C-Chip

INSTRUCTIONS

Disposable hemocytometer

System Neubauer Improved

DHC-N01

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Unpacking

When you receive the C-Chip (DHC-N01) for the first time, you will find the following components in your package.

Disposable hemocytometer
Instruction manual

Safety Precautions

For analyzing hazardous or potential infectious materials:
Take necessary precautions
Handle with care
Dispose in an appropriate way

Long exposure to solvents will cause the slide to warp. Xylene and toluene based mounting media should be avoided. Glycerol, gelatin, and other aqueous-based media are recommended.

Safety Symbols:

The safety symbols on the C-Chip (DHC-N01) are intended to inform you. Fo potential danger or a particular caution. Before use, please read and the cons ult the guide for the symbols and their meanings.

Batch Code (Lot Number)

Expire Date

Do not Re-use

A Manufacturer

See Instruction for Use

NOTE: The C-Chip (DHC-N01) is for **single use** only. **Do not reuse**. It should b e used immediately after unsealing. The warranty on the C-Chip included in th e conditions of supply is valid for 24 months from the date of manufacturing, The **expiration date** is indicated on the front of outer box.

Introduction

The C-Chip (DHC-N01) is a disposable plastic hemocytometer used for manual cell counting. It consists of surface-patterned two enclosed chambers with two ports for sample injection (Fig. 2).

The DHC-N01 grid pattern is exactly same as the Neubauer Improved. It consists of 9 large squares, each measuring 1 x 1 mm, and the depth of the chamber is 0.1 mm. Each square has a total volume of 0.1 mm^3 or 10^{-4} cm^3 (Fig. 1).

The central square is divided into 25 small squares with triple lines and four corner squares are divided into 16 small squares.

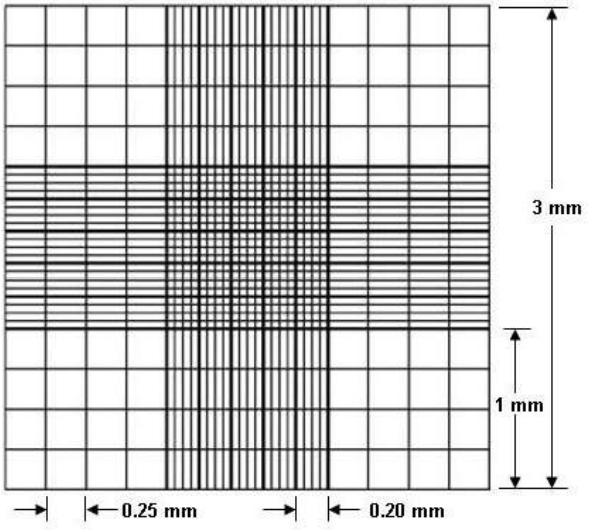

Figure 1. Grid pattern

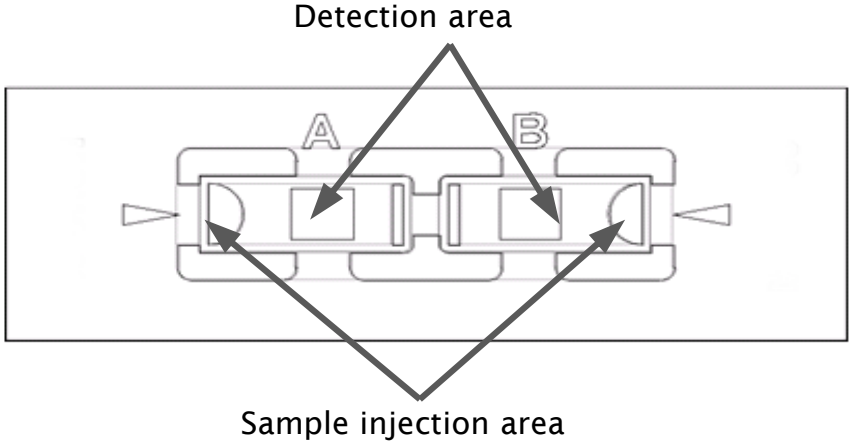

Figure 2. DHC-N01

Counting with C-Chip

A. General Methods

1. Mix the samples well.
2. Load 10 µl of sample into the sample injection area in Fig. 2, so that it fills the chamber by capillary action.
3. Count the cells under the microscope.

Cells per ml = Average count per square x dilution factor x volume factor

B. Mammalian cell counting

1. Treat the cell samples with trypsin-EDTA.
2. Carefully remove the supernatant with a pipette tip without disturbing the pellet.
3. Add an appropriate volume of growth media or PBS to dilute to a final concentration of 5×10^3 cells/ml to 5×10^6 cells per ml.
4. Thoroughly resuspend the cell pellet with a pipette.
5. Check visually if there are any cell clumps or agglomerates.
6. Load 10 µl of sample into the sample injection area in Fig. 2.
7. Count the cells in 5 large squares.

Cells per ml =

$$\frac{\text{cells in 5 large squares}}{5} \times \text{dilution factor} \times 10^4 (\text{volume factor})$$

C. Erythrocyte counting (1:200 dilution)

1. Dilute blood using accepted laboratory methods.
2. Load 10 µl of diluted sample into the sample injection area in Fig. 2.
3. Count the erythrocytes in the 5 small squares (four small corner squares and one small middle square) of the large center square.

RBCs per ml =

Cells in 5 small squares x 5 x 200 (dilution factor) x 10^4 (volume factor)

D. Leukocyte counting (1:20 dilution)

1. Dilute blood using accepted laboratory methods.
2. Load 10 µl of diluted sample into the sample injection area in Fig. 2.
3. Count the leukocytes in the 4 large corner squares.

WBCs per ml =

$$\frac{\text{cells in 4 corner squares}}{4} \times 20(\text{dilution factor}) \times 10^4(\text{volume factor})$$

Trouble shooting

In case of poor visibility results.

✓Carefully load samples into the C-Chip in order to prevent the introduction of air bubbles.
✓Observe after removing the dust from samples.
✓Adjust the focus of the microscope.