

Staining Specimens

It is often helpful to dye certain cell structures so that they can be seen more clearly. Chemicals that dye parts of cells for this purpose are called stains.

2 stains commonly used in life science include:

1.) Lugol's (iodine) solution:

--- this is an especially good stain for plant cells like onion cells

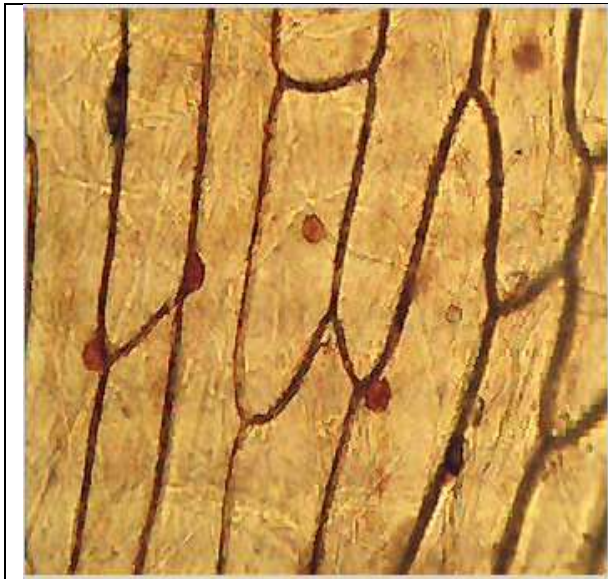


Image source

<http://www.teachnet.ie/mamond/2004/Images/OnionCellsX100Iodine.jpg>

These onion cells have been stained so their nuclei are visible.

2.) Methylene blue:

-- this is the stain of choice for staining animal cells such as human cheek cells

-- it is also a vital dye (does not immediately kill the specimen)

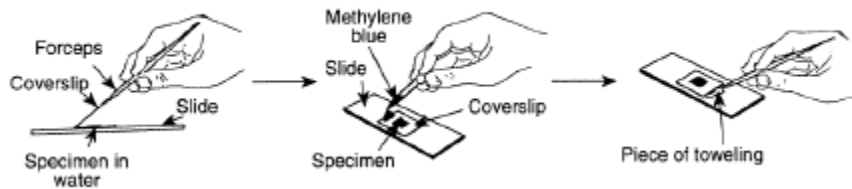


Image source

<http://faculty.clintoncc.suny.edu/faculty/michael.gregory/files/bio%20101/bio%20101%20laboratory/cells/img007.jpg>

This is the typical effect of methylene blue staining of cheek cells. Note that the nuclei of the cells stain more darkly.

A simple technique for applying stain is illustrated by the procedure and diagram which follows.



- I. Student obtains a specimen and places it on the slide with forceps. The student then lowers a coverslip on to the specimen from an approximately 45 degree angle gently. This reduces the number of air bubbles the specimen will have compared to if the student just dropped the coverslip directly on the specimen. The student then places a drop or two of water on the specimen.
- II. The student places a drop of methylene blue beside and under one corner of the cover slip.
- III. The student places a towel on the opposite side of the cover slip in the water beside the cover slip. This will draw the stain through the entire specimen in a few seconds. (This technique will also remove any air bubbles which have formed.) Then the student may observe the stained specimen.