

## Validation of novel growth-promoting and growth-suppressing genes in neuroblastoma cells

**Dalia Hammouche**

*Great Ormond Street Institute of Child Health, University College London, 30 Guilford st., London WC1N 1EH, UK*

### Abstract

Neuroblastoma is the most common extra-cranial embryonal tumour in children. Treatment outcomes and five-year survival rates are very poor, thus for improved results there is a need to understand its genetic and molecular drivers. Aim: This laboratory project focused on novel genes that can potentially be targeted to induce growth suppression or increase neural differentiation in neuroblastoma cells. To characterise the novel growth-promoting or suppressive actions of selected oxovanadium-response genes, coded BRG1-5, and putative suppressor gene PTPRH, through gain/loss-of-function assays and enzyme inhibitory assays in neuroblastoma cells.

**Methods:** SiRNA and plasmid of the genes were transfected into neuroblastoma cells; Cell morphology was studied by microscopy, and quantitation of growth was done through resazurin assays. Inhibitors of glycosaminoglycan synthesis, thought to be upstream of BRG3, were assayed using resazurin to check the involvement of glycosaminoglycan signaling in NB cell survival.

**Conclusion:** This study identified the growth-promoting and suppressing effects of the novel genes in Neuroblastoma and confirmed the morphological location of the proteins in some neuroblastoma cell lines. In addition, it estimated the response to Glycosaminoglycan synthesis inhibitor and calculated the EC50. This Glycosaminoglycan pathway, potentially acting via BRG3, could present a route for defining a new target treatment for Neuroblastoma. The novel BRG3 data may be of particular interest, since BRG3 is implicated in other cancers, but not so far in neuroblastoma.



### Biography:

Dalia Hammouche has completed her MSc in Paediatric and Child Health, Molecular and Genomic Paediatrics from University College London. She is an academic clinical fellow trainee in paediatric oncology at Southampton University. She has published a good number of publications and presentation nationally and international conferences and meetings. Dalia has been nominated and won a number of prizes and awards: she has been nominated to (You Made a Difference awards) at Addenbrooke's Hospital. She has won the Best Poster Presentation Prize at 38th Malkin Meeting. She has won the Best Poster Prize at Annual East Midlands Orthopaedic Research Meeting.



### Speaker Publications:

- 1 Dalia Hammouche et al ; Biodegradable bone regeneration synthetic scaffolds: in tissue engineering, 2019 Oct 29.
2. Dalia Hammouche et al ; Impact of full field digital mammography on the classification and mammographic characteristics of interval breast cancers. 2015 Jun.
3. Dalia Hammouche et al ; The surgical management of symptomatic articular cartilage defects of the knee: Consensus statements from United Kingdom knee surgeons, 2015 Oct
4. Dalia Hammouche et al ; Calcium salts bone regeneration scaffolds: a review article, 2012 Sep
5. Dalia Hammouche et al ; Increased Alcohol Seeking in Mice Lacking Gpr88 Involves Dysfunctional Mesocorticolimbic Networks, 2018 Aug.

4<sup>th</sup> International Conference on  
**Tumor & Cancer Immunology and Pediatric-oncology**  
May 08, 2020.

### Abstract Citation:

Dalia Hammouche; Validation of novel growth-promoting and growth-suppressing genes in neuroblastoma cells; Tumor & Cancer Immunology 2020; May 08, 2020.