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## APELIN AS A NEW REGULATOR OF OVARIAN CELLS FUNCTION

### Summary

Adipose tissue plays an active secretory function and is considered as the largest endocrine gland of the body. Adipocytes produce and secrete into the bloodstream a number of protein hormones called adipokines, such as apelin. This hormone is a known endogenous ligand for APJ receptor. The expression of both apelin and the APJ receptor has been demonstrated in many tissues such as stomach, brain, heart, lung, uterus or testis. The role of apelin has been described in numerous physiological processes in the body, as well as in the pathophysiology of certain metabolic diseases. Recent studies suggest that apelin also regulates female reproductive functions. The article presents the actual state of knowledge on the level of apelin/APJ in the ovarian cells of both the humans and many animal species, as well as the role of apelin in regulation the ovarian follicle and corpus luteum functions. The presented data clearly indicates, dependent on the species expression of apelin/APJ in various structures of ovary and the role of apelin in steroidogenesis and apoptosis, suggesting that ovary is the target tissue for apelin action.

Key words: apelin, apoptosis, ovary, reproduction, steroidogenesis