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1: [Mol Cell Neurosci.](#) 2008 Aug 7. [Epub ahead of print] [Related Articles, Links](#)

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FULL-TEXT ARTICLE

Presence of pluripotent CD133(+) cells correlates with malignancy of gliomas.

[Thon N](#), [Damianoff K](#), [Hegermann J](#), [Grau S](#), [Krebs B](#), [Schnell O](#), [Tonn JC](#), [Goldbrunner R](#).

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BACKGROUND: Presence of CD133(+) cancer stem cells has been demonstrated within glioblastoma multiforme (GBM), the most malignant phenotype of gliomas (WHO grade IV). Since GBM frequently develops from low grade gliomas (WHO grade II) we assessed a possible qualitative or quantitative correlation of CD133(+) cells and glioma grade to get new insights in gliomagenesis. RESULTS: The amount of CD133(+) cells within the bulk tumor mass, analyzed by immunostaining and Western blotting, showed a clear quantitative correlation with glioma grade (WHO degrees II, III and IV). Most of CD133(+) cells were arranged in clusters frequently associated to tumor vessels. Protein analysis revealed high cellular coexpression of CD133 with Musashi-I but not CD34 indicating a neural, i.e. local origin of these cells. In vitro, no differences in stem cell properties concerning self-renewal and multi-lineage differentiation have been found for CD133(+) cells isolated from gliomas of different grades. CONCLUSIONS: These findings indicate a solely quantitative correlation of glioma grade with the presence of neural CD133(+) cells within tumors supporting the concept of a CD133(+) stem cell dependent gliomagenesis.

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