



Vol. 118, n. 2 (Supplement): 27, 2013

ITALIAN JOURNAL OF ANATOMY AND EMBRYOLOGY

Expression of Reelin in cancer stem cells isolated from human glioblastoma

Filippo Biamonte, Bianca Maria Scicchitano and Gigliola Sica

Istituto di Istologia ed Embriologia - Facoltà di Medicina e Chirurgia "A. Gemelli", L.go Francesco Vito 1, Roma

Reelin is a large secreted extracellular matrix glycoprotein which contributes to positioning, migration and laminar organization of several central nervous system structures during neurodevelopment. Recent studies reported the expression of Reelin and its intracellular adapter protein DAB1 in neuroblastoma, where it appears to be involved in cell motility and invasiveness. Interestingly, our data obtained by immunolocalization analysis show the expression of Reelin in both tumor and peritumoral area of glioblastoma (GBM). It is known that many solid tumors may originate from cancer stem cells (CSC) which are usually resistant to common therapies and might be involved in tumor progression. Therefore, we evaluated the expression of Reelin in CSC neurospheres isolated from both tumor (GCSC) and peritumoral area (PCSC) of GBM. Immunocytochemistry analysis showed the expression of Reelin in both cell types, suggesting that this protein may contribute to neurosphere tridimensional organization and possibly to cell migration during tumor progression. This is the first evidence of Reelin expression in human GBM which might indicate a pivotal role of this protein in the regulation of tumor development. Our data may open potential avenues for GBM treatment by targeting Reelin signaling activity.

References

- [1] Biamonte et al. (2009) Interactions between neuroactive steroids and Reelin haploinsufficiency in Purkinje cell survival. *Neurobiol Dis* 36(1): 103-15.
- [2] Becker et al. (2012) Reelin signalling in neuroblastoma: migratory switch in metastatic stages. *Int J Oncol* 41(2): 681-9.

Key words

Reelin, DAB1, Cancer stem cells, Glioblastoma, Neurospheres.