Silencing of MTA1 in endothelial cells induced tumor regression by inhibiting angiogenesis via downregulation of S100A4

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Silencing of MTA1 in endothelial cells induced tumor regression by inhibiting angiogenesis via downregulation of S100A4
(119/120 letters)

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Metastasis-associated proteins, such as S100A4 and MTA1, have been studied for over two decades, but correlation between the two proteins remains obscure. A recent report suggesting that silencing of S100A4 in endothelial cells significantly suppresses *in vitro* tube formation and *in vivo* tumor angiogenesis, motivated us to examine MTA1 from the same perspective. In this study, we showed that the suppression of MTA1 in endothelial cells by murine MTA1-specific small interference RNA (mMTA1 siRNA) induced inhibition of tube formation *in vitro* and new blood vessel formation *in vivo* using Directed In Vivo Angiogenesis Assay (DIVAA). Moreover, we found mMTA1 siRNA inhibited tumor angiogenesis in a xenograft model. Further, we revealed that inhibition of angiogenesis by MTA1 siRNA mediates downregulation of S100A4 followed by promoting phosphorylation of non-muscle myosin IIA (NMIIA) and the signaling might be independent of VEGF/ VEGFR pathway in endothelial cells. These data suggested that silencing of MTA1 in endothelial cells could be used as a new strategy to induce tumor regression, by inhibiting tumor angiogenesis.

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