

Reproductive Systems: Testis and Sperm Transport

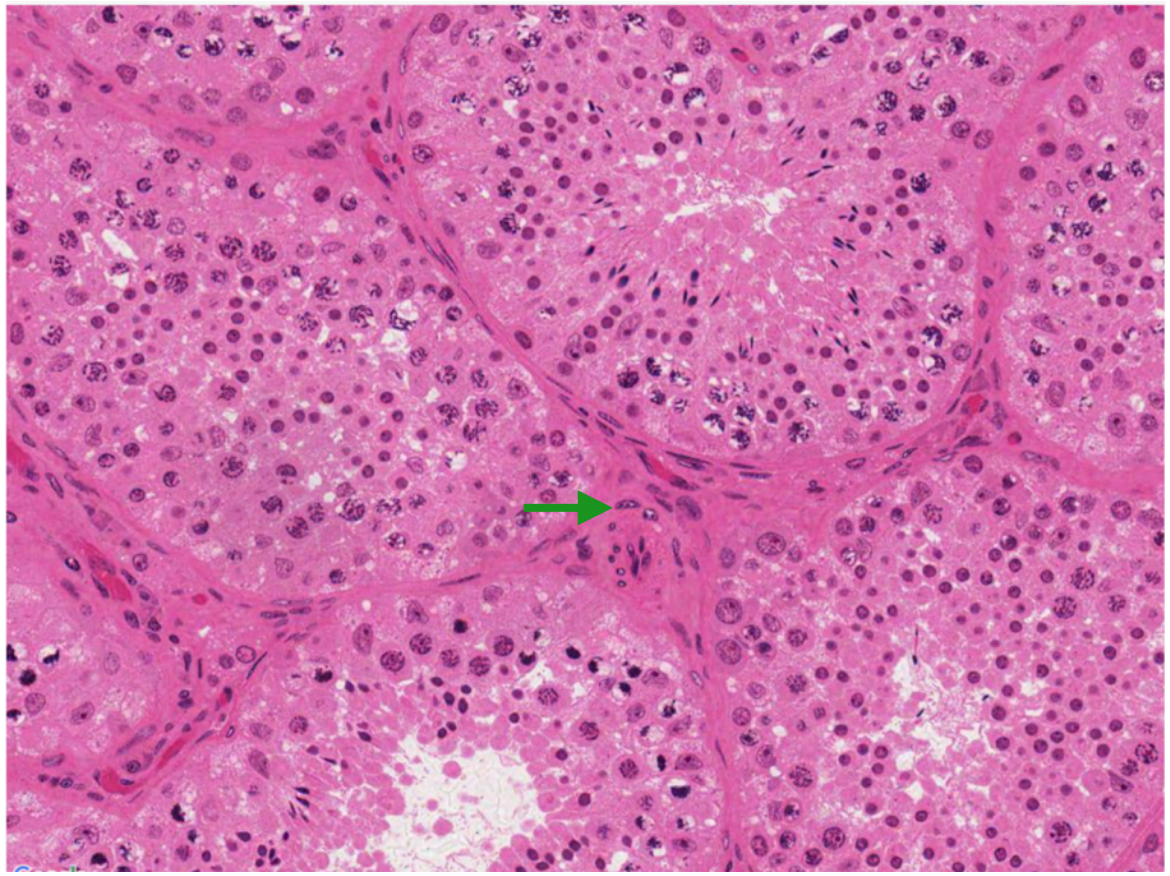
Yale SCHOOL OF MEDICINE

MD CURRICULUM

Readiness Assessment Questions

1. What do cells in this region release?

- Androgen-binding protein
- Inhibin B
- Testosterone
- Fructose



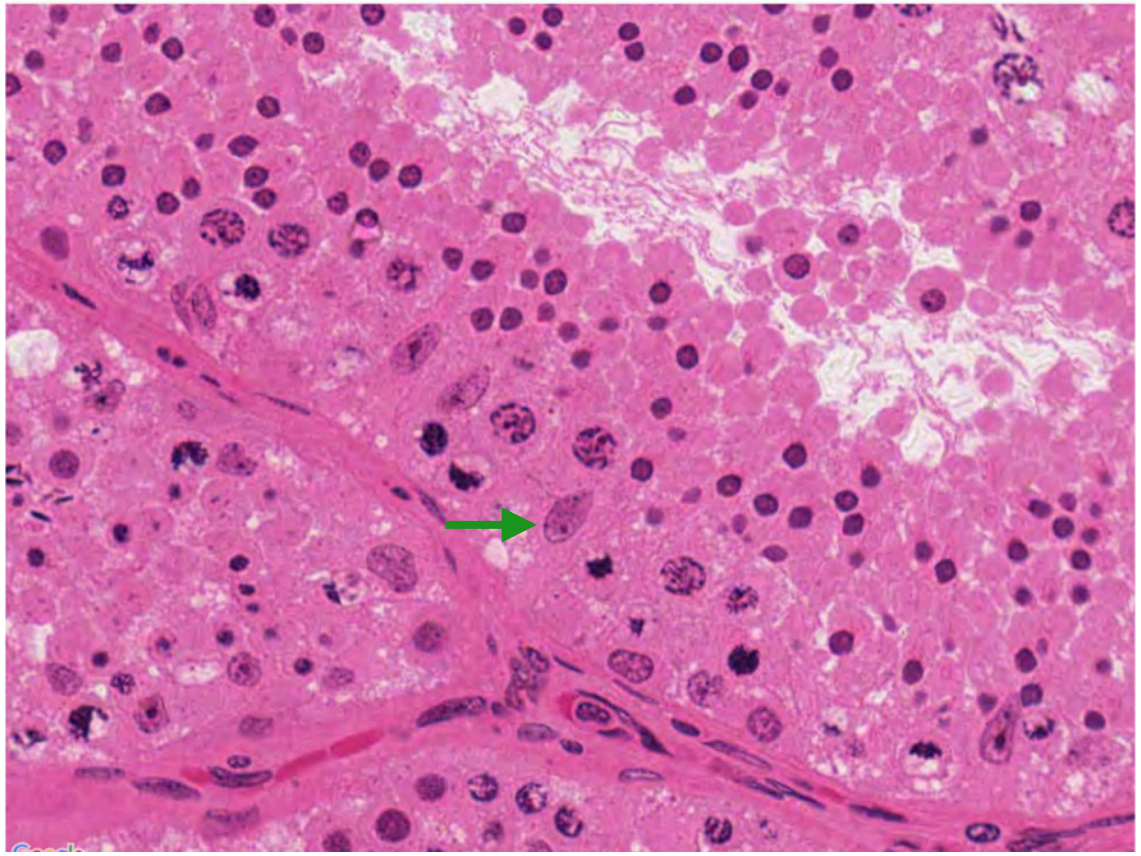
2. What event in sperm development occurs here?

- Acquisition of the capacity for motility
- Formation of the acrosome
- Development of the flagellum
- Condensation of nucleus



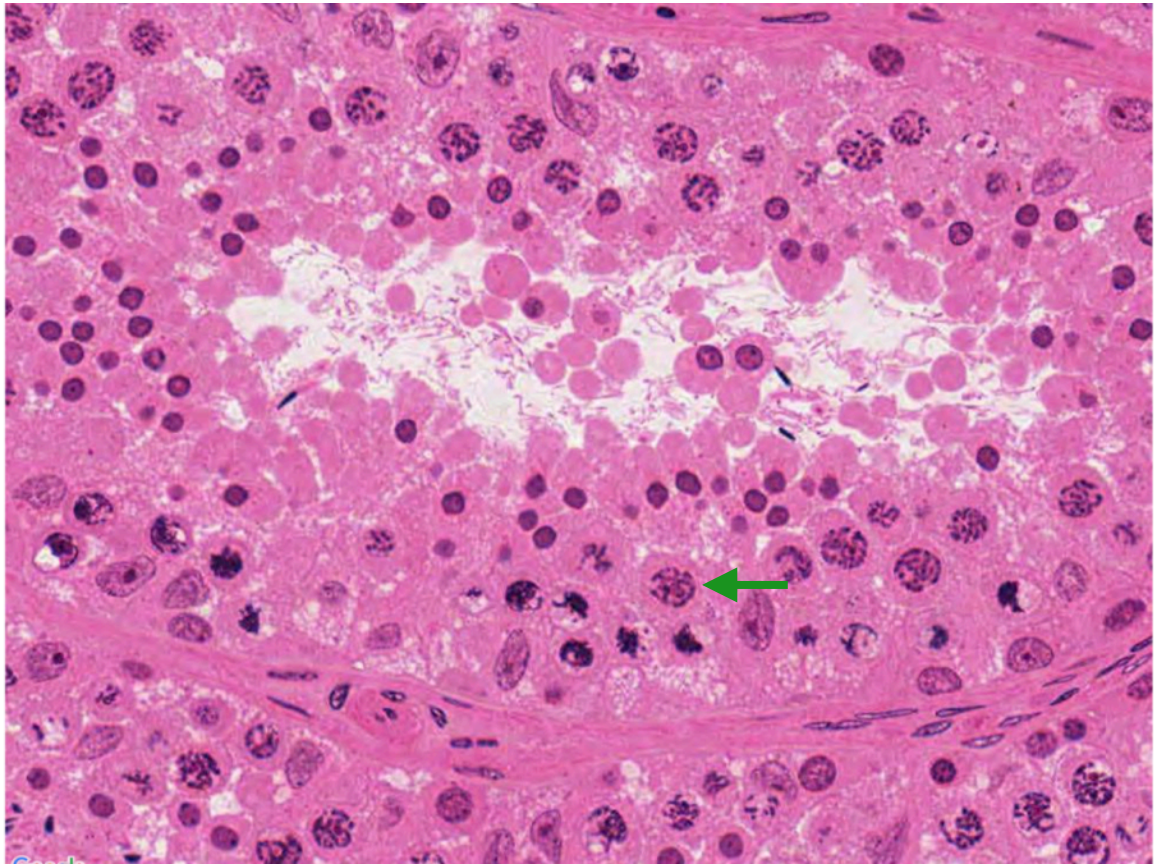
3. What does this cell produce?

- Testosterone
- Luteinizing Hormone
- Androgen-Binding Protein
- Prostaglandins



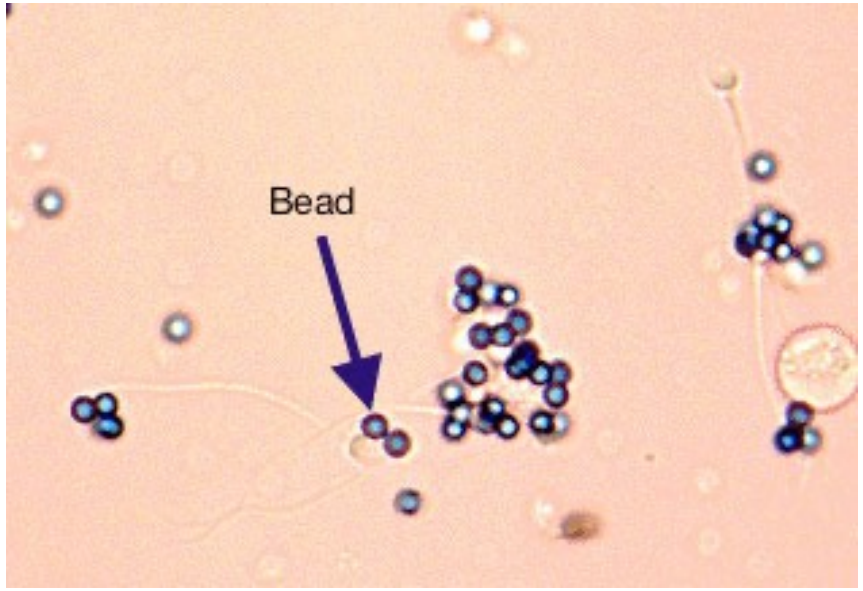
4. In which region does this cell reside?

- Basal
- Adluminal
- Interstitium
- Basement membrane



Application Questions

1. A male patient reports having trouble conceiving a child after a vasectomy reversal. A semen analysis reveals normal sperm count with reduced motility and sperm clumping. You mix a sample of the patient's semen with beads coated with anti-IgG antibody (see image). What do the results suggest about the causes of infertility in the patient? How did this pathology arise? What prevents this from happening in men with intact reproductive tracts?



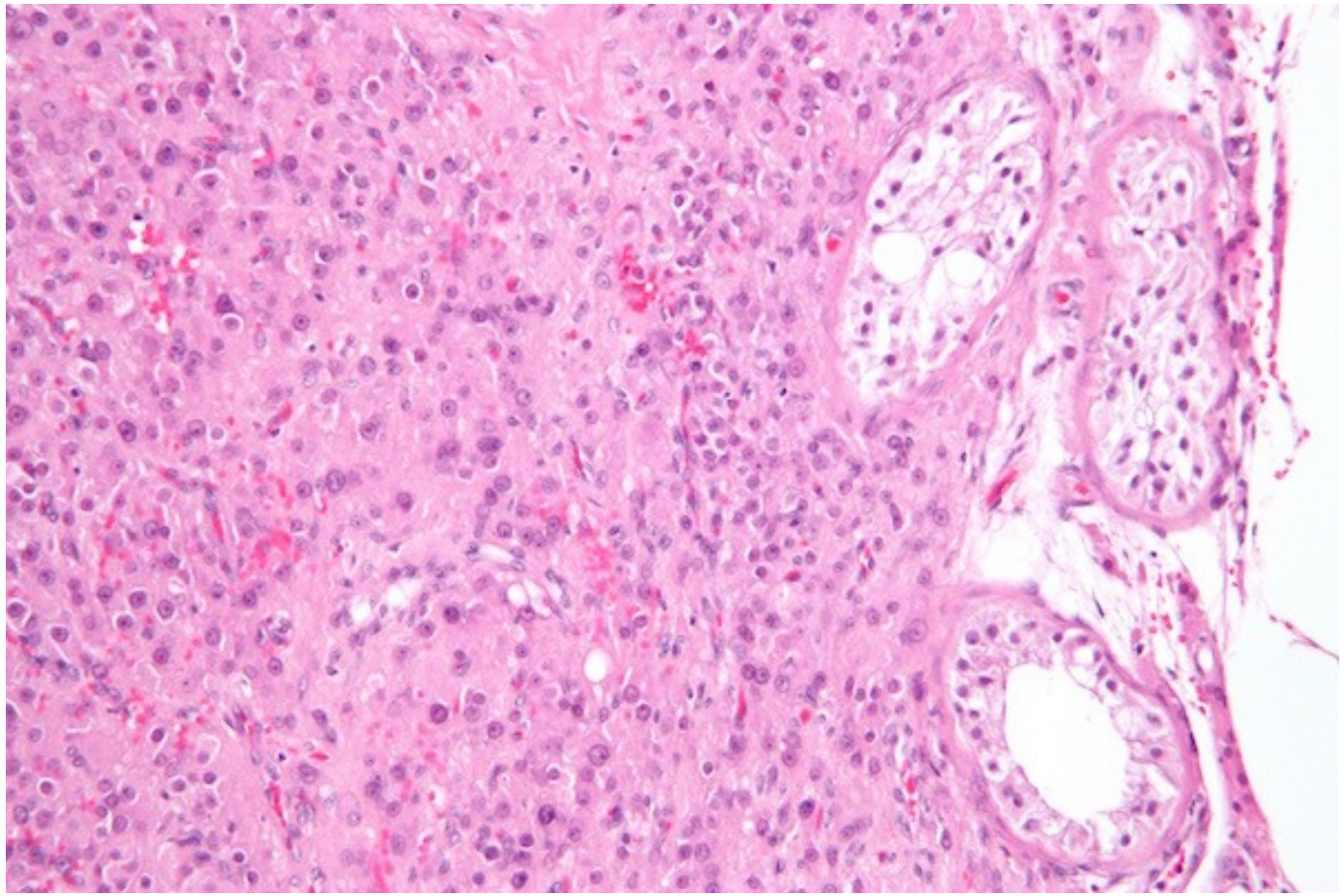
2. A 6-year-old male has recently exhibited rapid linear growth. A physical exam reveals the presence of pubic hair. A blood test reveals prepubertal (low) levels of FSH and LH but testosterone is 562 ng/dL (prepubertal reference: under 25 ng/dL). A testicular biopsy results in the image below. A genetic analysis would likely reveal an activating mutation in a gene for which protein?

A. GNRHR (GnRH receptor)

B. FSHR (FSH receptor)

C. LHCGR (LH receptor)

D. ABP (androgen binding protein)



3. A 32-year-old male has been trying unsuccessfully to conceive with his spouse for a year. The patient underwent chemotherapy, which included alkylating agents cyclophosphamide and procarbazine, ten years ago to treat Hodgkin lymphoma. A semen analysis reveals normal semen volume but detects no sperm (azoospermia). A blood test shows normal levels of testosterone and LH but elevated levels of FSH. A biopsy of the testis reveals several seminiferous tubules that resemble the image. What caused the patient's azoospermia? What explains the above normal levels of FSH in the patient?

