PREPARATION OF CYTOLOGY SAMPLES USING THE MPW CENTRIFUGE AND “CYTOSET” KIT, AND THE MOST COMMON MISTAKES
ADVANTAGES OF THE “CYTOSET” KIT

The “CYTOSET” CYTOLOGY KIT is the only solution in the market to yield a smooth layer of sample cells and supernatant from the same biological specimen. It was designed for use in human and veterinary medicine, as well as more broadly in biology, biochemistry, cytology and histopathology. The kit includes a horizontal, four-place cytological rotor with hangers to load the cytology insert for the deposit and supernatant.

TYPES OF SUSPENSIONS TESTED:
- Natural biological fluids, such as cerebrospinal fluid, fluids from body cavities, synovial fluid, discharges, pus, etc.
- Isotonic suspensions of swabs, tissue punctates, sputum, bronchial washings, etc.

ADVANTAGES AND CAPABILITIES:
- Quick sedimentation of cells on microscope slides by centrifugation, with penetration of the supernatant to the filter card
- Capable of recovering the supernatant following the deposition of cells on the microscope slide by automated draining to the tube
- Protection from aerosoling by preventing the fluid from leaking to the centrifugation chamber.
- The preparation on the slide is of equal thickness in one plane, in a small surface area
- The capability of setting up tried and tested centrifugation conditions prevents the cells in the preparation from damage or deformation
- A very short total time to prepare the sample, even less than 45 minutes (including staining)
- Disposable parts ensure safe handling and protection against infections or contamination of personnel or the environment
- A small quantity of fluid (even several droplets) is sufficient to obtain a cell deposit
- Phytolysin which covers the slide effective holds down the cells

<table>
<thead>
<tr>
<th>MPW</th>
<th>“CYTOSET” CYTOLOGY KIT</th>
<th>Nº</th>
</tr>
</thead>
<tbody>
<tr>
<td>223c</td>
<td>cytology rotor with 4 hangers</td>
<td>12271C 1</td>
</tr>
<tr>
<td>352/R/RH</td>
<td>cytology rotor with 4 hangers</td>
<td>12452C 1</td>
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EXPENDABLE MATERIALS

<table>
<thead>
<tr>
<th>Nº</th>
<th>Item</th>
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<tbody>
<tr>
<td>16610</td>
<td>cytology insert kit</td>
<td>100</td>
</tr>
<tr>
<td>16611</td>
<td>carrier and overlay</td>
<td>100</td>
</tr>
<tr>
<td>15123</td>
<td>PP tube 2.2ml with cap</td>
<td>100</td>
</tr>
<tr>
<td>16614</td>
<td>microscope slide</td>
<td>100</td>
</tr>
<tr>
<td>16616</td>
<td>filter card Ø 9,5mm</td>
<td>100</td>
</tr>
<tr>
<td>16617</td>
<td>filter card Ø 12,5mm</td>
<td>100</td>
</tr>
</tbody>
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ADVANTAGES OF MPW CYTOLOGY CENTRIFUGE

- The lowest price in the market
- Small size and quiet operation
- Simple and easy preparation of sample
- Straightforward operation of centrifuge
- Capability to equip other selected MPW centrifuges (including older models) with the cyto rotor
- MPW-352 centrifuge also available in the refrigeration (MPW-352R) and refrigeration/heating (MPW-352RH) versions
- Constant access to expendable materials from the kit due to manufacturing location in Poland (Warsaw)
- Short order lead time
- Safety of work
- The preparation obtained from the cytology centrifuge is ready for staining without extra activities
PARTS OF THE INSERT

- CARRIER - CONTAINER N° 16611
- SLIDE N° 16614
- FILTER CARD N° 16617
- OVERLAY WITH SEAL N° 16611
- DRAINING TUBE 2,2ml N° 15123
- CAP N° 16611

Ø 9,5mm

Ø 12,5mm
PREPARING SPECIMENS FOR CENTRIFUGATION USING THE „CYTOSET” KIT

OPTION 1: WITH SUPERNATANT YIELDED RECOVERED TWO STAGES: CENTRIFUGATION + DRYING UP
FIRST RUN

1
STEP 1
HOW TO LOAD THE SLIDE ON THE CARRIER?

1. TAKE AND HOLD AS SHOWN IN THE PICTURE

2. PLACE ON THE CARRIER

MISTAKES

- slide with no porous surface, slide with no possibility to durably mark the sample, “dirty” – not degreased, improperly held and loaded onto the carrier
- slide loaded upside down – with the marked field down
STEP 2
HOW TO LOAD THE FILTER CARD?

1. TAKE AND HOLD THE Ø12.5mm PAPER AS IN THE PICTURE
2. PUT THE PAPER ON THE SLIDE

YOU CAN USE TWIZZERS OR SMALL PINCERS

MISTAKES
- filter card with improper diameter, damaged, incorrectly held and carelessly loaded onto the slide
STEP 3

HOW TO LOAD THE OVERLAY ONTO THE CARRIER?

1. TAKE THE OVERLAY
2. PUT IT ON THE CARRIER
3. FASTEN THE CLASPS

MISTAKES

- overlay carelessly placed on the carrier with the slide and filter card,
- incorrect fastening of clasps
STEP 4
HOW TO LOAD THE SAMPLE?

MISTAKES

• incorrect sample volume (too much)
• loading the sample in the side funnel instead of the main funnel
STEP 5
HOW DOES A COMPLETE CYTO INSERT FOR YIELDING/RECOVERY OF SUPERNATANT LOOK LIKE?

MISTAKES

• absence of any part (slide, filter card, draining tube, cap, seal)
• slide placed upside down – with the marked field and company logo down
• clasps unfastened or incompletely fastened
STEP 6
HOW TO CORRECTLY LOAD THE CYTO INSERT WITH THE SAMPLE ON THE HANGER?

REMEMBER TO LOAD THE COMPLETE INSERT ON THE HANGER WITH THE DRAINING TUBE FACING THE ROTOR PIVOT

MISTAKES

• loading a complete insert with the draining tube facing the outer diameter of the rotor
HOW TO CORRECTLY MOUNT THE HANGER WITH THE CYTO INSERT ON THE ROTOR?

MISTAKES

- incorrect placement of the hanger on the rotor arms, projection on a different side from the lock

MAKE SURE THAT THE HANGER IS CORRECTLY MOUNTED ON THE ROTOR ARMS
STEP 8
HOW TO SET UP CENTRIFUGATION PARAMETERS?

NOTE! THE PARAMETERS SHOWN IN THE PICTURE ARE ONLY EXAMPLES

Speed can be set from 500 RPM to 1500 RPM. Up from that speed, cells may be damaged. Customers may set up centrifugation parameters according to their own tried and tested methodologies.

* For the MPW-352 family of centrifuges, acceleration setting of at least 3 and deceleration setting of at least 6 should be selected.

MISTAKES
• too high rotational speed (may damage the cells)
• centrifuge stopped during centrifugation (STOP button pressed by the operator) will destroy the preparation (applicable to the 352 family of centrifuges)
STEP 9
HOW TO START THE CENTRIFUGE?

CLOSE THE CENTRIFUGE COVER AND PRESS START.

MISTAKES

- imperfectly closed cover may prevent the centrifuge from starting
- START button pressed too soft
STEP 10
HOW TO OPEN THE CENTRIFUGE?

THE CENTRIFUGE CAN BE STOPPED WITH THE STOP BUTTON AND EMERGENCY-OPENED AT ANY TIME*

MISTAKES
• too early attempt at opening the cover (while the rotor still in motion). Sound signal will notify of completed centrifugation and stopped rotor
STEP 11
HOW TO UNLOAD THE CYTO INSERT FOLLOWING COMPLETED CENTRIFUGATION CYCLE?

MISTAKES

• too hefty and incorrect removal of the insert
• changing its position to the horizontal – the supernatant from the draining tube flows back onto the slide

KEEP THE INSERT VERTICALLY AS SHOWN IN THE PICTURE SO THAT THE SUPERNATANT ALWAYS REMAINS IN THE TUBE
STEP 12
HOW TO UNLOAD THE TUBE FILLED WITH SUPERNATANT?

MISTAKES

• failure to keep the insert in the vertical position
• too hefty removal (jerking) of the tube and failure to close it with the cap

1. KEEP THE INSERT VERTICALLY

2. REMOVE THE TUBE WITH GENTLE TWISTING MOVEMENT

3. CLOSE THE TUBE WITH THE CAP
**STEP 13**

**HOW TO OPEN UP THE OVERLAY?**

1. **HOLD DOWN THE CARRIER**
2. **UNFASTEN THE CLASPS**

**MISTAKES**

- unbalanced opening of the clasps may shift the overlay and disturb the cell deposit
STEP 14
HOW TO OPEN UP THE INSERT TO RELEASE THE SLIDE AND FILTER CARD?

PRESS GENTLY BUT FIRMLY TO RAISE THE OVERLAY TO 45° AND RELEASE THE SLIDE WITH THE CENTRIFUGED PREPARATION

MISTAKES

- too hefty opening up of the insert and shifting the filter card may damage the cell deposit and destroy the preparation
REMEmBER TO DRY UP, FIX AND StAIN THE DEPOSIT WITH YOUR PREFERRED TECHNIQUE

MISTAKES

- too hefty removal of the filter card may disturb the deposited cells and destroy the preparation

STEP 15
HOW TO REMOVE THE FILTER CARD?
SECOND RUN
DRYING UP OF THE SAMPLES

2
STEP 1
HOW TO LOAD THE SLIDE WITH THE CENTRIFUGED PREPARATION IN THE CONTAINER FOR THE SECOND RUN?

PLACE THE SLIDE WITH THE CENTRIFUGED PREPARATION IN THE CARRIER OF THE INSERT WITH THE PROPER SIDE UP – WITH THE MARKED FIELD AND LOGO UP

MISTAKES

• a new slide (with no preparation on it) with no porous surface, slide with no possibility to durably mark the sample, “dirty” – not degreased

• slide with centrifuged preparation incorrectly held down and loaded to the carrier, i.e. upside down (with the preparation facing down)
STEP 2
HOW TO LOAD A NEW FILTER CARD ON THE SLIDE?

YOU CAN USE TWIZZERS OR SMALL PINCERS

PLACE A NEW FILTER CARD Ø 9.5mm ON THE SLIDE WITH THE CENTRIFUGED PREPARATION

MISTAKES

• filter card of incorrect diameter
• imprecise (careless) placement of the filter on the slide (e.g. on the centrifuged preparation)
HOW TO LOAD THE OVERLAY AND CLOSE THE FUNNELS?

1. LOAD THE OVERLAY ON THE CARRIER
2. CLOSE THE FUNNELS WITH CAPS

MISTAKES

- overlay carelessly placed on the carrier with the slide and filter card
- absence of seal under the overlay
- incorrect fastening of clasps
- failure to close or incomplete closure of the cap on the side funnel
STEP 4

HOW DOES A COMPLETE (READY FOR DRYING UP) CYTO INSERT LOOK LIKE?

MISTAKES

• absence of any part (slide, filter card, cap, seal)
• unfastened clasps, incompletely closed caps
THE CLOSED SIDE FUNNEL FACING THE CENTRIFUGE PIVOT

MISTAKES
- placing a complete insert with the side funnel facing the outer diameter of the rotor
STEP 6
HOW TO SET UP CENTRIFUGATION PARAMETERS?

NOTE! THE PARAMETERS SHOWN IN THE PICTURE ARE ONLY EXAMPLES

Speed can be set from 500 RPM to 1500 RPM. Up from that speed, cells may be damaged. Customers may set up centrifugation parameters according to their own tried and tested methodologies.

* For the MPW-352 family of centrifuges, acceleration setting of at least 3 and deceleration setting of at least 6 should be selected.

MISTAKES

• too high rotational speed (may damage the cells)
MAKE SURE THAT THE HANGER IS CORRECTLY MOUNTED ON THE ROTOR ARMS

STEP 7

HOW DOES THE HANGER LOOK LIKE DURING CENTRIFUGATION?

MISTAKES

• incorrect placement of the hanger on the rotor arms (projection on a different side from the lock)
STEP 8

HOW TO UNLOAD THE CENTRIFUGED CYTO INSERT FOLLOWING COMPLETED CENTRIFUGATION CYCLE?

MISTAKES

• too hefty and incorrect removal of the insert
PRESS GENTLY BUT FIRMLY TO RAISE THE OVERLAY TO 45° AND RELEASE THE SLIDE WITH THE CENTRIFUGED PREPARATION

MISTAKES

- too hefty opening up of the insert and shifting the filter card may damage the cell deposit and destroy the preparation
STEP 10
HOW TO REMOVE THE FILTER CARD?

MISTAKES

- too hefty removal of the filter card may disturb the cell deposit and destroy the preparation

REMEMBER TO DRY UP, FIX AND STAIN THE PREPARATION WITH YOUR PREFERRED TECHNIQUE

TWIZZERS OR SMALL PINCERS ARE RECOMMENDED
PREPARING SPECIMENS FOR CENTRIFUGING USING THE „CYTOSET” KIT

OPTION 2: WITH NO SUPERNATANT YIELDED

1. Proceed as shown in centrifugation Option 1: with yielded/recovered supernatant;

2. It is not necessary to use tubes with 2.2ml volume for the centrifuged supernatant;

3. During the first centrifugation cycle, use filter card with Ø 9.5mm.

To find more details on the equipment, the kit, and how to prepare and dilute, read our info materials or visit www.mpw.pl
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