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### Non-classical androgen actions in sertoli cell membrane

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The action of testosterone through its intracellular androgen receptor is known as the classical mechanism. It involves the binding of the complex hormone-receptor, to specific response elements causing DNA transcription and subsequent protein synthesis. The non-classical mechanism of testosterone involves rapid cellular response. Several authors have been investigating the non-classical mechanism of testosterone in diverse tissues, even though the receptor for this action has not been identified yet. Testosterone increases  $^{45}\text{Ca}^{2+}$  uptake within 5 min of incubation in sertoli cells from immature (4 or 15-day-old rats) as well as from rats aged 20, 30, 45 and 60 days. Testosterone also induces rapid depolarization in sertoli cell membrane from immature rats. The testosterone-induced depolarization is produced by closing of ATP-sensitive  $\text{K}^+$  channels and subsequent opening of L-type voltage-gated calcium channels. This effect seems to involve a membrane receptor which activates phospholipase C with further hydrolysis of phosphatidylinositol 4,5 biphosphate. These effects of testosterone in membrane of sertoli cell from immature rats were reproduced using nandrolone, catechin and epitestosterone and were not affected by flutamide. FSH also changes membrane potential and testosterone interfere in this response. The intratesticular testosterone concentration is high in the early postnatal period, but the intracellular androgen receptor expression is still absent in sertoli cells. Besides that, the testosterone stimulates non-classical effects in these cells. It is necessary to investigate the involvement of non-classical action of testosterone and the relative contribution of this mechanism of action in the regulation of the testicular tissue.

### Biography

Eloisa S Loss has completed her PhD in Biological Sciences, Physiology in Federal University of Rio Grande do Sul. She is Head of Department of Physiology, ICBS, Federal University of Rio Grande do Sul, in Porto Alegre, RS, Brazil. She has published more than 15 papers in reputed journals.

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