

Supplementary Table S4. Agreement between pathologist and AI-driven NCP on mIF-driven NCP according to histological variation

	ICC (95% CI)		
	Urothelial carcinoma without divergent differentiation/subtype (n=56)	Urothelial carcinoma with divergent differentiation/subtype (n=57)	Non-urothelial carcinoma (n=5)
Pathologist			
Uropathologist	0.91 (0.87 to 0.93)	0.94 (0.91 to 0.95)	0.75 (0.39 to 0.91)
Fellow 1	0.83 (0.59 to 0.91)	0.78 (0.48 to 0.89)	0.67 (0.13 to 0.89)
Fellow 2	0.83 (0.77 to 0.87)	0.84 (0.79 to 0.88)	0.61 (0.17 to 0.85)
Resident 1	0.82 (0.65 to 0.89)	0.76 (0.69 to 0.82)	0.77 (0.20 to 0.93)
Resident 2	0.84 (0.79 to 0.88)	0.84 (0.79 to 0.88)	0.63 (0.20 to 0.86)
Resident 3	0.83 (0.70 to 0.89)	0.80 (0.72 to 0.85)	0.64 (0.17 to 0.87)
AI model			
EfficientNet	0.89 (0.81 to 0.93)	0.89 (0.67 to 0.95)	0.62 (0.18 to 0.86)
EfficientNetV2	0.88 (0.83 to 0.91)	0.90 (0.85 to 0.93)	0.60 (0.12 to 0.85)
MobileNetV2	0.88 (0.84 to 0.91)	0.90 (0.87 to 0.93)	0.44 (-0.12 to 0.78)
MobileNetV3	0.81 (0.65 to 0.89)	0.87 (0.80 to 0.91)	0.33 (-0.18 to 0.71)
ResNet	0.87 (0.80 to 0.92)	0.87 (0.65 to 0.93)	0.48 (-0.0 to 0.79)
WideResNet	0.85 (0.78 to 0.90)	0.90 (0.86 to 0.92)	0.55 (0.05 to 0.8)
ShuffleNetV2	0.83 (0.68 to 0.90)	0.89 (0.84 to 0.92)	0.54 (0.03 to 0.82]

AI, artificial intelligence; NCP, neoplastic cell percentage; mIF, multiplex immunofluorescence; ICC, intraclass correlation coefficient; CI, confidence interval.