

# Predictive, Preventive and Personalized Medicine & Molecular Diagnostics

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## Does CD15 expression identify a phenotypically or genetically distinct glioblastoma population and possible therapeutic target?

**Kenney-Herbert Emma**  
Cambridge University, UK

The prognosis for patients with glioblastoma (GB) remains poor. Recent research has focused on the hypothesis that the growth and regeneration of GB is sustained by a sub-population of self-renewing stem-like cells. This has led to the prediction that molecular markers for cancer stem cells in GB may provide a treatment target. One candidate marker is CD15; we wanted to determine if CD15 represented a credible stem cell marker in GB. We investigated CD15 as a potential marker for treatment in patient GB samples, primary GB cell lines (GBC) and in tumour forming assays in mouse models. We found that the prevalence of CD15+ cells was varied in 10 patient GB tumours and CD15+ cells were less proliferative than their CD15- counterparts. In vitro, CD15 did not confer a proliferative advantage. Furthermore, GBCs sorted for CD15+ and CD15- were not significantly different cytogenetically or in terms of gene expression profile. Sorted single CD15+ and CD15- cells were equally capable of reconstituting a heterogeneous population containing both CD15+ and CD15- cells over time; and both CD15+ and CD15- cells were able to generate tumours *in vivo*. Our data confirms that CD15 does not identify a sub-population of cancer stem cells. Instead, detailed single cell analysis suggests that CD15+ cells are a component of the variegated clonal architecture typical of GB. However, we believe there is a role for our experimental models to assist in the finding of further GB therapeutic targets.

### Biography

Kenney-Herbert Emma completed her PhD from Cambridge University, UK. She graduated in Entry Medicine at Imperial College London and qualified in 2014. She is now working as a Junior Doctor at The Chelsea and Westminster Hospital, London. She plans to forge a career as an Oncologist and continue to play an active role in research.

[emmakenneyherbert@yahoo.co.uk](mailto:emmakenneyherbert@yahoo.co.uk)

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