ABSTRACT

Poster Instructions

Title	**GONADAL HORMONES AFFECT DIFFERENT CELL POPULATIONS OF THE NEUROGENIC LINEAGE IN THE SUBVENTRICULAR ZONE OF ADULT MALE RATS** **Room: Poster Area - Session: A10 - Abstract Number: FENS-2011 - Poster Board Number: A014**
Poster No:	A014
Presenter:	G. Ponti
Author(s):	**G. Ponti**(1), A. Farinetti(1), G.C. Panzica(1)
Affiliation(s):	(1)Dept. of Neuroscience "Rita Levi Montalcini", University of Turin and Neuroscience Institute Cavalieri Ottolenghi (NICO), Orbassano (TO), Italy
Session:	A10: Poster Session - Neurogenesis and gliogenesis: Cell lineage and cell fate specification Poster boards: A001-020
Date:	Monday - July 07, 2014 12:15 - 13:15
Location:	Poster Area
Subtopic:	A.2.a Cell lineage and cell fate specification
Topic:	A.2 Neurogenesis and gliogenesis
Theme:	A. Development

Neurogenesis in the rodent subventricular zone (SVZ) start from a subpopulation of astrocytes (B1 cells), that give rise to intermediate progenitors (C cells), which divide to generate neuroblasts (A cells) that continue to proliferate and migrate to the olfactory bulb, in a process of continuous neuronal replacement that occurs throughout life. Cell proliferation within the SVZ is regulated by several factors including gonadal hormones and the hormonal action is particularly important in males (see Farinetti and Panzica abstract).

Here we analyzed the effects of gonadal hormones on different cell subpopulation of male rat SVZ. Adult male rats were either bilaterally castrated, or castrated and treated with testosterone or estradiol, or sham operated. Two days after the hormonal treatment animals were sacrificed. In castrated untreated rats total proliferation and C cell (Ascl1+) density was decreased, while GFAP immunoreactivity (astrocyte marker) increased in comparison to the other groups. Hormone-treated males showed a full recovery of cell number, suggesting that this effect is likely to be mediated by estrogen receptor (ER)a. However, only rare cells were ERa+ in the SVZ in every group. Whereas, the number of ERa+ cells increased in castrated untreated rats in the hypothalamus and in the nucleus accumbens. The analysis of double labeling with NeuN, a marker of postmitotic neurons suggest that the majority of ERa+ cells were neurons. This percentage was not significantly different among groups indicating that the higher expression of ERa was not confined to a single cell population.