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GRP52 is a new sensitive markers for detecting metastatic prostatic carcinoma

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Metastatic prostate cancer is frequently presented as cancer of unknown origin. To confirm the prostatic origin, prostate-specific antigen (PSA), prostein, HoxB13, and NKX3.1 are frequently used. However, these markers are regulated by androgen receptor (AR) and their expression could be suppressed by hormonal therapy or altered by chemoradiation. Based on data mining of publicly available protein expression database and AR response gene database, we identified a new marker, GRP52, and compared it to the above markers in a series of metastatic prostate cancer. We collected 46 metastatic prostate tumors, including 16 bone metastases (10 treated by hormonal ablation or chemoradiation and 6 untreated) and 30 non-bone metastases (27 treated vs 3 untreated). Immunostains of all the markers were performed and positive expression is defined as more than 5% of tumor cells with unequivocal staining in the appropriate pattern. In 27 cases of treated non-bone metastasis, the positivity rates for GPR52, NKX3.1, HoxB13, and Prostein are 100%, 87.5%, 83%, and 67%, respectively. Out of 3 cases of untreated non-bone metastasis, GRP52 missed 1 and prostein missed 2, while NKX3.1 and HoxB13 detected all of them. For 9 cases that are negative for prostein, GPR52, NKX3.1, and HoxB13 could be detected in 4, 8,7, and 6 cases respectively. All 5 markers were detected in all 16 bone metastases, except that HoxB13 could not be detected in 2 of 10 cases of treated bone metastasis. Combination of multiple markers can increase the detection sensitivity for treated metastatic prostate cancer. Decalcification has less impact on the detection of major prostatic cancer marker.

Biography

Shaolei Lu has completed his PhD at the University of Massachusetts Amherst and his MD from Shanghai Medical College of Fudan University. He is currently a surgical pathologist at Brown University. He has published more than 35 peer-reviewed papers in reputed journals.

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