MACC1 and its clinical significance as a biomarker and therapeutic target in colon cancer

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Colorectal cancer (CRC) is one of the most common malignancies worldwide. Among the leading causes of cancer-related death, CRC is the third in men and second in women in developed countries and third in both men and women in developing countries. The five year survival is over 90% in patients with early stages of cancer, 65% in patients with regional lymph node metastasis but only 10% for patients with distant metastasis. Approximate one third of CRC patients had distant metastasis at the time when cancer was diagnosed. To improve the CRC patient outcome, in past decades, extensive researches have suggested promising/potential biomarkers for early diagnosing CRC and predicting its metastasis/prognosis. The metastasis-associated in colon cancer-1 (MACC1) gene was identified by a genome-wide search for genes differentially expressed by analyzing normal tissues, primary tumors and metastatic lesions in CRC. Further studies suggest that MACC1 functions as a transcriptional activator for proto-oncogene MET expression. MACC1 overexpression is associated with crucial steps of transition from adenoma to carcinoma and progression from low stage to high stage CRC. Overexpression of MACC1 in CRC is associated with distant metastasis and poor prognosis. In animal studies, down-regulating MACC1-expression inhibits CRC growth and metastasis formation. Here, we discuss MACC1, a recently revealed potential biomarker for CRC diagnosis, prognoses and a potential therapeutic target for anti-tumor and anti-metastasis intervention strategies.

Biography
Wenqing Cao has received her MD from Tongji Medical University. She subsequently completed a Residency in Anatomic and Clinical Pathology at Northwestern Memorial Hospital, Northwestern University Feinberg School of Medicine and a Gastrointestinal Pathology Fellowship at the Mount Sinai Medical Center. She is currently an Associate Professor at the New York University School of Medicine/NYU Langone Medical Center. Since 1998, she has done extensive basic and clinical translational research in GI malignancies. She has published more than 28 papers in reputed journals and has been serving as Editorial Board Member.

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