

(c) Preparation of giant chromosomes

Chironomous larva is found in ditches and in drains. These larva are identified being red in color as they possess haemoglobin in their blood and hence also referred to as Bloodworm.

TAKE OUT:

1. Collect the water from ditches or drains having larvae.
2. Separate the larva from the water and place in normal saline on a slide.
3. Locate the junction off the thorax and abdomen
4. With the help of two needles one placed at the end of thorax, the other needle is used to separate the abdomen from the thorax and head.
5. Thorax is lightly pressed, with the needle and salivary glands can be seen in the saline on the slide, which is observed under the microscope and chromosomes can be observed.
- 6.

PREPARATION OF SLIDE

1. Now we clean the slide, put a drop of acetocarmine on the chromosomes, put coverslip over it, gently warm, and slightly press it with the thumb, this presses the cells and chromosomes spreads out.

COMMENTS:

1. These are large sized and hence called giant chromosomes.
2. The chromosomes show alternate dark and light bands. The dark bands are rich in DNA and RNA and light bands contain large amount of proteins and less DNA and RNA.
3. A polytene chromosome is multistranded, formed of large number of chromonemal threads.
4. At certain points the chromosomes exhibit puffs also known as Balbiani rings.
5. Balbiani rings the lateral extensions of chromonemal threads forming side loops related with the metabolic activities of the chromosomes and help in the synthesis of proteins, nucleic acid and formation of nuclear material.

(d) Preparation of onion root tip for the stages of mitosis

Aim: To study stages of meiosis in onion root tip by Squash preparation.

PREPARATION: Take out onion from the soil gently without damaging the root tips and cut about 3mm of root and place in FAA(40%formalin 10ml; glacial acetic acid 5ml and 85 ml 70% ethyl alcohol) or Carnoy's fluid (Glacial acetic acid 25 ml and absolute alcohol 75 ml another formula of preparation is Glacial acetic acid 10 ml, chloroform 30 ml and Absolute alcohol 60 ml)

MATERIALS REQUIRED: Microscopic glass slides, cover slip, acetocarmine, spirit lamp, blotting paper and compound microscope.

PROCEDURE:

1. Take a drop of acetocarmine on a clean slide and place root tips on it. Put a cover slip over it and tap it gently with the back of needle.
2. Warm the slide gently over the flame and press smoothly.
3. Examine the slide under the microscope, observe and draw the different stages of mitosis in your record file.