

Supplemental Table 4. Pathwork TOO Results for All Samples

#	Specimen ID	% Necrosis	% Tumor	Clinical Truth*	Sample Site	Site	Data Verification	Top TOO Score	Top TOO ID	Pathwork TOO Result	Agreement with Clinical Truth	Morphologies
1	06_0283	0	50	Bladder	Lymph node	1	Pass	35.7	Breast	Breast	NonAgree	Metastatic carcinoma with features of a high-M31grade urothelial carcinoma
2						Pass	46.4	Breast	Breast	NonAgree		
3						Pass	29.0	Breast	IND	IND		
4						Pass	29.7	Breast	IND	IND		
5	06_0292	0	90	Bladder	Lung	1	Pass	56.9	Bladder	Bladder	Agree	Metastatic high-grade urothelial carcinoma involving the visceral pleura with angiolymphatic invasion
6						Pass	71.2	Bladder	Bladder	Agree		
7						Pass	43.2	Bladder	Bladder	Agree		
8						Pass	45.0	Bladder	Bladder	Agree		
9	06_0300	0	70	Bladder	Lymph node	1	Pass	33.6	Bladder	Bladder	Agree	Metastatic urothelial carcinoma with extranodal extension and blood vessel deposits
10						Pass	27.6	Lung	IND	IND		
11						Pass	26.8	Lung	IND	IND		
12						Pass	16.2	Lung	IND	IND		
13	06_0259	0	100	Breast	Ovary	1	Pass	71.8	Breast	Breast	Agree	Metastatic adenocarcinoma consistent with breast primary
14						Pass	89.5	Breast	Breast	Agree		
15						Pass	71.1	Breast	Breast	Agree		
16						Pass	50.7	Ovary	Breast	Agree		
17	06_0269	5	95	Breast	Liver	1	Pass	90.3	Breast	Breast	Agree	Metastatic carcinoma consistent with metastasis from the breast
18						Pass	95.6	Breast	Breast	Agree		
19						Pass	90.2	Breast	Breast	Agree		
20						Pass	88.0	Breast	Breast	Agree		
21	06_0277	30	70	Breast	Lung	1	Pass	56.2	Lung	Lung	NonAgree	Metastatic moderately differentiated adenocarcinoma
22						Pass	70.2	Breast	Breast	Agree		
23						Pass	47.6	Lung	Breast	Agree		
24						Pass	54.7	Breast	Breast	Agree		
25	06_0321	5	90	Breast	Breast	1	Fail					Undifferentiated adenocarcinoma with focal mucin production
26						Pass	25.3	Lung	IND	IND		
27						Pass	22.5	Lung	IND	IND		
28						Fail						
29	06_0339	20	80	Breast	Liver	1	Pass	93.6	Breast	Breast	Agree	Moderately diff. adenocarcinoma consistent with metastatic ductal adenocarcinoma of breast
30						Pass	92.6	Breast	Breast	Agree		
31						Pass	94.0	Breast	Breast	Agree		
32						Pass	77.8	Breast	Breast	Agree		
33	06_0344	5	90	Breast	Lymph node	1	Pass	88.3	Breast	Breast	Agree	Metastatic carcinoma
34						Pass	92.3	Breast	Breast	Agree		
35						Pass	95.4	Breast	Breast	Agree		
36						Pass	93.2	Breast	Breast	Agree		
37	06_0260	10	90	Colorectal	Colon	1	Pass	59.7	Colon	Colon	Agree	Moderate to poorly differentiated adenocarcinoma extending into the subserosal fat
38						Pass	86.7	Colon	Colon	Agree		
39						Pass	67.5	Colon	Colon	Agree		
40						Pass	84.3	Colon	Colon	Agree		
41	06_0262	5	95	Colorectal	Colon	1	Pass	78.3	Colon	Colon	Agree	Invasive moderately to poorly differentiated adenocarcinoma of colon mucinous differentiation
42						Pass	95.1	Colon	Colon	Agree		
43						Pass	81.1	Colon	Colon	Agree		
44						Pass	91.1	Colon	Colon	Agree		
45	06_0266	30	20	Colorectal	Lymph node	1	Pass	90.4	Colon	Colon	Agree	Metastatic adenocarcinoma involving 11/24 pericolic lymph nodes
46						Pass	86.8	Colon	Colon	Agree		
47						Pass	83.3	Colon	Colon	Agree		
48						Pass	96.6	Colon	Colon	Agree		
49	06_0278	10	85	Colorectal	Stomach	1	Pass	92.3	Colon	Colon	Agree	Moderately differentiated adenocarcinoma with infiltrating gastric mucosa, muscularis propria, serosa
50						Pass	94.3	Colon	Colon	Agree		
51						Pass	93.6	Colon	Colon	Agree		
52						Pass	86.5	Colon	Colon	Agree		
53						1	Pass	73.3	Colon	Colon	Agree	

54	06_0320	0	100	Colorectal	Omentum	2	Pass	53.9	Colon	Colon	Agree	Invasive, moderately differentiated adenocarcinoma	
55						3	Pass	65.5	Colon	Colon	Agree		
56						4	Pass	82.8	Colon	Colon	Agree		
57	06_0360	5	85	Colorectal	Lung	1	Pass	83.2	Colon	Colon	Agree	Metastatic M127+M27 colorectal +M91 adenocarcinoma	
58						2	Pass	60.2	Colon	Colon	Agree		
59						3	Pass	89.4	Colon	Colon	Agree		
60						4	Pass	75.6	Colon	Colon	Agree		
61	08_1000	N/A	40	Gastric	N/A	1	Pass	44.0	Gastric	Gastric	Agree	Adenocarcinoma moderately differentiated	
62						2			Insufficient RNA				
63						3	Pass	47.3	Gastric	Gastric	Agree		
64						4			Insufficient Sample				
65	08_1020	N/A	65	Gastric	N/A	1	Pass	55.3	Gastric	Gastric	Agree	Signet ring carcinoma	
66						2			Insufficient RNA				
67						3	Pass	50.5	Gastric	Gastric	Agree		
68						4			Insufficient Sample				
69	08_1050	N/A	35	Gastric	N/A	1	Pass	41.4	Gastric	Gastric	Agree	Adenocarcinoma of gastric	
70						2			Insufficient RNA				
71						3	Pass	45.4	Gastric	Gastric	Agree		
72						4			Insufficient Sample				
73	06_0289	5	35	Germ Cell	Lymph node	1	Pass	26.1	Germ Cell	IND	IND	Metastatic embryonal carcinoma in 5/7 lymph nodes	
74						2	Pass	38.1	Germ Cell	Germ Cell	Agree		
75						3	Pass	59.7	Germ Cell	Germ Cell	Agree		
76						4	Pass	33.2	Lymphoma	Lymphoma	NonAgree		
77	06_0296	20	80	Germ Cell	Lymph node	1	Pass	53.2	Germ Cell	Germ Cell	Agree	Metastatic mixed germ cell tumor consisting of embryonal carcinoma and immature teratoma	
78						2	Pass	58.5	Germ Cell	Germ Cell	Agree		
79						3	Pass	83.8	Germ Cell	Germ Cell	Agree		
80						4	Pass	44.7	Germ Cell	Germ Cell	Agree		
81	06_0301	30	40	Germ Cell	Lymph node	1	Pass	36.8	Lymphoma	Lymphoma	NonAgree	Metastatic germ cell tumor consisting predominantly of embryonal carcinoma and possible yolk sac component	
82						2	Pass	67.4	Germ Cell	Germ Cell	Agree		
83						3	Pass	78.5	Germ Cell	Germ Cell	Agree		
84						4	Pass	55.7	Lymphoma	Lymphoma	NonAgree		
85	06_0329	20	80	Kidney	Liver	1	Pass	26.1	Ovary	IND	IND	Poorly differentiated carcinoma with clear cell and oncocytic differentiation and massive necrosis	
86						2	Pass	23.9	Sarcoma	IND	IND		
87						3	Pass	35.5	Sarcoma	Sarcoma	NonAgree		
88						4	Pass	27.1	Ovary	Indet	IND		
89	06_0333	0	90	Kidney	Adrenal gland	1	Pass	91.5	Kidney	Kidney	Agree	Metastatic renal cell carcinoma	
90						2	Pass	87.1	Kidney	Kidney	Agree		
91						3	Pass	91.4	Kidney	Kidney	Agree		
92						4	Pass	87.3	Kidney	Kidney	Agree		
93	06_0377	30	70	Kidney	Kidney	1	Pass	27.2	Melanoma	IND	IND	Sarcomatoid renal cell carcinoma	
94						2	Pass	24.3	Kidney	IND	IND		
95						3	Pass	26.7	Sarcoma	IND	IND		
96						4	Pass	17.3	Melanoma	IND	IND		
97	06_0327	0	100	Liver	Subcutaneous t+F211issue	1	Pass	90.2	Liver	Liver	Agree	Moderately differentiated metastatic hepatocellular carcinoma	
98						2	Pass	91.6	Liver	Liver	Agree		
99						3	Pass	90.3	Liver	Liver	Agree		
100						4	Pass	91.2	Liver	Liver	Agree		
101	06_0351	5	95	Liver	Lymph node	1	Pass	93.2	Liver	Liver	Agree	Metastatic hepatocellular carcinoma with cellular anaplasia	
102						2	Pass	85.5	Liver	Liver	Agree		
103						3	Pass	89.0	Liver	Liver	Agree		
104						4	Pass	85.2	Liver	Liver	Agree		
105	06_0387	5	90	Liver	Colon / Rectum	1	Pass	96.4	Liver	Liver	Agree	Metastatic hepatocellular carcinoma w/ angiolymphatic invasion	
106						2	Pass	93.6	Liver	Liver	Agree		
107						3	Pass	96.1	Liver	Liver	Agree		
108						4	Pass	92.4	Liver	Liver	Agree		
109	06_0258	10	90	Lung	Lung	1	Pass	54.7	Lung	Lung	Agree	Invasive poorly differentiated adenosquamous cell	
110						2	Pass	86.3	Lung	Lung	Agree		

111	06_0250	10	90	Lung	Lung	3	Pass	83.4	Lung	Lung	Agree	carcinoma
112						4	Pass	70.8	Lung	Lung	Agree	
113	06_0261	10	80	Lung	Lymph node	1	Pass	34.9	Lung	Lung	Agree	Poorly differentiated non-small-cell carcinoma
114						2	Pass	38.2	Lung	Lung	Agree	
115						3	Pass	46.6	Lung	Lung	Agree	
116						4	Pass	29.4	Lung	Indet	IND	
117	06_0270	5	95	Lung	Adrenal gland	1	Pass	79.9	Lung	Lung	Agree	Metastatic moderately differentiated adenocarcinoma
118						2	Pass	78.5	Lung	Lung	Agree	
119						3	Pass	84.1	Lung	Lung	Agree	
120						4	Pass	84.3	Lung	Lung	Agree	
121	06_0273	0	95	Lung	Adrenal gland	1	Pass	88.0	Lung	Lung	Agree	Poorly differentiated lung adenocarcinoma
122						2	Pass	94.8	Lung	Lung	Agree	
123						3	Pass	94.8	Lung	Lung	Agree	
124						4	Pass	84.5	Lung	Lung	Agree	
125	06_0274	5	95	Lung	Adrenal gland	1	Pass	60.9	Lung	Lung	Agree	Metastatic poorly differentiated carcinoma
126						2	Pass	93.6	Lung	Lung	Agree	
127						3	Pass	95.3	Lung	Lung	Agree	
128						4	Pass	82.0	Lung	Lung	Agree	
129	06_0356	10	70	Lung	Lung	1	Pass	46.9	Lung	Lung	Agree	Invasive pleomorphic carcinoma w/adenocarcinoma and spindle cell carcinoma
130						2	Pass	91.6	Lung	Lung	Agree	
131						3	Pass	70.5	Lung	Lung	Agree	
132						4	Pass	55.0	Lung	Lung	Agree	
133	06_0268	0	100	Lymphoma	Lymph node	1	Fail					Malignant lymphoma with plasmacytic differentiation and numerous large transformed cells
134						2	Pass	92.9	Lymphoma	Lymphoma	Agree	
135						3	Pass	83.5	Lymphoma	Lymphoma	Agree	
136						4	Fail					
137	06_0271	10	90	Lymphoma	Lymph node	1	Pass	55.5	Lymphoma	Lymphoma	Agree	Malignant neoplasm, strongly favors malignant lymphoma with anaplastic features
138						2	Pass	64.7	Lymphoma	Lymphoma	Agree	
139						3	Pass	64.3	Lymphoma	Lymphoma	Agree	
140						4	Pass	74.8	Lymphoma	Lymphoma	Agree	
141	06_0272	5	95	Lymphoma	Thigh mass	1	Pass	89.7	Lymphoma	Lymphoma	Agree	Malignant lymphoma, diffuse large B-cell type
142						2	Pass	93.3	Lymphoma	Lymphoma	Agree	
143						3	Pass	86.2	Lymphoma	Lymphoma	Agree	
144						4	Pass	91.8	Lymphoma	Lymphoma	Agree	
145	06_0276	0	100	Lymphoma	Thyroid	1	Pass	88.2	Lymphoma	Lymphoma	Agree	Malignant lymphoma of B-cell type with+M195 low and intermediate grade components
146						2	Pass	91.3	Lymphoma	Lymphoma	Agree	
147						3	Pass	84.9	Lymphoma	Lymphoma	Agree	
148						4	Pass	89.0	Lymphoma	Lymphoma	Agree	
149	06_0349	0	100	Lymphoma	Spleen / Soft tissue	1	Pass	86.5	Lymphoma	Lymphoma	Agree	Diffuse large B-cell lymphoma
150						2	Pass	74.9	Lymphoma	Lymphoma	Agree	
151						3	Pass	89.7	Lymphoma	Lymphoma	Agree	
152						4	Pass	92.7	Lymphoma	Lymphoma	Agree	
153	06_0459	1	99	Lymphoma	Extradural mass (c+F87ranium)	1	Pass	71.9	Lymphoma	Lymphoma	Agree	Anaplastic large cell lymphoma (CD30), Alk-1 negative
154						2	Pass	81.5	Lymphoma	Lymphoma	Agree	
155						3	Pass	68.5	Lymphoma	Lymphoma	Agree	
156						4	Pass	74.7	Lymphoma	Lymphoma	Agree	
157	06_0288	20	70	Melanoma	Stomach	1	Pass	80.4	Melanoma	Melanoma	Agree	Metastatic melanoma involving full thickness of the gastric wall
158						2	Pass	21.2	Melanoma	IND	IND	
159						3	Pass	82.8	Melanoma	Melanoma	Agree	
160						4	Pass	70.9	Melanoma	Melanoma	Agree	
161	06_0290	5	94	Melanoma	Small bowel	1	Pass	77.5	Melanoma	Melanoma	Agree	Metastatic malignant melanoma
162						2	Pass	78.5	Melanoma	Melanoma	Agree	
163						3	Pass	83.4	Melanoma	Melanoma	Agree	
164						4	Pass	65.8	Melanoma	Melanoma	Agree	
165	06_0460	0	80	Melanoma	Lung	1						Metastatic melanoma
166						2						
167						3						

168					4							
169	06_0367	10	80	Ovary	Mesentery / Small bowel	1	Pass	62.8	Ovary	Ovary	Agree	Poorly differentiated papillary serous carcinoma most likely of ovarian origin
170						2	Pass	86.5	Ovary	Ovary	Agree	
171						3	Pass	33.5	Ovary	Ovary	Agree	
172						4	Pass	89.4	Ovary	Ovary	Agree	
173	06_0368	5	95	Ovary	Ovary	1	Pass	98.5	Ovary	Ovary	Agree	Papillary serous adenocarcinoma involving both ovaries
174						2	Pass	95.1	Ovary	Ovary	Agree	
175						3	Pass	91.7	Ovary	Ovary	Agree	
176						4	Pass	94.0	Ovary	Ovary	Agree	
177	06_0369	20	80	Ovary	Ovary	1	Pass	99.1	Ovary	Ovary	Agree	Papillary, high-grade, serous carcinoma of the ovary
178						2	Pass	99.0	Ovary	Ovary	Agree	
179						3	Pass	98.6	Ovary	Ovary	Agree	
180						4	Pass	96.6	Ovary	Ovary	Agree	
181	06_0264	20	80	Pancreas	Pancreas	1	Fail				Agree	Pancreatic ductal adenocarcinoma, invasive, poorly differentiated
182						2	Pass	36.0	Pancreas	Pancreas	Agree	
183						3	Fail					
184						4	Pass	43.6	Pancreas	Pancreas	Agree	
185	06_0275	0	100	Pancreas	Pancreas	1	Pass	45.3	Breast	Breast	NonAgree	Pancreatic adenosquamous carcinoma, poorly differentiated
186						2	Pass	31.3	Colon	Colon	NonAgree	
187						3	Pass	25.6	Colon	IND	IND	
188						4	Pass	29.4	Breast	IND	IND	
189	06_0338	5	85	Pancreas	Pancreas	1	Pass	88.9	Pancreas	Pancreas	Agree	Moderately to poorly differentiated pancreatic adenocarcinoma arising in head of pancreas
190						2	Pass	92.5	Pancreas	Pancreas	Agree	
191						3	Pass	81.1	Pancreas	Pancreas	Agree	
192						4	Pass	84.1	Pancreas	Pancreas	Agree	
193	06_0342	0	100	Pancreas	Liver	1	Fail				NonAgree	Moderately differentiated adenocarcinoma consistent w/ pancreatic primary
194						2	Pass	70.5	Colon	Colon	NonAgree	
195						3	Fail					
196						4	Fail					
197	06_0343	5	95	Pancreas	Pancreas	1	Pass	91.3	Pancreas	Pancreas	Agree	Moderately to poorly differentiated pancreatic adenocarcinoma of head of pancreas
198						2	Pass	85.8	Pancreas	Pancreas	Agree	
199						3	Pass	83.5	Pancreas	Pancreas	Agree	
200						4	Pass	84.2	Pancreas	Pancreas	Agree	
201	06_0347	5	85	Pancreas	Pancreas / Duodenum	1	Pass	53.5	Pancreas	Pancreas	Agree	Moderately to poorly differentiated mucinous adenocarcinoma w/signet ring cell features
202						2	Pass	51.4	Pancreas	Pancreas	Agree	
203						3	Pass	76.6	Pancreas	Pancreas	Agree	
204						4	Fail					
205	06_0323	0	100	Prostate	Lymph node	1	Pass	80.8	Prostate	Prostate	Agree	Metastatic prostatic adenocarcinoma
206						2	Pass	86.2	Prostate	Prostate	Agree	
207						3	Pass	77.9	Prostate	Prostate	Agree	
208						4	Pass	62.3	Prostate	Prostate	Agree	
209	06_0328	0	95	Prostate	Lymph node	1	Pass	96.3	Prostate	Prostate	Agree	Metastatic adenocarcinoma consistent with prostatic origin
210						2	Fail					
211						3	Fail					
212						4	Pass	76.8	Prostate	Prostate	Agree	
213	06_0352	10	80	Prostate	Lymph node	1	Pass	79.0	Prostate	Prostate	Agree	Metastatic, high-M179grade prostatic adenocarcinoma
214						2	Pass	78.0	Prostate	Prostate	Agree	
215						3	Pass	72.7	Prostate	Prostate	Agree	
216						4	Pass	67.8	Prostate	Prostate	Agree	
217	06_0324	0	100	Sarcoma	Liver	1	Pass	87.2	Sarcoma	Sarcoma	Agree	High-grade sarcoma consistent with+M183 metastatic leiomyosarcoma from small intestine primary
218						2	Pass	69.0	Sarcoma	Sarcoma	Agree	
219						3	Pass	86.9	Sarcoma	Sarcoma	Agree	
220						4	Pass	62.9	Sarcoma	Sarcoma	Agree	
221	06_0325	0	100	Sarcoma	Lung	1	Pass	65.9	Sarcoma	Sarcoma	Agree	Metastatic osteosarcoma
222						2	Pass	80.5	Sarcoma	Sarcoma	Agree	
223						3	Pass	71.3	Sarcoma	Sarcoma	Agree	
224						4	Pass	39.0	Sarcoma	Sarcoma	Agree	

225	06_0359	0	98	Sarcoma	Liver	1	Pass	83.9	Sarcoma	Sarcoma	Agree	Multiple nodules of metastatic sarcoma
226						2	Pass	80.4	Sarcoma	Sarcoma	Agree	
227						3	Pass	86.4	Sarcoma	Sarcoma	Agree	
228						4	Pass	64.8	Sarcoma	Sarcoma	Agree	
229	06_0317	0	90	Thyroid	Neck mass	1	Pass	91.3	Thyroid	Thyroid	Agree	Metastatic follicular carcinoma, follicular variant
230						2	Pass	92.1	Thyroid	Thyroid	Agree	
231						3	Pass	92.2	Thyroid	Thyroid	Agree	
232						4	Pass	93.2	Thyroid	Thyroid	Agree	
233	06_0353	0	95	Thyroid	Muscle / Soft tissue	1	Pass	59.1	Thyroid	Thyroid	Agree	Oncocytic carcinoma of the thyroid with clear cell change
234						2	Pass	79.8	Thyroid	Thyroid	Agree	
235						3	Pass	77.4	Thyroid	Thyroid	Agree	
236						4	Pass	62.8	Thyroid	Thyroid	Agree	
237	06_0358	0	60	Thyroid	Thyroid	1	Pass	92.7	Thyroid	Thyroid	Agree	Papillary carcinoma w/ a few foci of tall cell variant
238						2	Pass	94.8	Thyroid	Thyroid	Agree	
239						3	Pass	94.5	Thyroid	Thyroid	Agree	
240						4	Pass	90.0	Thyroid	Thyroid	Agree	

*As noted per original surgical pathology report.

NonAgree, no agreement.

IND, indeterminate.