

**Additional Table 4 Relationships between cytoplasmic and nuclear protein**

Protein	Combined cell types		PDAC		Ductal epithelia adjacent to PDAC		Duct cell in non-PDAC specimen	
	$\rho$	p-value	$\rho$	p-value	$\rho$	p-value	$\rho$	p-value
<sup>S727</sup> p-STAT3	0.02	0.91	-0.22	0.29	0.10	0.73	0.35	0.087
$\beta$ CAT	0.21	0.13	0.09	0.67	-	-	-	-
<sup>Y705</sup> STAT3	0.37	0.008	0.22	0.28	0.19	0.53	0.43	0.031
p- $\beta$ CAT	0.07	0.62	0.25	0.21	-0.05	0.86	0.05	0.81
p-GSK3 $\beta$	0.19	0.18	0.28	0.17	0.02	0.94	0.08	0.72
<sup>S473</sup> p-PKB	0.43	0.002	0.32	0.11	0.49	0.088	0.37	0.071
PKB $\beta$	0.39	0.005	0.36	0.072	0.40	0.20	0.35	0.094
p-JNK	0.37	0.009	0.43	0.029	0.03	0.92	-0.05	0.83
p-NF $\kappa$ B	0.41	0.004	0.44	0.029	0.41	0.18	0.41	0.044
<sup>T308</sup> p-PKB	0.51	<0.001	<b>0.52</b>	<b>0.007</b>	-0.24	0.48	0.24	0.27
<b>p-p38</b>	0.63	<0.001	<b>0.56</b>	<b>0.004</b>	<b>0.61</b>	<b>0.036</b>	0.44	0.030
<b>SMAD4</b>	0.27	0.06	<b>0.63</b>	<b>&lt;0.001</b>	0.00	1.00	0.22	0.31
<b>p-ERK</b>	0.72	<0.001	<b>0.72</b>	<b>&lt;0.001</b>	0.29	0.34	0.42	0.035
<b>PTEN</b>	0.56	<0.001	<b>0.87</b>	<b>&lt;0.001</b>	0.23	0.46	0.17	0.43

Significant moderate to strong relationships are highlighted ( $\rho \geq 0.5$ ,  $p \leq 0.05$ ). Identical protein values between the sub-cellular compartments were omitted from the Spearman's test (—).