PSMA in Prostate Cancer:

A PRECISION MEDICINE APPROACH

Prostate-specific membrane antigen (PSMA) is expressed in prostate epithelial cells, and expression is further upregulated in prostate cancer[1,2]

PSMA is highly expressed in the tumor tissue of **>80%** of men with prostate cancer*[1,3–6] and detected in 87% of those with mCRPC[6]

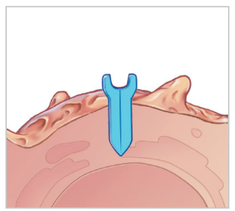
PSMA is also expressed in certain nonprostate tissues, such as the kidneys, small intestine, and salivary glands, at levels **lower** than prostate[9–11]

High expression has been demonstrated to be associated with advanced tumor stage[4,7,8]

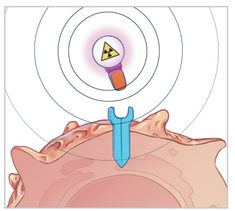
Expression has been demonstrated to remain high in metastases even after hormone therapy[12]

PSMA expression represents an independent indicator of prognosis in early disease and a predictor of disease recurrence[4,8]

PSMA offers an opportunity to target prostate cancer cells[13,14]



PSMA is a transmembrane protein that is anchored in the cell membrane of prostate cancer epithelial cells[1,15,16]



PSMA is expressed on the membrane of prostate cells, making it an accessible target for ligand binding[15,16]

The labeling of PSMA ligands has led to the successful development of PSMA-targeted imaging[17]

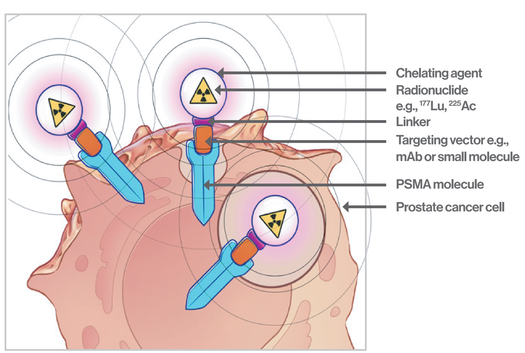
PSMA PET imaging enables the detection of local, distant, and micrometastases[13,18] and may be increasingly important in guiding disease management[19,20]

PSMA is also being evaluated as a target for radioligand therapy[6,29–33]

^{68}Ga-PSMA-11 PET/CT[18, 21–25]

	Predictive ability on a per-patient basis [27]	
Staging[18, 21–25]	Sensitivity **77%**	Specificity **97%**

	Predictive ability on a per-patient basis [28]	
Detecting biochemical recurrence[18,26]	Sensitivity **86%**	Specificity **86%**



Ac, actinium; **CT**, computed tomography; **Ga**, gallium; **Lu**, lutetium; **mAb**, monoclonal antibody; **mCRPC**, metastatic castration-resistant prostate cancer; **PET**, positron emission tomography; **PSMA**, prostate-specific membrane antigen.

*Compared with benign prostate tissue.

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