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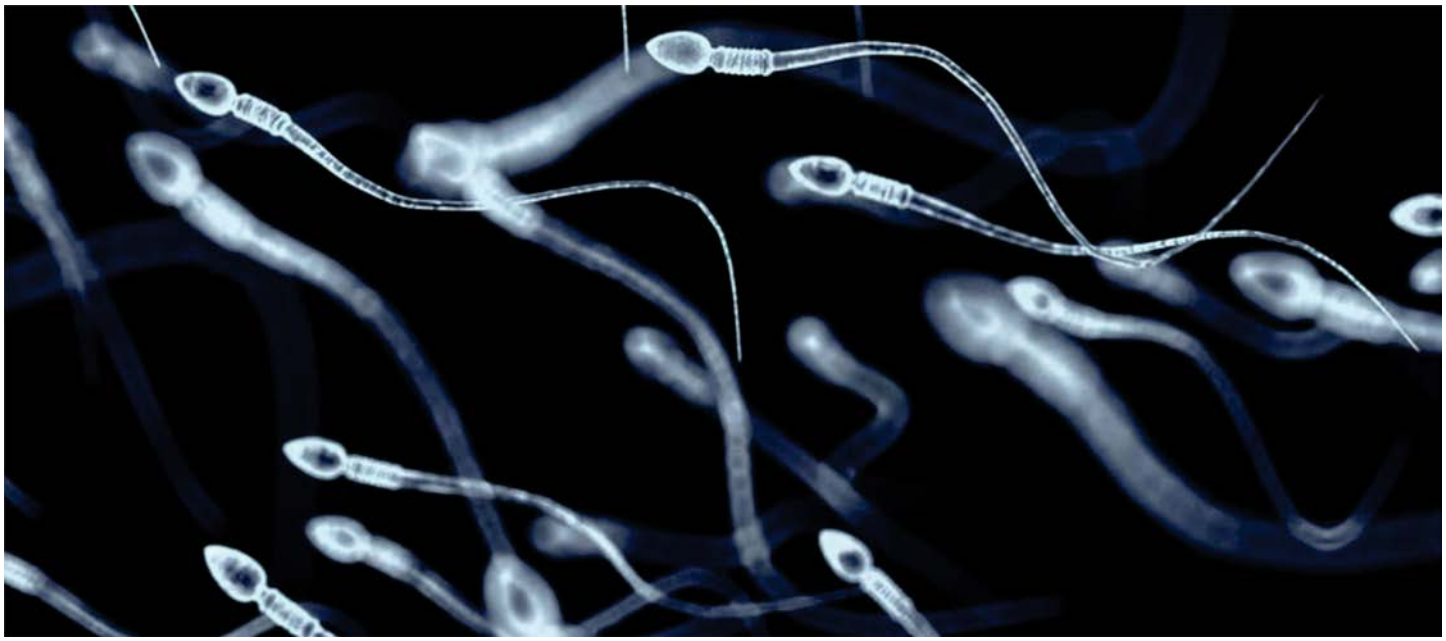

Research Highlight

Role of the Epididymis in the Maturation of Spermatozoa

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Testicular spermatozoa are immotile and infertile in reptiles. These spermatozoa release from the testis of reptiles and then become motile, which is a symbol of maturation[1]. The epididymis is considered as the place of sperm maturation. Moreover, it also helps in transportation, protection and storage of sperm.

In the epididymis, a series of events take place which results in complete sperm maturation. Complete maturation of spermatozoa results in motility and it binds to the zona pellucida. Reptilian epididymis is known to manufacture and secrete proteins[1] which are chief constituents of luminal secretary material. However, there exists no regional difference in secretory proteins of epididymal luminal fluid in *Hemiductylus flaviviridis*[2] while; it is present in *Lacerta vivipara*[3] as well as *Mabuya carinata*[4].

Accordingly, in *M. carinata*, the entire epididymal as well as the vas deferens spermatozoa exhibit the maximum percentage of motile spermatozoa on the contrary to a very low percentage of motile spermatozoa in the testicular lumen. For this reason, novel proteins of the epididymal as well as the vas deferens secretions can be involved in spermatozoa maturation[4].

These facts motivated scientists to study the effect of the secretions of various regions of the epididymis on spermatozoa motility. For this purpose, an *in vitro* research was conducted to examine the alterations in the patterns of motility of the testicular spermatozoa incubated with luminal contents of dissimilar regions of the epididymis in the lizard "*Eutropis carinata*" for the first time[5].

During this experiment, it was found that the nonmotile testicular spermatozoa from the testis show eight different patterns of motility when incubated with the luminal contents of dissimilar regions of the epididymis. Accordingly, these testicular spermatozoa incubated with the anterior and middle epididymal luminal contents show the motility patterns that are approximately similar to that of the spermatozoa of the anterior and middle epididymis respectively. On the contrary to the spermatozoa of the posterior epididymis, none of the testicular

spermatozoa showed any movement when incubated with the posterior epididymal luminal contents.

Conclusively, the testicular spermatozoa transit through anterior to posterior regions of the epididymis is essential to achieve complete motility. In a nutshell, this experiment clarifies the significance of each region of the epididymis in the physiological maturation of spermatozoa.

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