

Sperm Penetration Microscope Lab Exercise

Name:
Date:
Period:



Background Information: Have you ever seen a fertilized egg up close? If you have you may have noticed a dark circle on the yolk's surface. This dark circle is called the germinal disc. The germinal disc contains the female's genetic material (DNA) and is the site where sperm will bind and penetrate the disc in order to fertilize the egg. In the laboratory we can cut out the germinal disc by cutting into the yolk and removing the disc which is located on the outermost layer of the yolk, called the perivitelline membrane. Using stains which dye the membrane and the germinal disc, we can prepare slides which show the sites of sperm penetration around the germinal disc.

- 1) Located the germinal disc on your slide.
- 2) Do you notice the darker appearance of the disc in comparison to other regions of the slide? Scan your slide to compare the staining differences. The germinal disc stains a darker color than the rest of the perivitelline membrane. This occurs because the germinal disc is more dense because it contains DNA.
- 3) Around the germinal disc are you able to see small white holes? What do you think these holes represent? Trade slides with your partner and locate the germinal disc region on your new slide. Do you notice a difference between the number of holes on each slide? What might this difference represent?

Label the following on the slide below:

- 1) Germinal disc
- 2) Sperm penetration holes

