

Supplementary Table 1

ICR/RMH matched CSPC and CRPC cohort		
Baseline characteristics		
CSPC biopsy	RevMAb (n = 26)	Abcam (n = 23)
Histology (n, %) Adenocarcinoma	26, 100%	23, 100%
Grade group (n, %)		
1	1, 3%	1, 4%
2	1, 3%	1, 4%
3	5, 19%	4, 17%
4	3, 12%	3, 13%
5	14, 54%	12, 52%
NR	2, 8%	2, 9%
Metastatic at diagnosis (n, %)		
M0	13, 50%	10, 43%
M1	8, 31%	8, 35%
NR	5, 19%	5, 22%
Treatment intent (n, %)		
Radical	12, 46%	11, 48%
Palliative	14, 54%	12, 52%
Median diagnostic PSA (µg/l, IQR)	29.0, 13.3-137.0*	28.0, 13.9-138.3*
Matched CRPC biopsy	RevMAb (n = 32)	Abcam (n = 32)
Biopsy site (n, %)		
Bone	19, 59%	19, 59%
Lymph node	6, 19%	6, 19%
Other	7, 22%	7, 22%
NHT prior to biopsy (n, %)		
No	25, 78%	25, 78%
Yes	7, 22%	7, 22%

Supplementary Table 1. Clinical characteristics of the Institute of Cancer Research/Royal Marsden matched cohort of prostate cancer patients with paired castration-sensitive and castration-resistant tissue biopsies. CSPC – castration-sensitive prostate cancer, CRPC – castration-resistant prostate cancer, n – number, NR – not recorded, AR – androgen receptor, PSA – prostate-specific antigen, IQR – interquartile range, * – three patients without diagnostic PSA data available and one patient diagnostic PSA value > 2000 analyzed as 2000, NHT – Novel Hormonal Therapy (abiraterone and/or enzalutamide)

Supplementary Table 2

ICR/RMH primary advanced cohort	
Baseline characteristics	
Histology (n, %)	
Adenocarcinoma	22, 100%
Grade group (n, %)	
1	0, 0%
2	2, 9%
3	0, 0%
4	5, 23%
5	15, 68%
Metastatic at diagnosis (n, %)	
M0	2, 9%
M1	18, 82%
NR	2, 9%
Treatment intent (n, %)	
Radical	0, 0%
Palliative	22, 100%
Median diagnostic PSA ($\mu\text{g/l}$, IQR)	160.5, 41.6-754.0 [^]

Supplementary Table 2. Clinical characteristics of the Institute of Cancer Research/Royal Marsden Hospital primary advanced cohort of prostate cancer patients with castration-sensitive tissue biopsies. n – number, NR – not recorded, PSA – prostate-specific antigen, IQR – interquartile range, * – one patient diagnostic PSA value > 2000 analyzed as 2000

Supplementary Table 3

UW primary localized cohort	
Baseline characteristics	
Histology (n, %) Adenocarcinoma	26, 100%
Grade group (n, %) 1 2 3 4 5	9, 35% 7, 27% 6, 23% 0, 0% 4, 15%
Tumor stage (n, %) T1 T2 T3A T3B T4	0, 0% 15, 58% 7, 27% 4, 15% 0, 0%
Lymph node stage (n, %) N0 N1 Nx	20, 77% 2, 8% 4, 15%

Supplementary Table 3. Clinical characteristics of the University of Washington primary localized cohort of prostate cancer patients who underwent radical prostatectomies. n – number

Supplementary Table 4

NCI primary localized cohort	
Baseline characteristics	
Histology (n, %) Adenocarcinoma	84, 100%
Grade group (n, %) 1 2 3 4 5	8, 10% 54, 64% 18, 21% 1, 1% 3, 4%
Tumor stage (n, %) T1 T2 T3A T3B T4	0, 0% 43, 51% 31, 37% 10, 12% 0, 0%
Lymph node stage (n, %) N0 N1 Nx	71, 85% 3, 4% 10, 12%
Median diagnostic PSA (ng/ml, IQR)	6.0, 5.4-8.0

Supplementary Table 4. Clinical characteristics of the National Cancer Institute primary localized cohort of prostate cancer patients who underwent radical prostatectomy. n – number, PSA – prostate-specific antigen, IQR – interquartile range

Supplementary Table 5

NCI neoadjuvant cohort	
Baseline characteristics	
Histology (n, %) Adenocarcinoma	37, 100%*
Grade group (n, %) 1 2 3 4 5	0, 0% 4, 11% 5, 14% 11, 30% 17, 46%
Tumor stage (n, %) T1 T2 T3A T3B T4	4, 11% 6, 16% 15, 41% 7, 19% 5, 14%
Lymph node stage (n, %) N0 N1 Nx	26, 70% 11, 30% 0, 0%
Median diagnostic PSA (ng/ml, IQR)	9.3, 5.5-17.7

Supplementary Table 5. Clinical characteristics of the National Cancer Institute neoadjuvant cohort of prostate cancer patients who received neoadjuvant androgen-deprivation therapy and enzalutamide prior to radical prostatectomy. n – number, PSA – prostate-specific antigen, IQR – interquartile range, * - five patients had predominant adenocarcinoma with focal neuroendocrine features