# Evaluation of RAGE dependent S100A4 signaling for intervention strategies against metastasis formation in colorectal cancer

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Colon carcinoma, due to its high potential of metastasis formation, is still a major cause of death even after the excision of the primary tumor. A search for metastasis related marker proteins showed the involvement of the small calcium binding protein S100A4 in metastatic progression and the expression level of S100A4 in tumor cells is positively correlated to the metastatic potential of human colon cancer and predictive for metachronous metastasis formation [1]. It promotes cell motility and invasion, as well as angiogenesis, and has been shown to interact both with cytosolic proteins and extracellular factors. The cell surface receptor RAGE is controversially discussed as a mediator of extracellular S100A4 signaling; but, although the physical interaction of both proteins has been demonstrated, S100A4 signaling can also occur independently of RAGE. In this study we analyze the effects of extracellular S100A4 in colorectal cancer cell lines on cancer specific signaling pathways, cell motility and invasion with respect to forced expression or RNAi mediated knock down of RAGE and examine therapeutic strategies to prevent S100A4 induced metastasis formation in colon carcinoma.

[1] U. Stein, F. Arlt, W. Walther, J. Smith, T. Waldman, E.D. Harris, S.D. Mertins, C.W. Heizmann, D. Allard, W. Birchmeier, P.M. Schlag, R.H. Shoemaker, "The metastasis-associated gene S100A4 is a novel target of β-catenin/T-cell factor signaling in colon cancer," *Gastroenterology*, vol. 131, Nov. 2006, pp. 1486-1500