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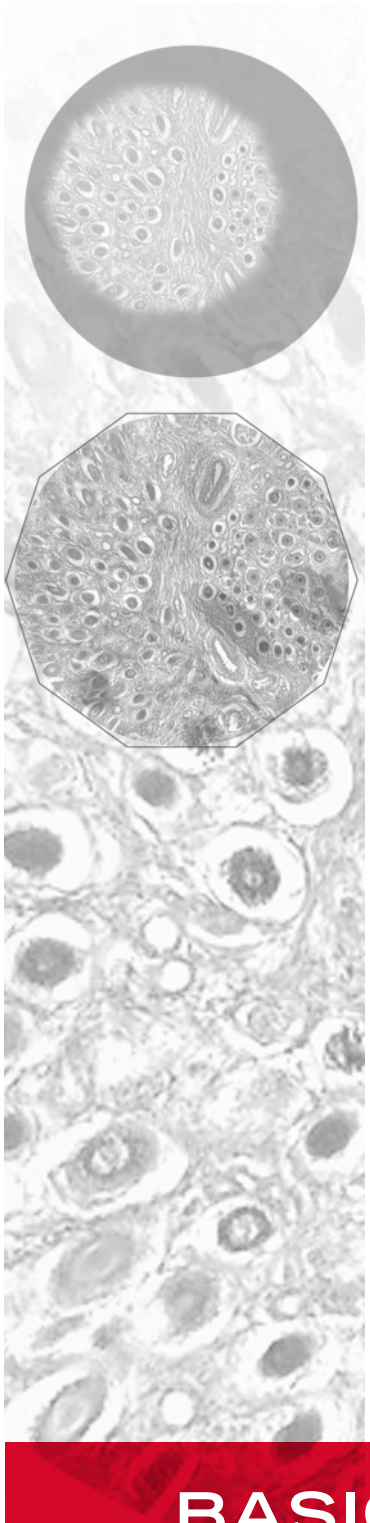
MORE THAN MICROSCOPY



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SUPPORT

# BASIC MICROSCOPY CONCEPTS

## ADJUSTING THE ILLUMINATION

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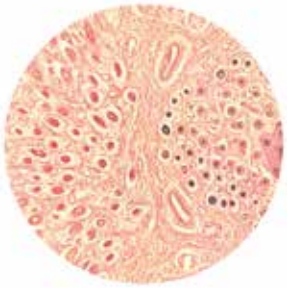
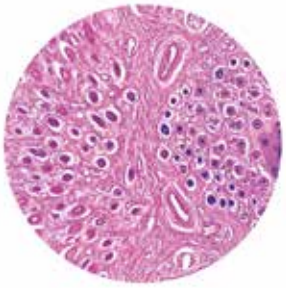
In order to obtain maximum performance from your microscope's optics - good, clear and crisp image - it is very important that the sample is illuminated correctly. For this reason, we would like to share with you some recommendations that will help you get the best image that your microscope can give.

## LIGHT AND FILTER



1 *Not using a color balancing filter*



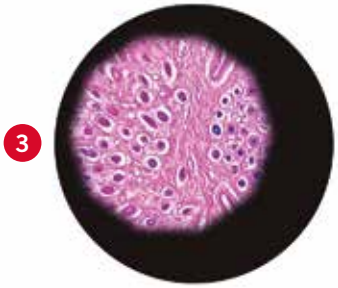
2 *Using a color balancing filter*

Turn on the microscope, focus your sample and adjust the light intensity (potentiometer) to an optimal level **(1)**.

Then place the daylight filter (blue filter) on the filter holder. This filter is usually included in the standard package of a halogen or tungsten light microscope. This filter corrects the color temperature **(2)**, so that the yellow light from the tungsten or halogen bulb becomes white. Microscopes with LED illumination sources generally do not need this filter, because the color temperature is already high.

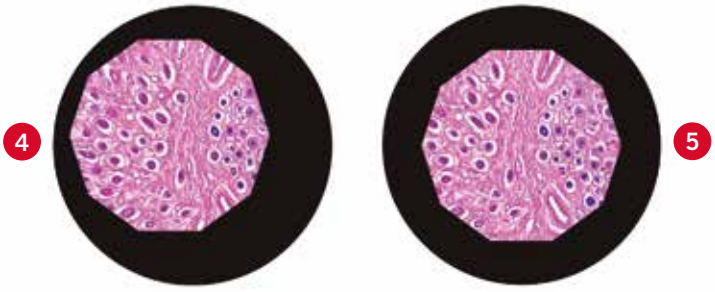
## FIELD DIAPHRAGM

### FOR MICROSCOPES WITH KOEHLER ILLUMINATION



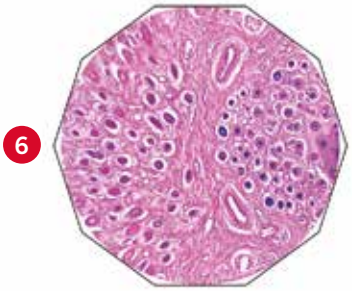
3

Place the 10X objective on the light path, focusing the sample and closing the field diaphragm until it appears in the field of view **(3)**.



4 5

Focus the edges of the diaphragm by using the condenser's focusing system. Both images must be focused, sample and diaphragm **(4)**. Once this is done, you need to center the field diaphragm by using the two centering screws of the condenser **(5)**.



6

Finally, open the field diaphragm until it remains just outside of the field of view **(6)**.

**KNOW MORE ABOUT THIS SUBJECT ON OUR YOUTUBE CHANNEL.**

## APERTURE DIAPHRAGM

Depending on the condenser, it can show different scales indicating either the aperture, or the magnification of the objectives as an indicative position. The aperture diaphragm should be adjusted in accordance to the numerical aperture of the objective.

In order to obtain a well-balanced image in terms of brightness and contrast, use the same numerical aperture of the objective (although we recommend to use a little bit less than what is indicated to get better results).

This adjustment is the most variable and subjective one. Depending on the sample you might need more brightness or more contrast. Some basic microscopes do not have an iris diaphragm indicator. In this case we suggest as a guide **(6)**.

To obtain perfect illumination, each of these steps should be repeated each time we change objectives.

**6**

| Objective | Aperture Of Iris |
|---|---|
| 4X | From fully closed to 1/8 open |
| 10X | From 1/8 to 1/4 |
| 40X | From 1/4 to 1/2 |
| 100X | From 1/2 to 3/4 |

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