

# TUERK'S SOLUTION

IVD *In vitro* diagnostic medical device



## Solution for manual counting of leukocytes INSTRUCTIONS FOR USE

REF Catalogue number: TU-OT-100 (100 ml) TU-OT-500 (500 ml) TU-OT-1L (1000 mL)

### Introduction

BioGnost's Tuerk's solution is used in routine manual counting of leukocytes. It is important to correctly prepare and dilute the sample of blood in the specified volume during every counting method. Acetic acid in Tuerk's solution hemolyzes erythrocytes, and purple dye stains leukocytes. The stained leukocytes are counted in the precisely defined volume, after that the number of cells in 1  $\mu$ l of blood is calculated.

### Product description

- **TUERK'S SOLUTION** - aqueous solution of BioGnost's Gentian violet Biological Stain Commission certified powder dye with addition of acetic acid.

### Testing sample

- Uncoagulated venous blood or capillary blood

### Other necessary preparations:

- Neubauer grid
- Leukocyte vortex mixer

### Preparation

#### Vortex mixer filling

Draw blood into the vortex mixer to the 1.0 mark, then draw Tuerk's solution to the 11 mark. The dilution ratio is 1-10. It is possible to make a 1-20 dilution ratio by drawing blood to the 0.5 mark, and Tuerk's solution to the 11 mark. Carefully stir the blood sample and Tuerk's solution. Use the preparation within 1 hour.

#### Filling the hemocytometer

Discard the first three drops and then fill the hemocytometer.

### Staining procedure

#### Counting under the microscope

Counting is carried out under the microscope with a 10x magnifying factor lens. It is necessary to lower the condenser and move the front lens outwards.

Count the leukocytes in 4 big angular squares with sides 1 mm in length.

Recounting is recommended. The results must not differentiate more than 15%.

### Result

#### Counting

Number of leukocytes =  $(x \cdot 10 \cdot 10) / 4$  (dilution 1-10)

Number of leukocytes =  $x \cdot 25$  (No. cells/ $\mu$ l)

X = total amount of counted cells in 4 angular squares

The results are expressed as a mean value of double counting.

#### Normal leukocyte count range

	<u>Number of leukocytes/<math>\mu</math>l</u>
Grownups	4,000 – 9,000
School children	5,000 – 12,000
Toddlers	6,000 – 15,000
Infants	7,000 – 17,000
Newborns	10,000 – 30,000

### Preparing the sample and diagnostics

Use only appropriate instruments for collecting and preparing the samples. Process the samples with modern technology and mark them clearly. Follow the manufacturer's instructions for handling. In order to avoid mistakes, the staining procedure and diagnostics should only be conducted by authorized and qualified personnel. Use only microscope according to standards of the medical diagnostic laboratory.

### Safety at work and environmental protection

Handle the product in accordance with safety at work and environmental protection guidelines. Used solutions and out of date solutions should be disposed of as special waste in accordance with national guidelines. Reagents used in this procedure could pose danger to human health. Tested

tissue specimens are potentially infectious. Necessary safety measures for protecting human health should be taken in accordance with good laboratory practice. Act in accordance with signs and warnings notices printed on the product's label, as well as in BioGnost's material safety data sheet.

### Storing, stability and expiry date

Keep the Tuerk's solution in a tightly closed original package at temperature of +15°C and +25°C. Do not keep in cold places, do not freeze and avoid exposing to direct sunlight. Date of manufacture and expiry date are printed on the product's label.

### References

1. Nagahashi, H. et al. (2000): Improved Sensitivity in the Measurement of Residual Leukocytes in Platelet Products Using an Automated Leukocyte Counter, *Labile Blood Components and Blood Donation*, 79; p 34-39.
2. Perretti, M. et Getting, S. J. (2003): Migration of Specific Leukocytes Subsets in Response to Cytokine or Chemokine Application In Vivo, in *Inflammation Protocols; Methods in Molecular Biology*, 225(2); p 139-146.
3. Softić, N. (1988): *Hematološke laboratorijske pretrage*, Tisak Sveučilišna naklada Liber, Zagreb.
4. Teijlingen van, M. E. et al. (2000): In vivo visualization of hemodialysis-induced alterations in leukocyte-endothelial interactions. *Kidney International*, 57; pp 2608-2617.

TU-OT-X, V5-EN3, 22 May 2019, AK/IŠP

	Refer to the supplied documentation		Storage temperature range		Number of tests in package		Product code		European Conformity
	Refer to supplied instructions		Keep away from heat and sunlight		Valid until		Lot number		Manufacturer
	For <i>in vitro</i> diagnostic use only		Keep in dry place		Caution - fragile				



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