

P012 Spatial, a new gene regulated by cAMP signalling during cell morphogenesis

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Spatial is a new mouse gene, expressed by highly polarized cells as germ cells in the testis, neurons in the brain and stromal cells in the thymus. In the testis, Spatial plays a potential role during the elongation of spermatids and the formation of the spermatozoa tail. Purified germ cells treated with the cAMP analog undergo a spermatid differentiation with an overexpression of Spatial. During the development of the central nervous system, Spatial expression is restricted to particular neuronal cell types. In neuroblastoma cells undergoing differentiation mediated by the cAMP analog treatment, Spatial is also overexpressed and localized in neurite outgrowth. In the thymus, Spatial is expressed by highly organized stromal cells crucial for T cell development. Purified stromal cells maintained in culture loose Spatial expression which is the case of many genes that require a normal three-dimensional organization of stromal cells for their expression. However, by treating culture stromal cells with the cAMP analog, the expression of Spatial persists confirming that **a specific cAMP signalling, and not the thymic architecture, is indispensable for the expression of Spatial.** We conclude that Spatial is regulated by a specific cAMP pathway required for the development of a morphologically simple precursor to a complex polarized cell.