Reviewer's report

Title: Matrix gla protein (MGP): an overexpressed and migration-promoting mesenchymal component in glioblastoma

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Reviewer: Anna Krichevsky

Reviewer's report:

This is a nice, though quite small study showing that MGP is overexpressed in glioma and involved in tumor cell migration. It doesn’t provide any data on the mechanism underlying MGP function.

Major Compulsory Revisions.

Although the authors claim that they performed invasion studies, in fact only migration assays were conducted. If the authors hypothesize that MGP promotes glioma invasion (as it stated at the end of the Introduction) they should conduct proper invasion assays, for example, using matrigel-coated Boyden chambers.

Minor Essential Revisions.

1. Western blot analysis of MGP expression in GBM tissue vs. normal brain cortex would substantiate the expression data obtained by qRT-PCR.

2. According to figure 5C and D, MGP8 siRNA has much stronger effect on cell migration than MGP4 siRNA. However, the graph presented on Figure 5A doesn’t reflect that. Either the images are not representative or the graph is not accurate.

3. Why relatively uncommon glioma cell lines were used in the study? Some justification would be helpful. Have the authors examined commonly used glioma cell lines, such as, A172, U87, U257, or LN229?

Discretionary Revisions.

1. There is inconsistency in usage of time terms throughout the text, e.g. h and hours, min and minutes. The authors should choose one of terms to describe the time.

2. Arrows for positive cells in Figure 2A and B would be helpful.

3. Statistical analysis of the data presented in Figure 1 will improve presentation of the data.

4. Some data on interaction and co-localization of MGP with other ECM proteins (e.g. BMP, Vitronectin) in glioma would make the paper significantly more interesting. For example, co-immunoprecipitation and immunohistochemistry can
be performed.

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Acceptable