

SAMPLE REPORT

PATIENT	SPECIMEN INFORMATION	ORDERING PHYSICIAN
Name: Sample Patient	Order Date: --/--/----	Name: Sample Physician, MD
Date of Birth: --/--/----	Specimen ID: -----	Clinic: Sample Clinic
Medical Record #: -----	Specimen Received Date: --/--/----	Address: 123 Birch Avenue, Suite A,
Sex: _	Accession ID: MC-123456	Anytown, CA 54321

CLINICAL AND PATHOLOGY DETAILS For reference only, not used in calculation of genomic subtype

Date of Procedure: **01/02/2021** Tumor Type: **Muscle Invasive Bladder Carcinoma**
Specimen Type: **TURBT** Tumor Stage: **cT2**

DECIPHER GENOMIC RESULTS

LUMINAL	Luminal	BLADDER CANCER SUBTYPE: MIXED INFILTRATED[†] & BASAL	
		INTERPRETATION	
NON-LUMINAL	Infiltrated [†]	Non-luminal subtypes of bladder cancer are associated with a less favorable prognosis. ^{1,2} In comparison with luminal subtype disease:	
	Basal	Risk of Upstaging	Non-luminal subtype bladder cancer is more likely to be non-organ-confined (node-positive and/or pT3 or greater) at radical cystectomy. ¹
	Basal Claudin-Low	Benefit from NAC [‡]	Patients with non-luminal subtype muscle-invasive bladder cancer are more likely to benefit from cisplatin-based neoadjuvant chemotherapy. ³
	Neuroendocrine-Like		

[Lab Director Name, MD]
Laboratory Director

Report Date

CLIA ID# 05D2055897
CAP # 8859006

Lab Director: [Lab Director Name, MD]

[†] Luminal Infiltrated [‡] Neoadjuvant chemotherapy

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SUBTYPE PROBABILITIES

Subtype	Probability
Luminal	7%
Infiltrated†	44%
Basal	44%
Basal Claudin-Low	5%
Neuroendocrine-Like	0%

Luminal. These tumors more frequently have a papillary morphology^{2,4,6} with urothelial differentiation and express markers associated with luminal cells (e.g., *FGFR3*, *GATA3*, *KRT20*). Luminal tumors may have higher *FGFR3* activity and/or *NECTIN4* gene expression.^{4,7,8}

Infiltrated†. These tumors tend to show higher levels of stromal and / or immune cell infiltration.²

Basal. These tumors are generally poorly differentiated, with higher expression of basal cell markers (i.e., *KRT5/6*, *KRT14*).^{2,4,6}

Basal Claudin-Low. These tumors are an aggressive variant of the basal subtype that shows lower expression of claudin genes.^{2,9} These tumors are enriched with immune cells, but their anti-tumor function is actively suppressed. In a retrospective analysis of a Phase 2 clinical trial (NCT02736266), basal claudin-low tumors were found to derive greater benefit from neoadjuvant pembrolizumab as compared to other subtypes.^{10,11}

Neuroendocrine-Like. These tumors have a histological appearance consistent with conventional urothelial carcinoma, but have similar gene expression profiles as small cell / neuroendocrine carcinoma (e.g., high *SYP*, *ENO2*).^{4,6,12}

† Luminal Infiltrated

FINDINGS FROM CLINICAL STUDIES RELEVANT TO THIS PATIENT

In a clinical study of 206 patients with node-negative, non-metastatic cT1 and cT2 bladder cancer who received radical cystectomy alone, pathological upstaging occurred in 23% of cT1 and 57% of cT2 patients.¹

- Patients with luminal subtype tumors had lower rates of upstaging to non-organ confined disease (node-positive or pT3 or greater) than those with non-luminal subtype disease.
 - 34% of patients with luminal subtype disease were upstaged at radical cystectomy.
 - 51% of patients with non-luminal subtype disease were upstaged at radical cystectomy.

In a clinical study of 601 patients with muscle-invasive bladder cancer, 247 were treated with NAC and radical cystectomy and 354 underwent radical cystectomy without NAC.³

- With NAC, the overall net benefit to overall survival (OS) and cancer-specific survival (CSS) at three years was 7% and 5%, respectively.
- After controlling for clinicopathologic variables, non-luminal subtype tumors had greatest benefit from NAC with 10% greater OS at 3 years (71% vs 61%) and 11% greater CSS at 3 years (77% vs 66%), whereas luminal subtype tumors did not have a statistically significant benefit.

TEST DESCRIPTION

Hematoxylin and Eosin (H&E) slides are microscopically reviewed by a pathologist to identify the optimal area of tumor that satisfies specimen requirements. The selected region of the tumor is microdissected from surrounding non-neoplastic tissue and submitted for testing. Decipher Bladder Genomic Subtyping Classifier (GSC) uses an oligonucleotide microarray to measure 219 genes to determine the probability of a patient tumor sample belonging to each of five molecular subtypes (Luminal, Luminal Infiltrated, Basal, Basal Claudin-Low, and Neuroendocrine-Like) based on functional molecular pathways. The tumor samples are classified as belonging to the subtype with the highest calculated probability.^{1-3,12}

INTENDED USE

Decipher Bladder GSC is intended for use in patients with American Joint Committee on Cancer (AJCC) Stage I to IIIA bladder cancer who are candidates for definitive local therapy such as chemotherapy, radical cystectomy, or chemoradiation, and have not yet received pelvic radiation or chemotherapy for treatment of bladder cancer. Results are intended for use as an adjunct to conventional clinical variables and nomograms currently used in determining treatment for these patients.

REFERENCES

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