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SUPPLEMENTARY MATERIAL

Table S1. – Reproductive condition development scale in cartilaginous fishes according to Holden & Raitt (1975), Tresierra & Culquichicón (1993), Acevedo *et al.*, (2007), Colonello *et al.*, (2007) and Grijalba-Bendeck *et al.*, (2008).

	FEMALES
I	IMMATURE: Small ovaries, barely developed, watery with poorly differentiated oviducts.
II	PRE-MATURE: Thin ovaries, consistent and with pre-vitellogenic oocytes. Development of oviducal gland and oviducts.
IIIa	MATURE WITH NO EMBRYOS: Ovaries with visible oocytes, oviducts thick and visible. Oviducal gland already developed. Uterus partially enlarged with thin walls.
IIIb	MATURE WITH EMBRYOS: Ovaries with visible oocytes, embryos inside the uteri are enlarged.
IV	POSTPARTUM: Enlarged uterus with presence of placental material. Blood-spattered and flaccid walls. Expanded cloacal opening.
	MALES
I	IMMATURE: Claspers small and flaccid, not exceeding the caudal fin, with a rotation of less than 360°. Rhipidion closed. Testes watery, with poorly differentiated ducts.
II	PRE-MATURE: Claspers enlarged, extending to the anterior border of the pelvic fin and partially calcified. Consistent testes with developed spermatic vesicles, but still with abundant epigonal organ. Ducts well developed, coiled epididymis in the anterior and middle portion of the efferent duct.
III	MATURE: Claspers totally calcified, with rotation of 360° and extending farther than the anterior border of the pelvic fins: the rhipidion is open with semen present. Testes with prominent lobes indicative of active sperm production, vas deferens extending adjacent to vertebral column, epididymis coiled along entire length of duct until reaching the seminal vesicle.

Fig. S1. – Landing of a massive-2-meter *M. chilensis* specimen.

Table S2**. –** Surface sea temperatures recorded by the Peruvian Sea Institute (IMARPE) at three stations where fishing of the Chilean eagle ray occurs. Huanchaco is the nearest station to the port of Salaverry.

Year	Month	Chicama	Huanchaco	Chimbote
2017	October	15.93	16.10	17.89
2017	November	15.86	15.95	18.29
2017	December	15.92	16.35	18.82
2018	January	16.45	16.43	19.27
2018	February	17.40	17.47	18.97
2018	March	17.25	16.97	19.32
2018	April	17.60	17.24	19.51
2018	May	17.12	16.57	18.59
2018	June	16.73	16.73	18.10
2018	July	16.87	16.79	17.94
2018	August	16.84	16.56	17.87
2018	September	16.04	16.37	18.14
2018	October	16.25	16.31	18.75
2018	November	18.22	17.96	19.73

Source: Oficio N.° 0778-2025-IMARPE/OGA

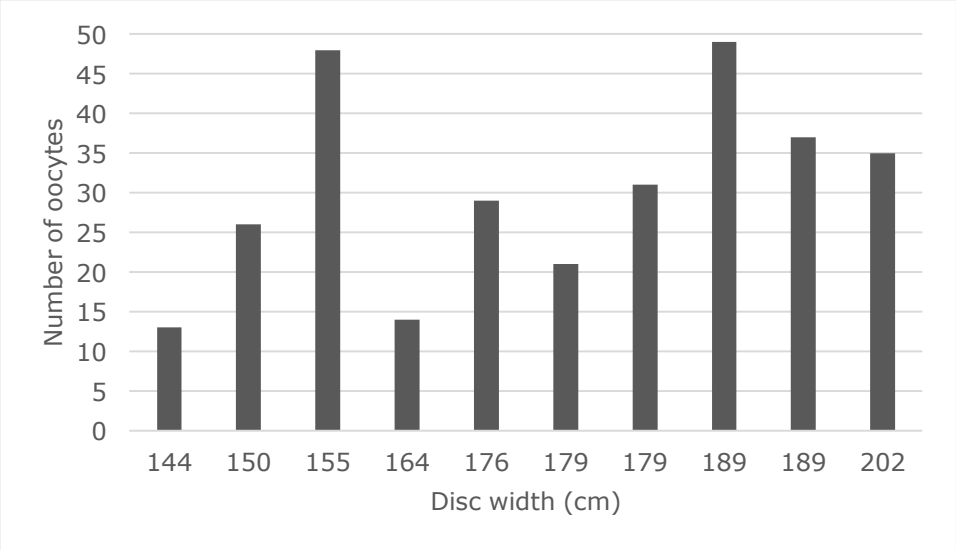

Fig. S2. – Oocyte number found in ten females; disc width is specified.

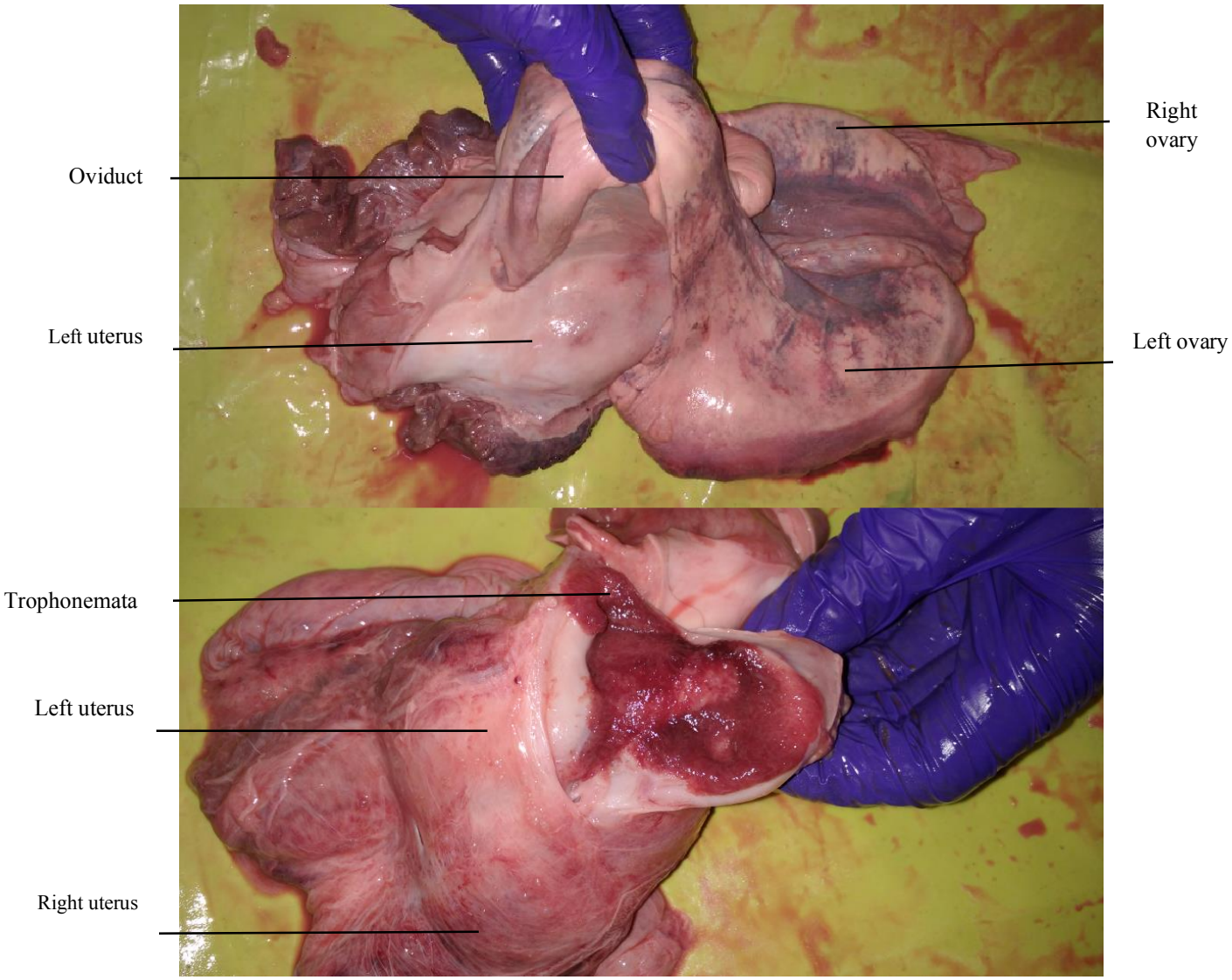

Fig. S3. – Female reproductive system of *M. chilensis*, aboral view, highlighting uteri, oviducts and ovaries (above). On cutting the uterus, trophonemata are found: structures that will be used for embryo nutrition during gestation (below).

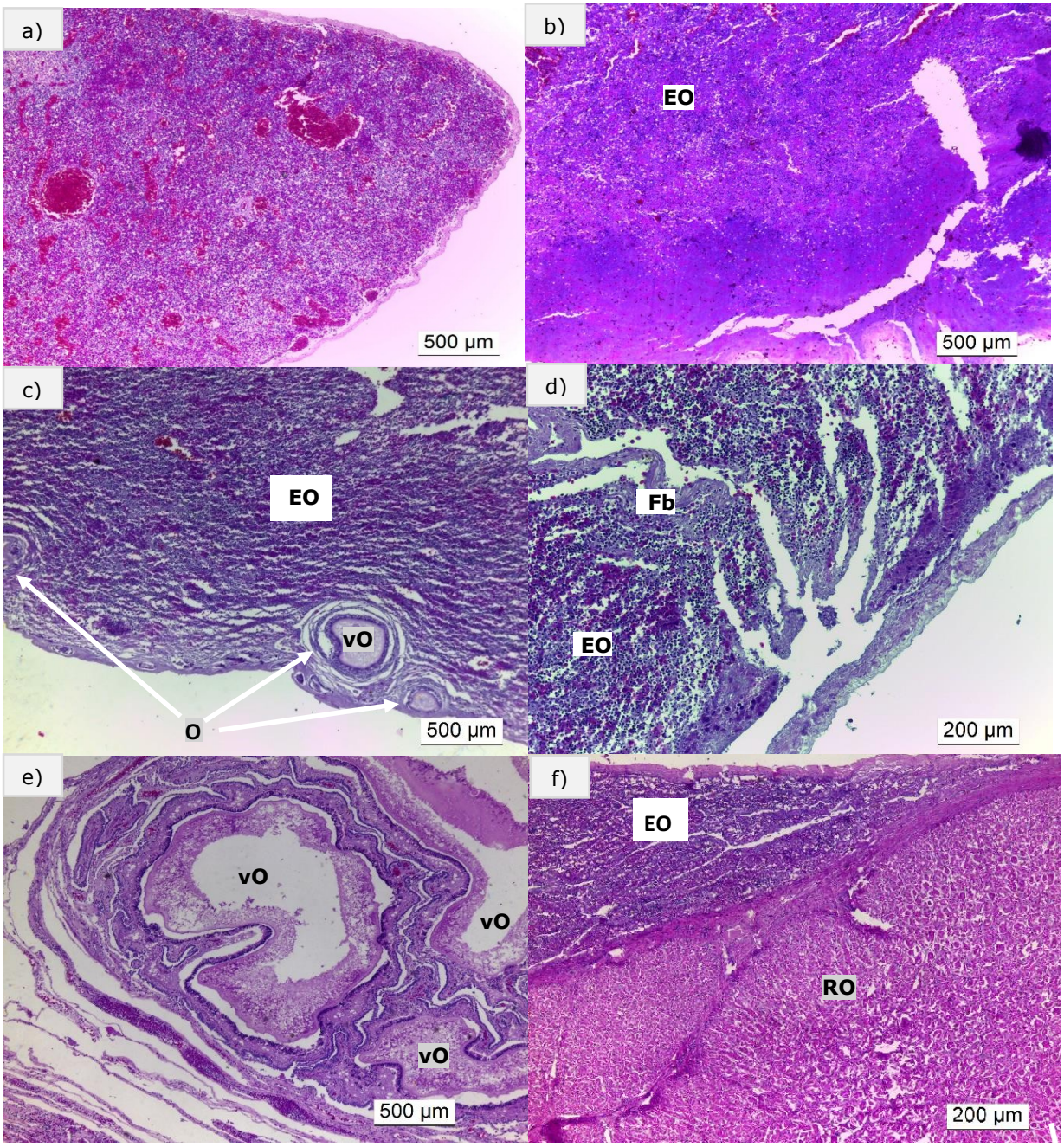

Fig. S4. – **a)** Micrography of epigonal organ (EO): a haematopoietic structure that totally or partially wraps around the gonads depending on their developmental stage. Zoom 4x. **b)** Immature ovary, germinal zone is indistinguishable and is almost totally surrounded by the EO. Zoom 4x. **c)** Left juvenile ovary with abundant amount of EO but with oocytes (O) developing on the edge (right) in what is called "germinal zone", and with even a vitellogenic oocyte (vO) being found. Zoom 4x. **d)** Right juvenile ovary with abundant amount of EO and no Os on the edge. Some inner areas develop fibroblasts (Fb). Zoom 10x. **e)** Mature ovary, three vO, with each vO one next to the other in a presumable fusion process. Zoom 4x. **f)** Right mature ovary (RO), with EO delimiting it and divided by septums. Absence of Os on the edge and stroma, which contains only serous eosinophilic ascini or organized cell assemblages bound by epithelium. Zoom 10x.

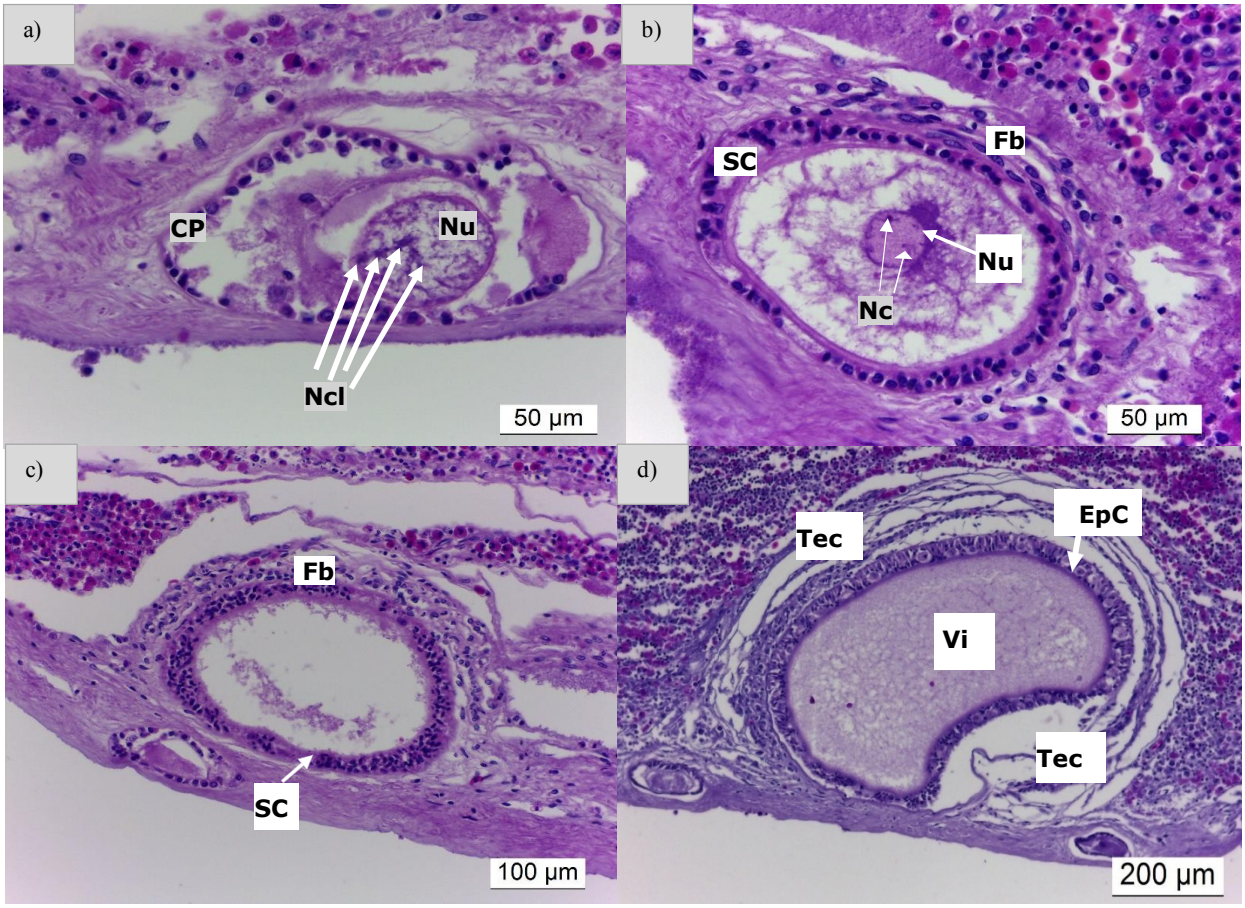

Fig. S5. – Oocytes in stages I to IV: **a)** First oocyte stage, in which it begins to be surrounded by squamous cells (SC) (flattened) and the nucleus (Nu) is distinguishable with four visible nucleoli (Ncl). Zoom 63x. **b)** Second oocyte stage, in which the oocyte is surrounded by fibroblasts (Fb) and SC. The Nu with visible Ncl are distinguishable in the cell centre. Zoom 63x. **c)** Third oocyte stage, in which both cellular layers, composed of Fb and SCs, have increased in thickness and will subsequently give rise to cells of different characteristics. The Nu cannot be visualized in this figure. Zoom 20x. **d)** Fourth oocyte stage, columnar epithelial cells (EpC) from the follicle, collagen and cubic cells of theca (Tec) were developed. Cytoplasm contains yolk granules (Vi). Zoom 10x.

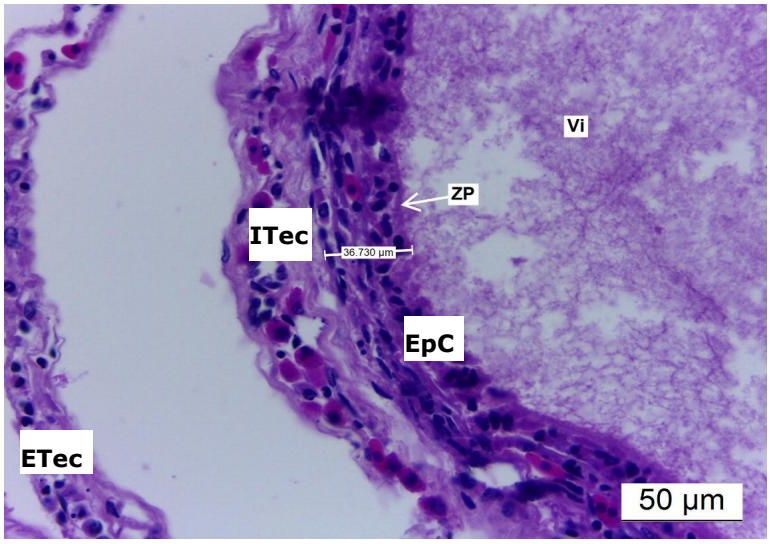

Fig. S6. – Detail of an oocyte during stage IV. The cytoplasm is full of yolk (Vi). The zona pellucida (ZP) is pointed, and continues into the columnar epithelial cells (EpC) follicle; the nuclei of the cells start to migrate towards the base. The basement membrane follows and the internal theca (ITec), with some red blood cells inside (blood supply) and, finally, the external theca (ETec), separated during the cut. Zoom 63x

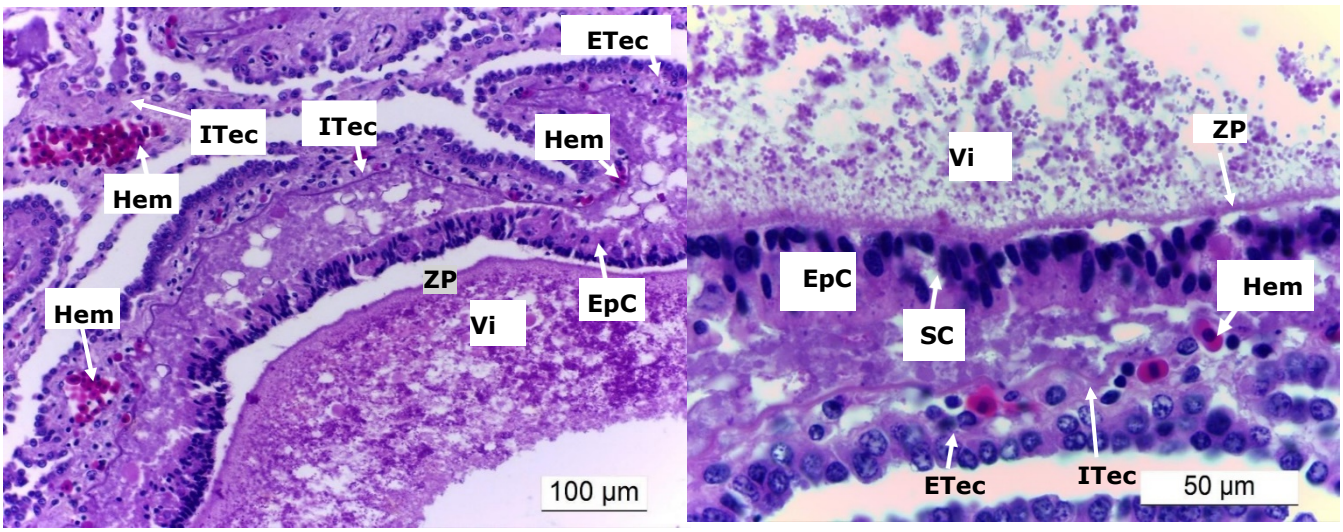

Fig. S7. – Illustration of a stage V oocyte follicle. Cytoplasm is full of yolk (Vi), next to it, the zona pellucida (ZP) and then, the cylindrical epithelial cells (EpC) and secretory cells (SC). It continues with the basement membrane and the internal theca (ITec) already highly vascularized (Hem) and finally, the external theca (ETec) made of cubic cells. Zoom 40x Left – 63x Right.

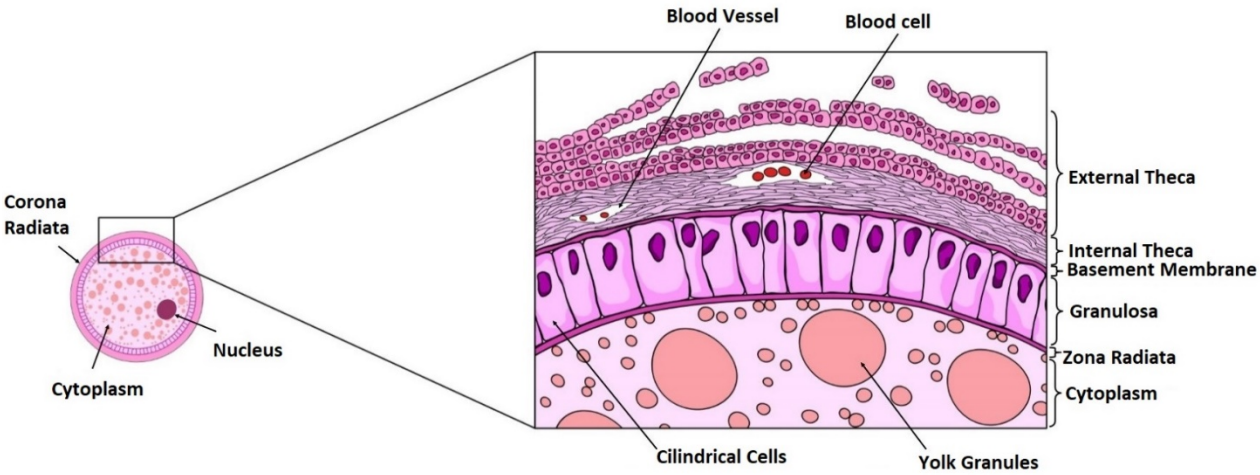

Fig. S8. – Zoom onto corona radiata in a stage V oocyte. Drawing: Armando Isla-Ventura.

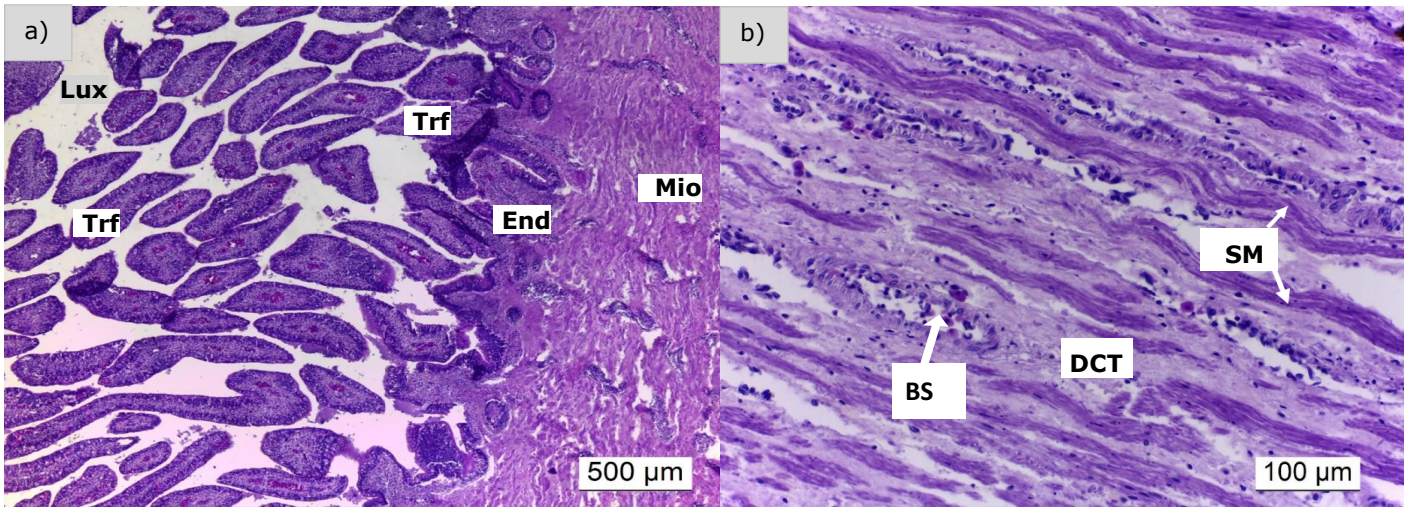

Fig. S9. – **a)** Uterus of *M. chilensis*; trophonemata (Trf) can be observed protruding from the endometrium (End) towards the uterine lumen (Lux). On the opposite side is the myometrium (Mio). Zoom 4x. **b)** Structure of the myometrium: made of muscle. Dense connective tissue (DCT), smooth muscle (SM) and blood vessels (BS). Zoom 40x

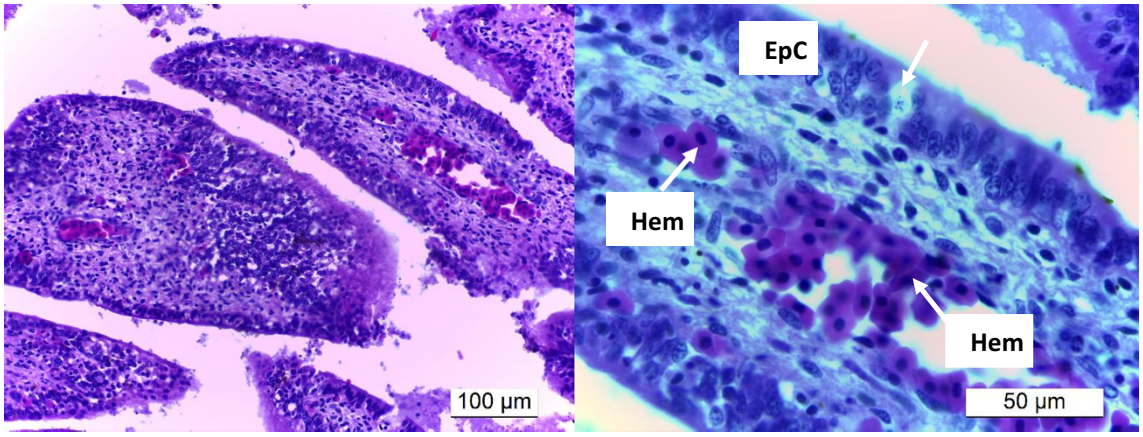

Fig. S10. – Trophonemata: the edge is covered by cylindrical epithelium cells (EpC) with some secretory cells (SS). The inner part is covered by loose connective tissue and is highly irrigated (Hem). Zoom 40x Left – 63x Right

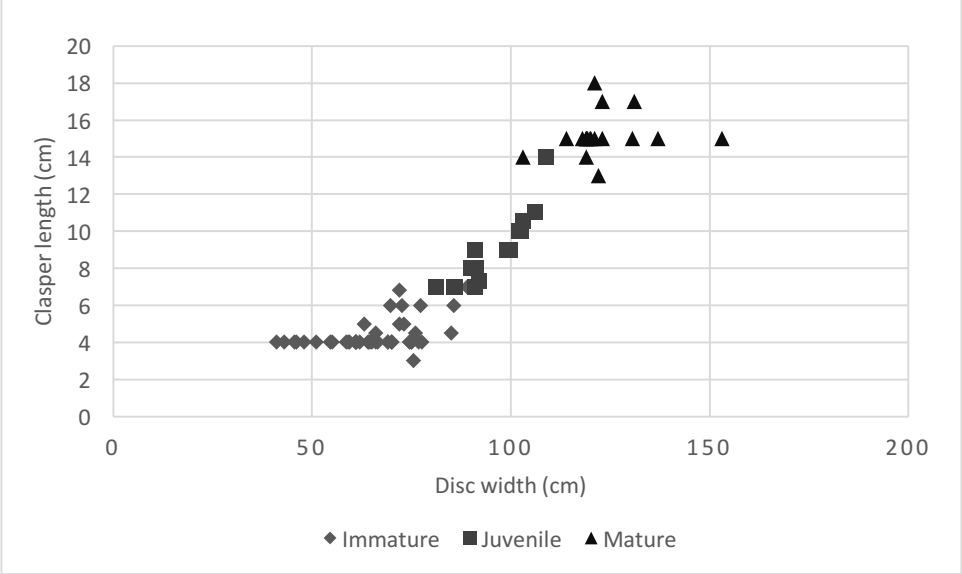

Fig. S11. – Disc width (DW) and clasper length (CL) in relation to stage.

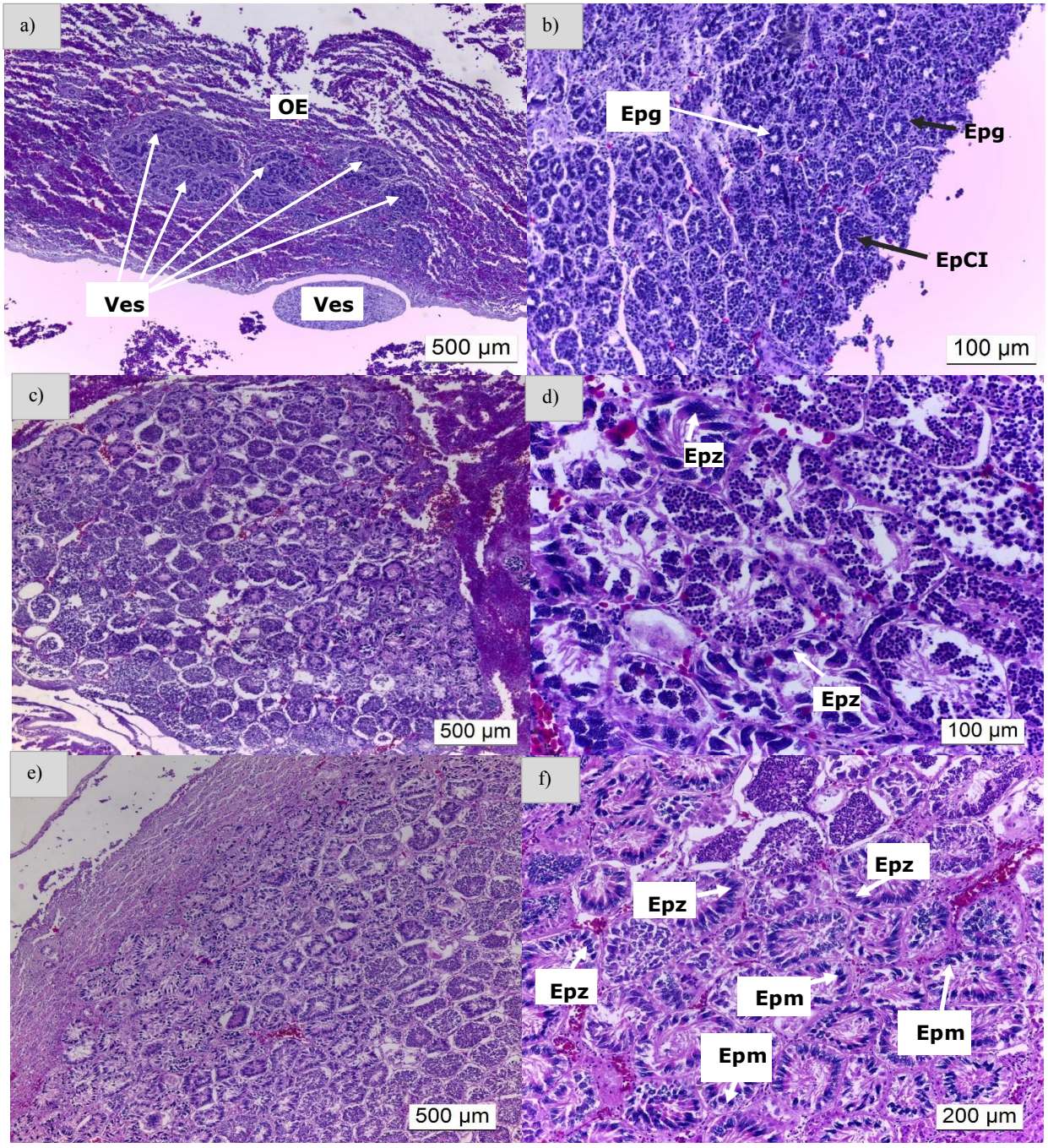

Fig. S12. – *M. chilensis* Immature testis: a) The few existing vesicles (Ves) are surrounded by abundant epigonal organ (OE). Zoom 4x. b) When developing, cyst only contain some spermatogonia (Epg) and Sertoli cells. More developed vesicles present numerous cysts, some even develop to spermatocytes I (EpcI). Zoom 20x. Juvenile testis: c) General view of a seminal vesicle, which has increased in the structure's size and the number of cysts containing. Each cyst posses' cells in the same stage. Zoom 4x d) A juvenile testis has the ability to develop spermatozoa (Epz) but the number produced is not as significant as compared to a mature testicle. Zoom 20x Mature testis: e) The seminal vesicle increased in size and numerous cysts are found. Zoom 4x d) Many of this produce spermatozoa (Epz) and the sperm packages that will be released to lumen. Zoom 40x

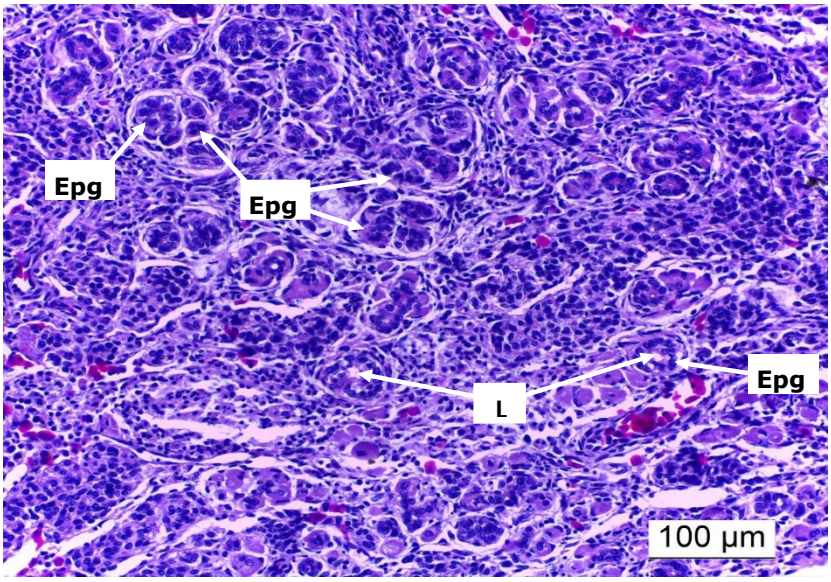

Fig. S13. – Developing cysts containing the first spermatogonia (Epg) (Phase I). Note the migration to the periphery leaving the center as a lumen (L). Zoom 20x.

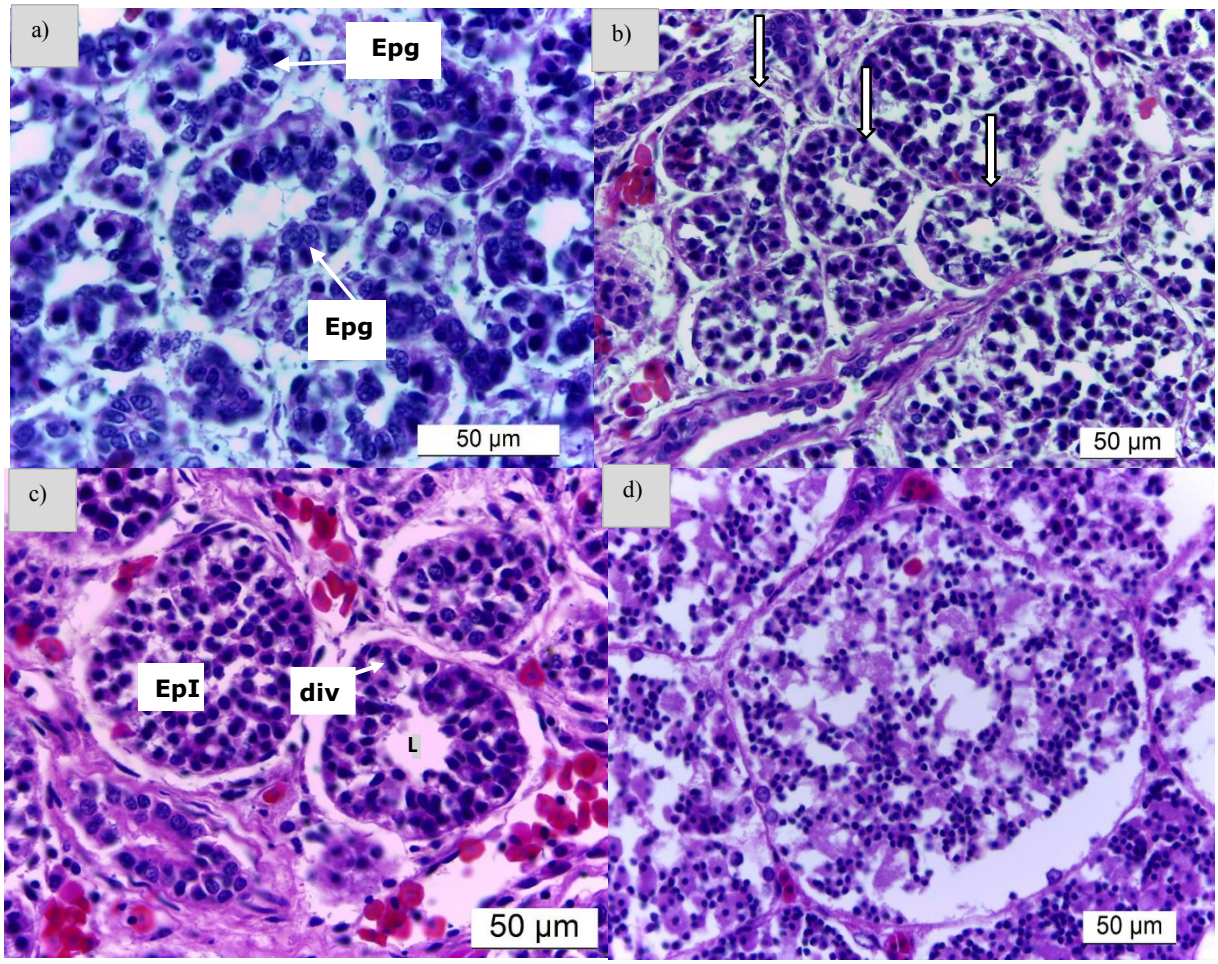

Fig. S14. – **a)** Phase II cyst. A set of cysts whose spermatogonia are finishing being arranged around. Zoom 63x **b)** Phase III cyst. Three cysts in this vesicle present spermatogonia arranged one over the other and in division. Note that as they become more abundant, the nuclei condense. Zoom 63x **c)** Phase IV and Phase III cysts. Two cysts show perfectly the differences between phases: the cyst located at the right still has the central lumen (L) and dividing spermatogonia (div) and developing into spermatocytes. The left cyst shows spermatocyte I (EpI) (with a more compact nucleus) occupying the largest available space. Zoom 63 x. **d)** Phase V cyst. Spermatocytes II are abundant; their size are smaller and their nuclei are condensed. Zoom 63x

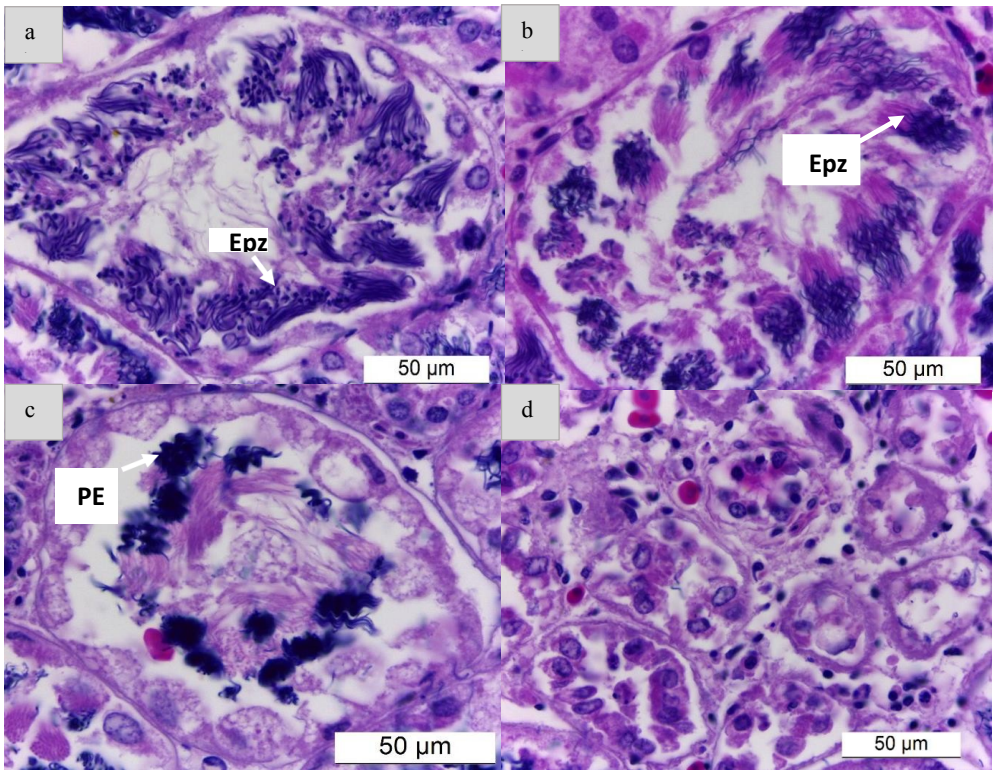

Fig. S15. – **a)** Phase IX cysts. Spermatozoa (Epz) in spiral arrangement. Zoom 63x. **b–c)** Pre-release display. Spermatozoa (Epz) in spiral arrangement join together (left) and form sperm bundles (PE), which are characteristic of Phase X; in this way, they will be transported to the epididymis. Both zoom 63x **d)** Cyst with remaining cells. Zoom 63x.

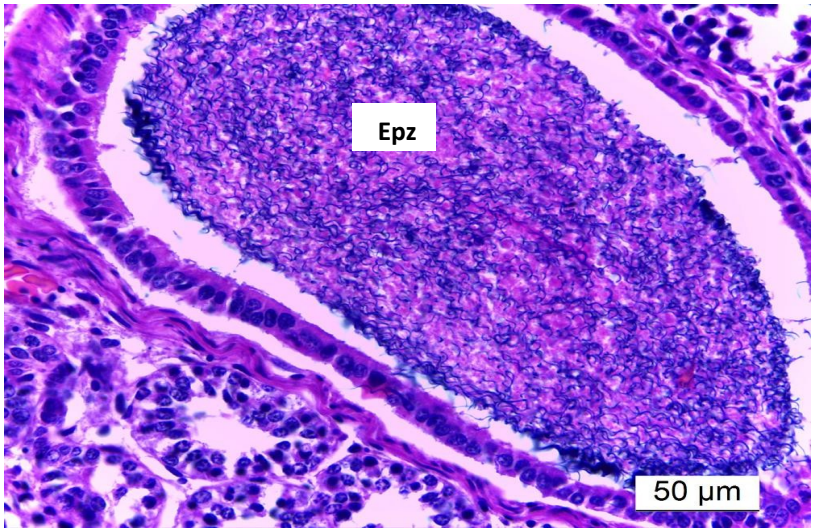

Fig. S16. – Tubule carrying mature sperm (Epz) to the epididymis. Zoom 63x.