Author's response to reviews

Title: MicroRNA-21 inhibitor sensitizes human glioblastoma cells U251 (PTEN-mutant) and LN229 (PTEN-wild type) to taxol

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Dear Editor-in-chief,

Please find attached our manuscript entitled “MicroRNA-21 inhibitor sensitizes human glioblastoma cells U251 (PTEN-mutant) and LN229 (PTEN-wild type) to taxol”, which we would like to submit for your consideration for publication in *BMC Cancer*.

Accumulating evidence show that miR-21 is an important oncomir and regulates cancer cell proliferation, apoptosis, and invasiveness. In this study, GBM U251 (PTEN-mutant) and LN229 (PTEN-wild type) cells were treated with taxol and a miR-21 inhibitor (in a poly (amidoamine) (PAMAM) dendrimer), alone or in combination. Using *in vitro* approaches, our study showed that inhibition of miR-21 could enhance the chemotherapeutic effect of taxol in GBM cells independent of PTEN status although PTEN is one of the targets for miR-21. It is worth noting that the miR-21 inhibitor additively interacted with taxol on U251 cells and synergistically on LN229 cells. Besides, after the miR-21 inhibitor and taxol treatment, EGFR pathway activity and STAT3/p-STAT3 expression were decreased to relatively low levels. The data strongly suggested that a regulatory loop between miR-21 and STAT3 might provide an insight into the mechanism for modulating EGFR/STAT3 signaling. Taken together, the miR-21 inhibitor could enhance the chemosensitivity of human glioblastoma cells to taxol. A combination of a miR-21 inhibitor and taxol could be an effective therapeutic strategy for controlling the growth of GBM by inhibiting STAT3 expression and phosphorylation.

Because of the importance and relevance of our findings for the broader scope of cancer therapeutics, we would like to have this paper published in *BMC Cancer* and hope to have your support.

Please do not hesitate to contact me if you need additional information.

Sincerely yours,

Chunsheng Kang, Ph.D.
Professor