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## **Role of mating on the estradiol genomic and nongenomic signaling in the oviduct**

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Mating components include sensory stimulation, seminal plasma and spermatozoa and either individually or collectively these factors may induce in the female reproductive tract to express molecules that are potentially required for a successful pregnancy. The oviduct is a tubular organ that connects to the ovary with the uterus, and it is subjected to dynamic changes to orchestrate a series of complex events as gamete transport, fertilization and embryo development. Oviduct functions are mainly regulated by the fluctuations in the plasma level of the ovary steroids Estradiol ( $E_2$ ) and Progesterone (P) that occurs along of the estrous or menstrual cycle. However, mating-associated factors may also regulate the microenvironment of the oviduct acting through inflammatory molecules released from the uterus or cervix, or by a direct action on the oviductal cells. These mating effects are associated with changes in the expression of proteins that influence the oviduct microenvironment for a correct fertilization and embryo development. In addition, mating is able to changes the mechanism by which  $E_2$  accelerates oviductal egg transport, from a nongenomic to a genomic pathway reflecting a novel example of functional plasticity in well-differentiated cells induced by mating-associated signals. Herein, we highlight the physiological relevance of these processes in the light of the renewed importance of the oviduct in the reproductive process. Further knowledge of the molecular and cellular events that mating provide to the oviduct cells undoubtedly would bring new therapeutic strategies to treat endocrine disorders associated to infertility and pathologies in the oviduct.

### **Biography**

Pedro A Orihuela has completed his PhD from Pontificia Universidad Católica de Chile and postdoctoral studies from the millennium Institute from Fundamental and Applied Biology. He works in the Laboratorio de Inmunología de la Reproducción, Departamento de Biología, Universidad de Santiago de Chile. He has been awarded as corresponding member of the Peruvian Academy of Sciences. He is fellow member for various societies such as Society for the Study of Reproduction-USA, Chilean Society of Cell Biology, Chilean Society of Reproductive Biology, Chilean Society of Biology and Latinoamerican Association of Human Reproduction-ALIRH. He has published more than 35 papers in reputed journals and 4 book chapters and serving as an Editorial Board and Reviewer member of reputed Journals. He has been mentor of the thesis of several students from biochemistry, biology and PhD in biotechnology. In his laboratory, he has received students from various Latinoamerican countries to make training in Reproductive Biology.

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