12. To examine the presence or absence of Barr body in the given sample.

Date : / /

Aim : To observe Barr bodies in squamou epithelial cells obtained from the inner lining of the cheek (Buccal smear).

Requirements : Cotton buds, slide, saline solution, 70 % alcohol, Giemsa/ Methylene blue stain, compound microscope, etc

Procedure :

1. Clean the mouth by rinsing and gargling with water, several times.
2. Take a sterile cotton bud and dip it in normal saline solution.
3. Rub it on the inner lining of the cheek several times.
4. Smear the bud on a clean slide and allow it to dry.
5. Place the slide in a petridish. Layer it with a fixative (70 % alcohol).
6. Allow it to stand for few minutes.
7. Drain off the extra fixative.
8. Stain the smear with Giemsa / Methylene Blue and wait for 10 minutes.
9. With the help of a dropper gently wash off the excess stain with water.
10. Place a coverslip and observe first under low power and then under high power of the microscope.

Observation :-

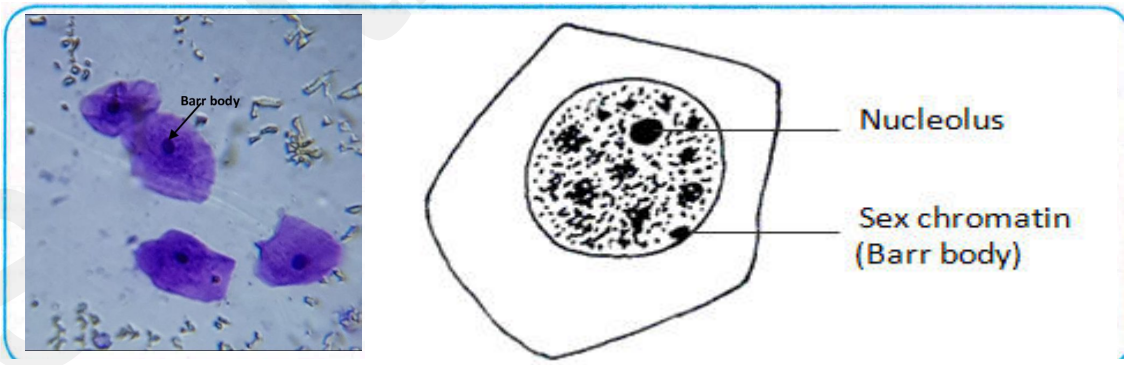
1. Barr body is seen attached on the inner side of the nuclear membrane of the cell.
2. A Barr body (named after its discoverer Dr. Murray Barr) is the condensed, inactive X chromosome found in the female somatic cell. The chromatin body is made inactive by a process called lyonization.
3. The number of Barr bodies seen in a cell is one less than the number of X chromosome in the somatic cell. Hence only one barr body is seen in the cell of a normal female and never in the cell of a normal male.

Result :

In female 1 / In male 0 number of Barr body is seen in the slide.

Figure :-

Draw the diagram of the Barr body and the cell as seen under the microscope.



Questions

1. What is a 'Barr body'?

A small, densely staining structure in the cell nuclei of females, consisting of a condensed, inactive X chromosome. It is regarded as diagnostic of genetic femaleness.

2. Which stain is used for staining a Barr body?

Giemsa/ Methylene Blue

3. How many Barr bodies occur in a normal somatic cell of the human female?

One barr body

4. How many Barr bodies can be seen in Turner's female?

No barr body or zero

5. Will there be a Barr body in male with Klinefelter's syndrome?

1 barr body

6. A child suffering from Down's syndrome has 47 chromosome? How many barr bodies can be seen in the cell of a female with Downs' syndrome child ?

1 barr body

Multiple Choice Questions

1. Barr body is _____

a. inactive X-chromosome
b. inactive Y-chromosome
c. Active X-chromosome
d. Active Y-chromosome

2. The number of Barr body seen in a cell is _____

a. One more than the number of X-chromosome
b. One less than the number of X-chromosome
c. One more than the number of Y-chromosome
d. One less than the number of Y-chromosome

3. How many Barr bodies are seen in the somatic cell of individual suffering from Turner's syndrome?

a. 1
b. 2
c. 3
d. 0

4. Barr body is found in .....

a. Somatic cell in normal male
b. Somatic cell in normal woman
c. Germinal cells in woman
d. man with Down's syndrome

Remark and Signature of Teacher .....