miR-218 microRNA precursor is a small non-coding RNA that regulates gene expression by antisense binding.

miR-218 appears to be a vertebrate-specific microRNA and has now been predicted and experimentally confirmed in a wide range of vertebrate species

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A study was performed to investigate the impact of miR-218-5p on stem cell properties and invasive ability of the A2B5+CD133- human glioma stem cell subgroup. qRT-PCR was used to detect miR-218-5p expression in non-cancerous brain and human glioma tissues, human glioma cell lines, and human glioma stem cell lines. Lentivirus vectors encoding miR-218-5p and anti-miR-218-5p were constructed and stably transfected into A2B5+CD133- SHG-139s cells. Neurosphere formation Cell Counting Kit-8 (CCK-8) and Transwell assays, immunofluorescence, and qRT-PCR analyses were used to explore the role of miR-218-5p in SHG-139s cells. qRT-PCR analysis showed that miR-218-5p expression was lower in human glioma tissues and cells than in non-cancerous brain tissues and normal human astrocyte cells, and lower in A2B5+CD133- (SHG-139s) cells than in CD133+ (SU2 and U87s) cells. The CCK-8 assay demonstrated that the growth curve was significantly inhibited in the miR-218-5p-SHG-139s cells compared to the miR-control, blank and anti-miR-218-5p groups. The neurosphere formation assay indicated that upregulation of miR-218-5p expression inhibited SHG-139s neurosphere formation. Immunofluorescence staining and qRT-PCR showed that miR-218-5p reduced stem cell marker (A2B5, nestin, PLAGL2, ALDH1, and Sox2) expression compared with the controls; however, immunofluorescence staining analysis showed that upregulation of miR-218-5p expression led to no difference in CD133 expression. miR-218-5p reduced SHG-139s cell invasiveness in the Transwell assay and reduced MMP9 expression as detected in qRT-PCR and immunofluorescence analyses. All differences were statistically significant. miR-218-5p expression was lower in human glioma tissues, cells, and the A2B5+CD133- human glioma stem cell subgroup. miR-218-5p may be a tumor-suppressor gene in glioma that functions by upregulating miR-218-5p expression, which inhibits the stem cell properties and invasive properties of SHG-139s cells [1].

Following the publication of this paper, it was drawn to the Editors' attention by a concerned reader that Fig. 5 on p. 874 contained a series of DAPI panels within the figure that looked unexpectedly similar in appearance, with the similarities also evident in the second and 'Merge' data columns; moreover, of especial note, the similarities in the 'DAPI' panels for the Blank control experiments shown in Fig. 5C and D only affected a partial section of the data. In addition, the 'blank' and 'miR-control' panels in Fig. 6A also appeared to contain overlapping data. Independently of the issues that were raised by the interested reader, the authors themselves requested that their paper be retracted on account of having identified some problems with the presentation of various of the figures, and no longer being able to access their original data. The Editor of Oncology Reports has agreed that this paper should be retracted from the Journal, and apologizes to the readership for any inconvenience caused. [Oncology Reports 35: 869-877, 2016; DOI: 10.3892/or.2015.4418] [2].

1)
Wu Z, Han Y, Li Y, Li X, Sun T, Chen G, Huang Y, Zhou Y, Du Z. MiR-218-5p inhibits the stem cell properties and invasive ability of the A2B5⁺CD133⁻ subgroup of human glioma stem cells. Oncol Rep. 2016 Feb;35(2):869-77. doi: 10.3892/or.2015.4418. Epub 2015 Nov 13. Retraction in: Oncol Rep. 2022 Oct;48(4): PMID: 26572167.
2)
Wu Z, Han Y, Li Y, Li X, Sun T, Chen G, Huang Y, Zhou Y, Du Z. [Retracted] miR-218-5p inhibits the stem cell properties and invasive ability of the A2B5+CD133- subgroup of human glioma stem cells.

Oncol Rep. 2022 Oct;48(4):168. doi: 10.3892/or.2022.8383. Epub 2022 Aug 3. PMID: 35920181.