

Silencing of MTA1 in endothelial cells induced anti-tumor effect by inhibiting angiogenesis via downregulation of S100A4

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(120/120 letters)

血管内皮細胞における MTA1 発現の抑制は S100A4 発現抑制を介した血管新生阻害による抗腫瘍効果を引き起こす

(53/60 文字)

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Metastasis-associated proteins, such as S100A4 and MTA1, have been studied for over two decades, however correlation between them is still unknown. A recent report suggesting that silencing of S100A4 in endothelial cells markedly suppresses *in vitro* capillary 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 capillary formation *in vitro* and new blood vessel formation *in vivo* using Directed In Vivo Angiogenesis Assay (DIVAA). Moreover, we found that 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 heavy chain IIA (NMIIA). Interestingly, this signal pathway including MTA1 and S100A4 might be independent of VEGF-VEGFR pathway in endothelial cells. These results suggested that silencing of MTA1 in endothelial cells could be used as a new strategy to induce tumor regression via inhibiting tumor angiogenesis.

(1194/1200 letters)