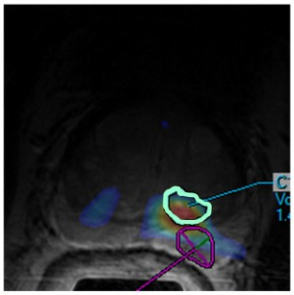
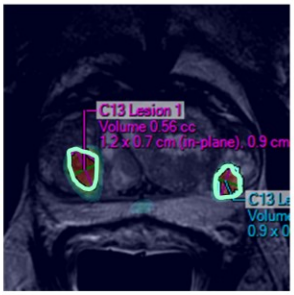
Improving Multiparametric MR - TRUS Guided Fusion Prostate Biopsies with Hyperpolarized ^{13}C Pyruvate Metabolic Imaging : A Technical Development Study

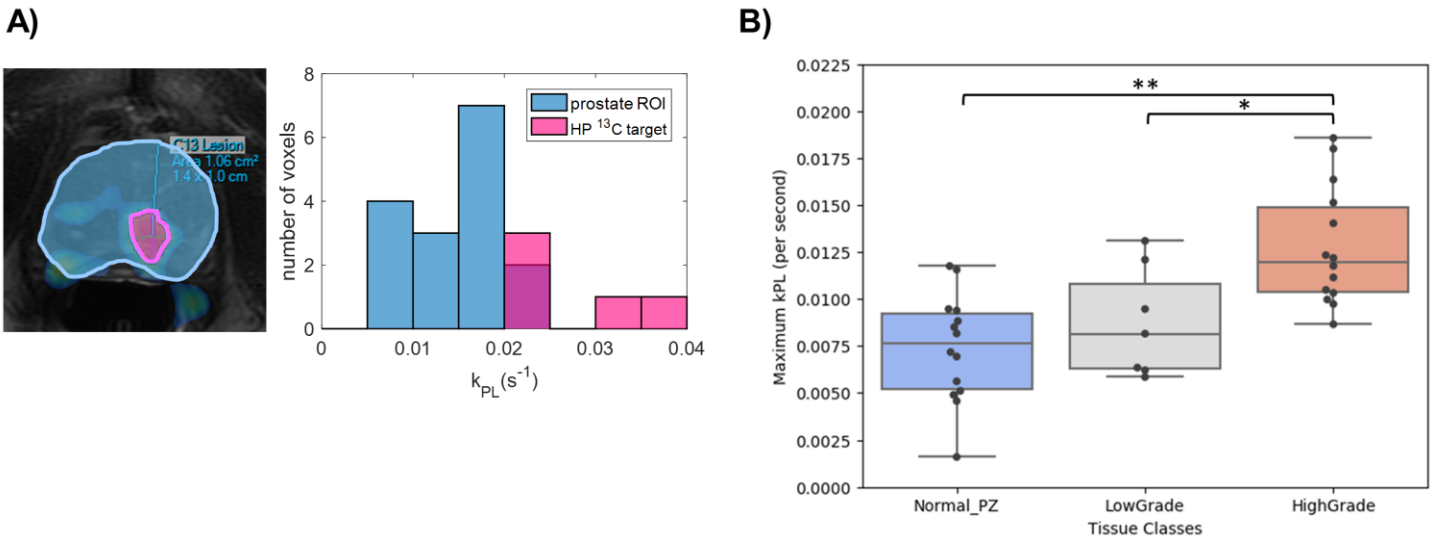
Supporting Information





Patient #	Patient 4	Patient 5
PSA	1.3	17
UCSF CAPRA Score	2	1
Risk Group	Low	Low
# of ^{13}C Targets	1	2
k_{PL} at ^{13}C Target(s^{-1})	0.0410 (σ = 0.0012)	0.0279/0.0312 (σ = 0.0019)
# of (+) cores/total cores in targeted + systematic biopsy	8/23	3/19
Overall Grade	3+3	3+3
# of (+) ^{13}C cores/ total ^{13}C cores	2/2	2/3 (left), See below(right)
^{13}C Core Grade	3+3	3+3 (left), ASAP/HGPIN(right)

Supporting Information Table S1. Summary of the clinical characteristics and biopsy findings from Patient 4 and 5.



Supporting Information Figure S1. A) An example case showing the comparison of k_{PL} in the ^{13}C targeted lesion versus segmented prostate outside of the lesion. Pathological diagnosis of the biopsy tissue was Gleason 3+3 tumor with 16% involvement. **B)** k_{PL} dichotomy between pathologist-defined low-grade prostate cancer (PCa) (Gleason ≤ 3+4), and high-grade prostate cancer (Gleason score ≥ 4+3). *p = 0.034; **p = 0.0003. The recommended k_{PL} threshold = 0.02(s^{-1}) used in our study was corrected for the different MR sequence echo times between the EPSI acquisition in the cited reference versus the EPI in our study [24]. Figure reproduced with permission [17].