of the 4 large corner squares × 50 = aWBC / µL blood

dWBC count of the 4 large corner squares × 0.05 = dWBC ×10^9/L blood
dWBC count of the 4 large corner squares × 50 = dWBC / µL blood

tWBC count = aWBC + dWBC

Ratio = (100 / tWBC × aWBC) / (100 / tWBC × dWBC)

Example:

tWBC = 9.80; aWBC = 5.88; dWBC = 3.92

Ratio = (100 / 9.80 × 5.88) / (100 / 9.80 × 3.92)
Ratio = 60 / 40

Definitions:

WBC = White Blood Cells = Leukozytes
tWBC = Total WBCs
aWBC = Alive WBCs
dWBC = Dead WBCs.

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.

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: 4061609-0001-NM.
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 / Information service

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 for further developments will be considered.

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] DIN 58932.