

Control of ciliary movement in mammalian oviductal ciliated cells

Manuel Villalon & Pedro Verdugo

Abstract

In vertebrates, ciliary-driven flow plays an important role in the clearance of the airways, and in the transport of gametes in the oviduct. However, in spite of the importance of the cilium as a mechanical effector, the chemical signals that control ciliary movement remain vastly unknown. In this paper we review our work and current knowledge of the hormonal signals and intracellular mechanisms that control ciliary movement in mammalian ciliated cells. Our observations indicate that catecholamines can directly stimulate oviductal ciliated cells, and ovarian steroids can modulate the responses of ciliated cells. We have also shown that ciliated cells respond to ATP and prostaglandins and that changes in intracellular calcium play a role in the coupling of hormonal stimulation in oviductal ciliated cells.