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An ultrastructural study of Sertoli cells inside alginate microcapsules

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Sertoli cells (SeC) are the main components of the blood-testis barrier, are essential for spermatogenesis and are long known for their ability to secrete trophic, anti-inflammatory and immunomodulatory factors [1]. For these reasons, SeC have been encapsulated in sodium alginate microcapsules and then used to create an ectopic immune-privileged environment to prolong survival of co-transplanted cells or modulate the immune responses [2]. Encapsulation has represented an improvement for the use of SeC. In fact, it has been reported that inside the microcapsules SeC (SeC-MC) act as a "micro-biofactory" and drug delivery system. By secreting immunomodulatory and trophic factors once injected into the peritoneal cavity of dystrophic mice [3], they can ameliorate muscle morphology and function. Since the manipulation of the microcapsules is rather complicated, we performed for the first time, an ultrastructure study on SeC-MC. The good cell morphology, along with viability of organellar compartment, was demonstrated.

References

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Keywords
Sertoli cells, encapsulation, ultrastructure, Duchenne muscular dystrophy