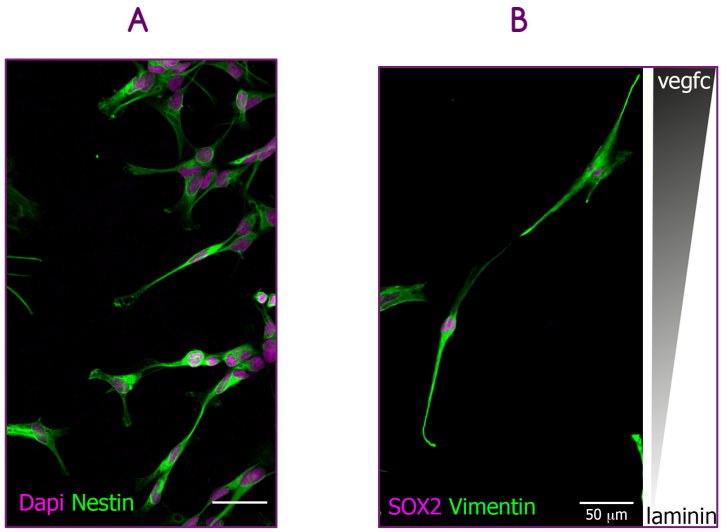
Glioblastoma cancer stem cells elongate in VEGF-C surface gradient

Cline Nano Gradients were used to study how a gradient of surface-bound VEGF-C affects glioblastoma cancer stem cells. Study was performed by Petra Sekyrova, PhD, Karolinska Institute Sweden (2016).

Glioblastoma is a most common type of brain tumor. Its unpredictable and aggressive behavior leads to very poor therapeutic outcome. To find out how to effectively target glioblastoma it is crucial to understand the role of glioblastoma cancer stem cells, which are responsible for an unusual plasticity of this tumor.

Laminin vs. Laminin/VEGF-C

Glioblastoma cancer stem cells were grown on VEGF-C/laminin gradient surface and tested for the ability to respond to a gradient of a VEGF-C guiding factor. Glioblastoma cells were obtained from the *Human Glioblastoma Cell Culture Bank*, Uppsala, Sweden.



A) Laminin-coated coverslip. B) VEGF-C and Laminin bound to Cline Nano Gradient. Higher concentration of VEGF-C in the upper part of the surface and lower concentration in the lower end of the surface.

Results

Cells elongated and stretched across a two times longer distance within the VEGF-C/laminin gradient compared to when grown only on laminin. Glioblastoma stem cells grown on a VEGF-C/laminin gradient surface retained their stemness properties, as reflected by SOX2 and Vimentin immunostaining.

In conclusion, VEGF-C/laminin gradient surface allowed studying behavior of glioblastoma cancer stem cells without interfering with their stemness properties and cells were responding to the VEGF-C gradient by change in morphology.

Cline Scientific AB
www.ClineScientific.com
+46 31 387 55 55