Instruction For Use of VETRIPLAST® plastic slide for urine sedimentation

In the VETRIPLAST slide (plastic slide with 10 cells) 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 samples is spread in the chamber is divided in spaces defined by a grid.
Inside of the squares, the volume of the samples is predetermined and consequently, through calculation procedures, there is a direct connection between the number of cells counted on the squares and its amount in the quantity of the urine under examination.

The possibility of error in the cell counting of the urine sediment through the above mentioned chambers could be the following:

Error depending on:	MATERIAL	a) non calibrated pipettes b) defective counting chambers c) cover glasses wrongly positioned or of bad quality
	TECNIQUE	d) defective sampling e) defective pipetting f) defective mixing g) samples drying
	OPERATOR	h) differences between operators i) operator with tired sight

VETRIPLAST is different from the traditional glass counting chamber for its easiness in the use; it helps the operator in the daily routine, decreases drastically some possible causes of error with the use of the chambers. VETRIPLAST increases the quality respect to the other plastic chambers thanks to the unique patented plastic grid. The total absence of thickness permits an homogeneous distribution of the elements on the counting grid.
In the VETRIPLAST 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 3mm by 3mm divided in 9 squares with a side of 1 mm, defined by a double line. Every square of 1mm side is also divided in 9 small squares with a side of 0,333mm, defined by a single line.
Every grid is divided in 81 small squares with a side of 0,333mm.

In this way it is obtained a precise subdivision of the sample value on the grid.

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

Features of VETRIPLAST slide:

1) reduces the number of glass slides to be prepared;
2) avoids the use of defective counting chambers;
3) no need to put a cover glass avoiding every error;
4) ensures the precision of the sample volume inside every chamber and every grid;
5) permits a quick examination of the sample, avoiding the possibility of drying;
6) reduces the possibility of overcrowding of the cells.

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DIRECTIONS FOR 10 ML CENTRIFUGED URINE SAMPLES

- After having sufficiently stirred the sample of urine, pour 10 ml into a tapered test tube (code 18304);
- centrifuge for 5 minutes at 1000-1500 rpm.
- Pour off 9 ml of the top fluid;
- Suspend the sediment again, sufficiently stirring the test tube;
- Collect the sample with a Pasteur capillary pipette and fill the selected cell on the slide.
- Individuate the grid position at 100 magnifications and then read at 400 magnification. The field of reading will include the smallest square of the grid (0,333 x 0,333mm side).

Formula

$$\frac{n}{k * N * CF} = \mathbf{T_{\mu}}$$ to obtain number of cell per **µl** of urine

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

where:
n = total number of cells counted
k = 0,01111
N = number of circles observed
T_{μ} = total of cells present in 1µl of urine
T_{ml} = total of cells present in 1ml of urine
CF = concentration factor (10 for centrifuged urine samples)

DIRECTIONS FOR 10 ML NON CENTRIFUGED URINE SAMPLES

- Collect the sample with a Pasteur capillary pipette and fill the selected cell on the slide.
- Individuate the grid position at 100 magnifications and then read at 400 magnification. The field of reading will include the smallest square of the grid (0,333 x 0,333mm side).

Formula

$$\frac{n}{k * N} = \mathbf{T_{\mu}}$$ to obtain number of cell per **µl** of urine

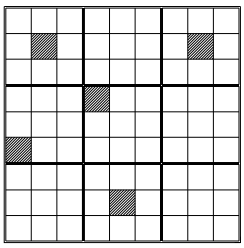
$$\frac{n * 1000}{k * N} = \mathbf{T_{ml}}$$ to obtain number of cell per **ml** of urine

where:
n = total number of cells counted
k = 0,01111
N = number of circles observed
T_{μ} = total of cells present in 1µl of urine
T_{ml} = total of cells present in 1ml of urine

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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)



Example no.1

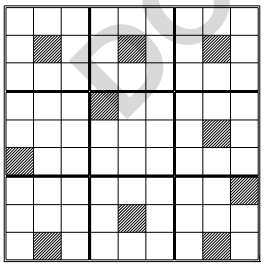
The total number of elements per uL or mL can be obtained using the “table 1” here below.

Table no.1

Total number of elements counted in **5** squares	N° of elements present in 1 **ul** of centrifuged urine **1:10**	N° of elements present in 1 **ul** of **NON** centrifuged urine	N° of elements present in 1 **ml** of centrifuged urine **1:10**	N° of elements present in 1 **ml** of **NON** centrifuged urine	Total number of elements counted in **5** squares	N° of elements present in 1 **ul** of centrifuged urine **1:10**	N° of elements present in 1 **ul** of **NON** centrifuged urine	N° of elements present in 1 **ml** of centrifuged urine **1:10**	N° of elements present in 1 **ml** of **NON** centrifuged urine
1	2	18	1800	18000	**35**	63	630	63000	6300000
2	4	36	3600	36000	**40**	72	720	72000	7200000
3	5	54	5400	54000	**45**	81	810	81000	8100000
4	7	72	7200	72000	**50**	90	900	90000	9000000
5	9	90	9000	90000	**55**	99	990	99000	9900000
6	11	108	10800	108000	**60**	108	1080	108000	1080000
7	13	126	12600	126000	**65**	117	1170	117000	1170000
8	14	144	14400	144000	**70**	126	1260	126000	1260000
9	16	162	16200	162000	**75**	135	1350	135000	1350000
10	18	180	18000	180000	**80**	144	1440	144000	1440000
12	22	216	21600	216000	**85**	153	1530	153000	1530000
14	25	252	25200	252000	**90**	162	1620	162000	1620000
18	32	324	32400	324000	**95**	171	1710	171000	1710000
20	36	360	36000	360000	**100**	180	1800	180000	1800000
25	45	450	45000	450000	**105**	189	1890	189000	1890000
30	54	540	54000	540000	**110**	198	1980	198000	1980000

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)



Example n.2

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The total number of elements per uL or mL can be obtained using the “table 2” here below.

Table no.2

Total number of elements counted in **10** squares	N° of elements present in 1 **ul** of centrifuged urine **1:10**	N° of elements present in 1 **ul** of **NON** centrifuged urine	N° of elements present in 1 **ml** of centrifuged urine **1:10**	N° of elements present in 1 **ml** of **NON** centrifuged urine	Total number of elements counted in **10** squares	N° of elements present in 1 **ul** of centrifuged urine **1:10**	N° of elements present in 1 **ul** of **NON** centrifuged urine	N° of elements present in 1 **ml** of centrifuged urine **1:10**	N° of elements present in 1 **ml** of **NON** centrifuged urine
1	1	9	900	9000	**35**	31	320	31500	315000
2	2	18	1800	18000	**40**	36	360	36000	360000
3	3	27	2700	27000	**45**	40	405	40500	405000
4	4	36	3600	36000	**50**	45	450	45000	450000
5	5	45	4500	45000	**55**	50	500	49500	495000
6	5	54	5400	54000	**60**	54	540	54000	540000
7	6	63	6300	63000	**65**	59	590	58500	585000
8	7	72	7200	72000	**70**	63	630	63000	630000
9	8	81	8100	81000	**75**	68	680	67500	675000
10	9	90	9000	90000	**80**	72	720	72000	720000
12	11	108	10800	108000	**85**	77	770	76500	765000
14	13	126	12600	126000	**90**	81	810	81000	810000
18	16	162	16200	162000	**95**	86	860	85500	855000
20	18	180	18000	180000	**100**	90	900	90000	900000
25	23	225	22500	225000	**105**	95	950	94500	945000
30	27	270	27000	270000	**110**	99	990	99000	990000

Technical data

REF 211710	**"VETRIPLAST"® plastic slide for urine sedimentation with 10 cells, with four square grid.**
Destination of use: For cytological urine tests.	
Composition material of the device: Polymethylmethacrylate (PMMA)	
Outer grid sizes: 3x3 mm	
Small grid sizes: 0,333x0,333 mm	
Small grid volume: 0,0111 uL	
Chamber depth 0,1 mm	

This product is a product IVD - CE marked as per the Directive 98/79/EC in force.

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