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## A tumor specific cell surface localized protein for early detection of metastasis and tumor resistance across different types of tumors

**Shulin Li**

MD Anderson Cancer Center, USA

Circulating tumor cells (CTCs) released from primary tumor tissues into bloodstream or lymphatic vessels are emerging as novel tools in the detection and prognosis of several types of metastatic cancers. At present, CTC markers are limited to epithelial cancers and there are no specific markers available to detect mesenchymal and epithelial-mesenchymal transformed (EMT) CTCs. To address this gap in technology, we discovered the utility of cell-surface vimentin (CSV) as a marker for detecting CTCs from any given tumor type. CSV localization is limited to cancer cells and is not observed in normal cells found in the blood, thus making it an excellent target for detecting cancer cells in the blood. We have developed a monoclonal antibody 84-1 against CSV that is highly specific and sensitive towards CTCs and can detect as low as 1 CTC from 1 billion blood cells. Using this antibody and CSV as a target, we have detected and enumerated CTCs from patients with different cancer types including cancers of colon, lung, liver, breast, bone, neuroblastoma and a wide variety of sarcomas. Detection and molecular characterization of CTCs is one of the fastest growing areas of translational cancer research. Utilizing CSV as a target, we can enumerate and isolate rare CTCs that will aid in the early detection of tumors, metastasis, and relapse and will contribute to the development of specific targeted therapies, an ultimate goal of personalized medicine.

### Biography

Shulin Li received his PhD at Washington State University and did his Postdoctoral studies at MD Anderson Cancer Center. He is a Professor of immune therapy and metastasis diagnosis at MD Anderson Cancer Center. He has published more than 60 peer reviewed papers and co-edited 3 books.

[SLi4@mdanderson.org](mailto:SLi4@mdanderson.org)