

**Supporting Table 1.** Estimated percentage of tumor with respective Fuhrman grade and overall clinical Fuhrman grade for the clear cell renal cell carcinoma cases. The percentages are estimates from tissues sampled for clinical pathology interpretation. Grade 1 and 2 were grouped together as it is not possible to be accurate and is not clinically meaningful to provide separate estimate for the percentages of tumor corresponding to either grade 1 or 2.

<b>Patient</b>	<b>Histology</b>	<b>Clinical Fuhrman Grade</b>	<b>% grade 1/2</b>	<b>% grade 3</b>	<b>% grade 4</b>
2	clear cell	grade 2	100		
4	clear cell	grade 2	100		
5	clear cell	grade 3	50	50	
6	clear cell	grade 4	40	50	10
7	clear cell	grade 2	100		
8	clear cell	grade 3	30	70	

**Supporting Table. 2.** Tumor alanine-to-pyruvate ratio in 8 patients, stratified by tumor histology and grade. The alanine/ pyruvate values shown are the ratios between the normalized alanine AUC values and the normalized pyruvate AUC values, which individual metabolite normalization was performed relative to normal kidney tissue. N/A: not acquired.

Tumor Type	Patient	Alanine/Pyruvate Normalized Ratio
Chromophobe	1	N/A
Chromophobe	3	1.72
CC Grade 2	2	0.81
CC Grade 2	4	0.98
CC Grade 2	7	0.48
CC Grade 3	8	0.72
CC Grade 3	5	N/A
CC Grade 4	6	1.41