

In the **Pentasquare** slide with counting grid, the microscopic counting of the cells present in the urine sediment, is based on the same principle of the glass counting chambers actually present on the market (Bürker, Thoma-Zeiss, Neubauer).

The above mentioned counting chambers determine, through appropriate calculations, the number of the elements per ml, present in a sample of urine.

The surface on which the sample is spread in the chamber is divided in spaces defined by a grid.

Inside the squares, the volume of the samples is predetermined and consequently, through a calculation procedure, there is a direct connection between the number of cells counted per square and the whole amount in the urine sample under examination.

**Pentasquare** slide is different from the traditional glass counting chamber for its easiness in the use.

It helps the operator in the daily routine and decreases drastically some possible causes of error with the use of such chambers.

In the **Pentasquare** slide the volume of the samples limited by the grid is pre-determined and constant in all the cells (every slide is subject to strict quality controls during the production).

The area delimited by the grid is 3 mm by 3 mm divided in 5 squares with a side of 1 mm.

Every square of 1mm side is also divided in 9 small squares with a side of 0,333 mm.

Every grid is divided in 45 small squares with a side of 0,333 mm.

**Capacities**

- 0,5 ul - the whole counting grid
- 0,1 ul - each of the 5 squares of 1x1mm side
- 0,0111 ul - each of the 9 small squares of 0,333 x 0,333 mm side

**INSTRUCTIONS FOR USE**

- After having sufficiently stirred the sample of urine, pour 10 ml into a conical test tube (REF 18304);
- centrifuge for 5 minutes at 400g or 1500 rpm.
- Pour off 9 ml of the top fluid;
- Suspend the sediment again, sufficiently stirring the test tube;
- Remove the suspension with a Pasteur pipette and fill the selected cell on the slide.
- Locate the grid at 100x magnification and read afterwards at 400x magnification. The field of reading will include the smallest square of the grid (0,333 x 0,333 mm side).

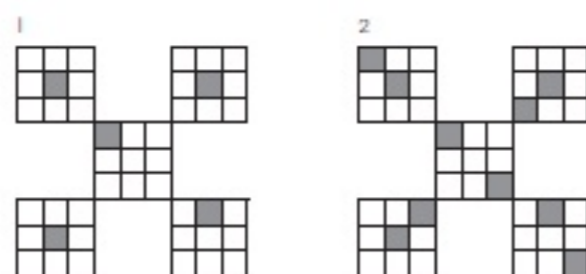
**Example of reading and counting the figured elements in the grid**

**HIGH PRESENCE OF ELEMENTS**

Count the number of elements present in 5 different squares, taking care not to count twice the same position. (example n.1)

**LOW PRESENCE OF ELEMENTS**

Count the number of elements present in 10 different squares, taking care not to count twice the same position. (example no. 2)



Apply the following formula to obtain the quantity of cells per ul or ml of urine also when using Vacutest Kima urine collection vacuum tubes with capacity 9 ml (REF 14930) or 9,5 ml (REF 14850).

$\frac{n}{k \cdot N \cdot CF} = T_{\mu l}$	to obtain number of cell per $\mu l$ of urine
$\frac{n \cdot 1000}{k \cdot N \cdot CF} = T_{ml}$	to obtain number of cell per ml of urine

Where:  
**n** - total number of cells counted  
**k** - 0,01111  
**N** - number of small squares observed  
**CF** - concentration factor  
**T<sub>μl</sub>** - total of cells present in 1  $\mu l$  of urine  
**T<sub>ml</sub>** - total of cells present in 1 ml of urine



REF 212015  
**PENTASQUARE**