



Adrenomedullin and Reproduction

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After graduating from the University of Hong Kong in 1971, Dr O took an MPhil degree in the Zoology Department before moving to the MRC Unit of Reproductive Biology, Edinburgh University, UK to study for a PhD degree. After spending more than a year in the Laboratory of Human Reproduction and Reproductive Biology in the Harvard Medical School, she returned to Hong Kong to take up a lectureship in the Department of Anatomy, Faculty of Medicine, The University of Hong Kong. She is currently an associate professor in the Department.

She has a wide interest in the study of reproductive biology. Her main contribution to the field of reproductive biology includes sexual differentiation and development of the ovary in rodents and marsupials, role of male accessory sex gland secretions in the control of growth and development of the sires.

She served in the World Health Organization, Human Reproduction Task Force in 1979-1982, and was a Council member of The Hong Kong Society of Endocrinology, Metabolism and Reproduction in 1990-2004 and was elected President in 1996-1998. She is currently the Honorary Director, Centre of Human Reproduction, The University of Hong Kong.

Adrenomedullin (AM) is a novel peptide that belongs to the calcitonin gene-related peptide (CGRP) family. This hormone is first identified in pheochromocytoma tissue by its ability to elicit a long-lasting vasorelaxant activity. AM has been shown in a variety of tissues including lung, heart, aorta, gastrointestinal tract, kidney, thyroid gland. The hormone has been implicated in a wide array of physiological process, including the control of vascular wall tone, electrolyte balance, immune response, cell differentiation and growth and apoptosis.

In the reproductive system, AM is found in the testis, the epididymis and the prostate and has the function to inhibit contraction of the rat prostate, vas deferens and seminiferous tubules. In the female, it has been found in the human and rat ovary and uterus. AM is known to stimulate progesterone secretion and may play a role in the development of the corpus luteum as well as in the control of blood flow to the uterus and uterine contraction.

Although AM has been found in the testis, gene expression has not been confirmed. In our laboratory, we have studied the gene expression, levels of AM and also its receptors and binding in the testis and in isolated interstitial cells of Leydig and Sertoli cells. We have also investigated the effect of AM on steroidogenesis in the Leydig cells and Sertoli cells in the presence or absence of endothelin with the aim to establish an autocrine/paracrine role of AM in the regulation of testicular function. Further understanding of AM in physiological and pathological conditions in the testis and the reproductive tract could possibly offer a novel candidate for the understanding of male infertility.