

Comprehensive  
Tumor Profiling

HTG EdgeSeq  
DLBCL Cell of  
Origin Assay

## Innovation in a class by itself

HTG provides multiplexed gene expression assays and automation platforms that leverage the power and sensitivity of next-generation sequencing (NGS).

Designed to empower precision medicine, HTG's extraction-free chemistry provides more data from small samples, such as a single FFPE tissue section including core needle biopsies.

Recent advances in diffuse large B-cell lymphoma research have shown that determining the subtype is important for patient enrichment in clinical trials.

Unlike traditional methods like immunohistochemistry (IHC), the HTG EdgeSeq DLBCL Cell of Origin Assay enables researchers to consolidate the measurement of many important biomarkers in a single assay including a deployable classification solution.



# Get the complete picture



The HTG EdgeSeq DLBCL Cell of Origin Assay provides classification of Diffuse Large B-Cell Lymphoma (DLBCL) tumors into the activated B-cell like (ABC), germinal center B-cell like (GCB) or "unclassified" subtype using a single 5-micron FFPE tissue section including core needle biopsies.

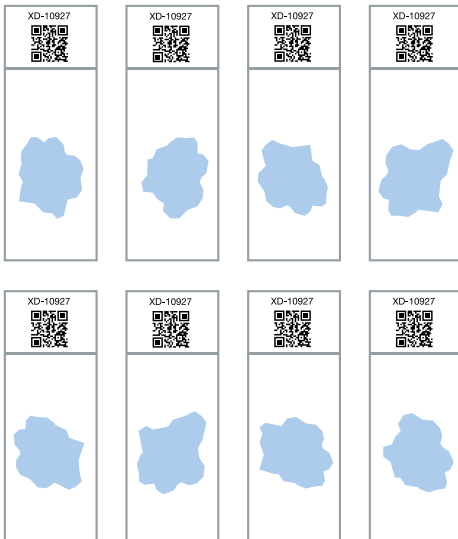
The sensitivity and dynamic range of next-generation sequencing paired with the specificity of HTG EdgeSeq chemistry enables gene expression measurement with minimal sample input.

## Applications include:

- Interrogate drug targets
- Measure genes implicated in double and/or triple expresser lymphomas
- Measure expression of 93 lymphoma-associated genes

## Traditional

8 slides



## HTG

1 slide



## Sample

Profile challenging sample types, including FFPE tissue, to deliver more data from less material.

## Sensitivity

Leverage the sensitivity and dynamic range of NGS for extensive gene expression profiling.

## Data

Deliver comprehensive results from a platform technology that can be used from translational medicine all the way to the clinic.

# Don't settle for half the story

Diffuse large B-cell lymphoma is the most common non-Hodgkin lymphoma (NHL), accounting for 30-40% of all cases.

The 2016 updates to the World Health Organization (WHO) lymphoid neoplasm guidelines require classification of DLBCL tumors into the ABC or GCB subtype.

### Case in Point

A pharmaceutical company was working from a hypothesis that their drug was more effective in one DLBCL subtype, but could not justify the testing of their clinical specimens due to high sample input requirements.

The HTG EdgeSeq DLBCL Cell of Origin Assay allowed the company to use a single FFPE section of a needle core biopsy to produce both cell of origin classification as well as additional characterization information regarding the tumor.

### Sample

Classification and profiling from a single FFPE tissue section inclusive of a core needle biopsy.

### Sensitivity

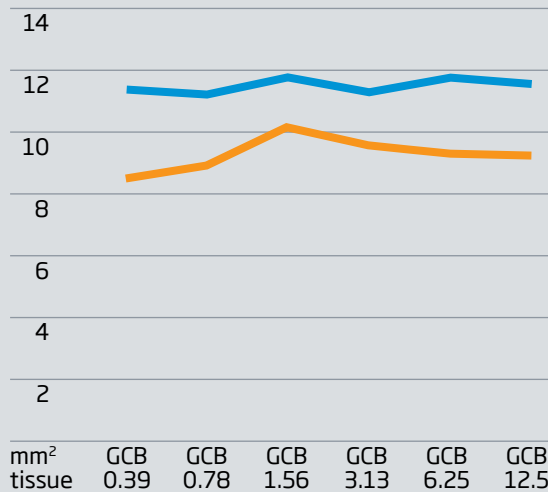
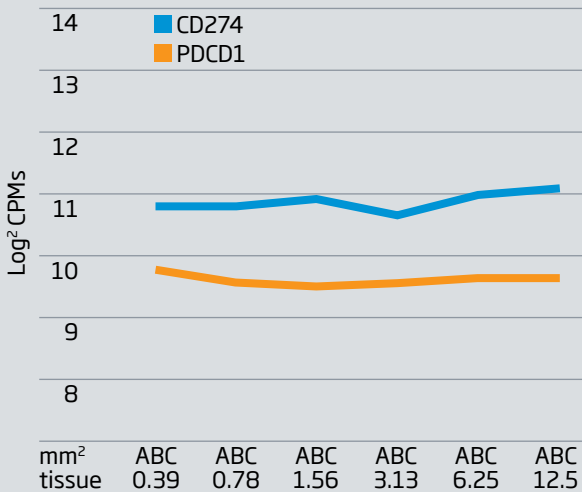
Benefit from NGS detection sensitivity and dynamic range to consistently measure small changes in high- and low-expressing genes.

### Data

Consistent classification from a range of sample input amounts.

Tumor Surface Area per Slide 5 μm thickness	HTG Recommended	Gene Expression Profiling Minimum	Competitor Recommended	Hans IHC Minimum	Choi IHC Minimum
2 mm <sup>2</sup>	<b>1 slide</b>	4 slides	8 or more	4 slides	6 slides
3 mm <sup>2</sup>	<b>1 slide</b>	3 slides	8 slides	4 slides	6 slides
4-7 mm <sup>2</sup>	<b>1 slide</b>	2 slides	5-7 slides	4 slides	6 slides
8-15 mm <sup>2</sup>	<b>1 slide</b>	1 slide	3-4 slides	4 slides	6 slides
>15 mm <sup>2</sup>	<b>1 slide</b>	1 slide	2 slides	4 slides	6 slides

Recommended sample input for competitive DLCBL COO assays versus the HTG EdgeSeq DLBCL Cell of Origin Assay



Expression of PDCD1 and CD274 (PD-1 and PDL-1) was consistent across the same titrations, indicating that relatively low expression genes are detected using the HTG EdgeSeq DLBCL Cell of Origin Assay in small FFPE tissue inputs

Sample Input	COO Subtype	Sample Input	COO Subtype
12.5 mm <sup>2</sup>	ABC	12.5 mm <sup>2</sup>	GCB
6.25 mm <sup>2</sup>	ABC	6.25 mm <sup>2</sup>	GCB
3.13 mm <sup>2</sup>	ABC	3.13 mm <sup>2</sup>	GCB
Minimum recommended input <b>1.56 mm<sup>2</sup></b>	<b>ABC</b>	<b>1.56 mm<sup>2</sup></b>	<b>GCB</b>
0.78 mm <sup>2</sup>	ABC	0.78 mm <sup>2</sup>	GCB
0.39 mm <sup>2</sup>	ABC	0.39 mm <sup>2</sup>	GCB

Consistent DLBCL cell of origin subtype classification was obtained from all titration points when previously classified samples were tested

## Products

# Make success possible

### HTG EdgeSeq DLBCL COO Assay

Illumina	916-003-008	HTG EdgeSeq DLBCL Cell of Origin Assay (4x8)
	916-003-024	HTG EdgeSeq DLBCL Cell of Origin Assay (4x24)
	916-003-096	HTG EdgeSeq DLBCL Cell of Origin Assay (1x96)

### HTG EdgeSeq Systems

HTG EDGE-SQ-100	HTG EdgeSeq system
HTG EDGE-SP-010	HTG EdgeSeq processor
HTG EDGE-PC-001	HTG Edge system PC and accessories

## Gene List

### Lymphoma Markers

BAG5	CCT7	CD86	GRB2	LRMP	NCAM1	PTPRC	STAT6
BAK1	CD15 (FUT4)	CD8A	HLA-DRA	MAL	NCOA1	REL	SUV39H2
BCL2	CD3D	CDK16	IL13	MAP2K7	NF2	RRM2	TCF3
BCL6	CD4	CDN1B	IL16	MAP3K13	PAICS	SERPINA9	TCL1A
BTK	CD47	ENTPD1	IL4I1	MKI67	PAX5	SMS	TRAF1
CASP7	CD5	FCGR3A	IRF4	MME	PIM1	SPI1	TYMS
CCND1	CD68	FOXP1	ITPKB	MYBL1	POU2AF1	SPN	VDAC1
CCND2	CD79A	FUT8	LMO2	MYC	POU2F2	SREBF1	ZHX2

### Drug Targets

AKT1	CD274	CD70	FCER2	PDCD1	TNFRSF8 (CD30)
CD19	CD276	CTLA4	LAG3	PDCD1LG2	
CD22	CD37	EZH2	MS4A1	STAT3	

For Research Use Only. Not for use in diagnostic procedures.



### **VERI/O Lab Services**

Our in-house VERI/O laboratory services support biomarker research and companion diagnostic development using HTG's extraction-free technology and portfolio of profiling assays. Planned services are expected to include direct sequencing of genetic variants.

### **CLIA-Certified Partners**

For prospective research, HTG has partnered with several CLIA-certified laboratories that provide profiling services using HTG systems and assays. Contact your HTG representative for more information.

## Partner with HTG

### **Commitment**

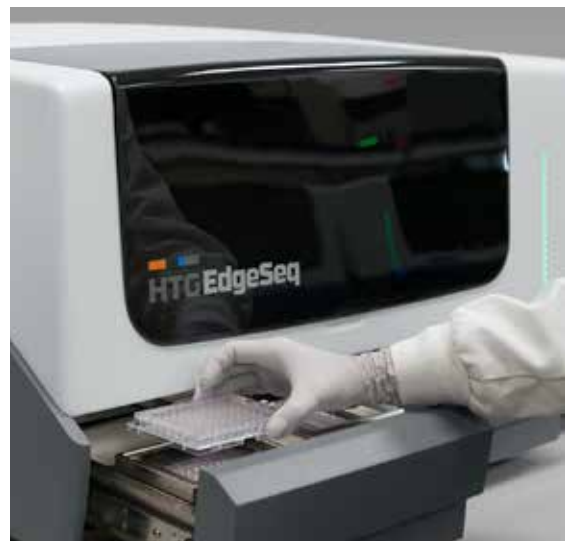
Comprehensive, NGS-based molecular profiling is a critical tool that enables your success in biomarker discovery and drug development. HTG is a committed partner every step of the way: from discovery through clinical development and commercial deployment.

### **Expertise**

The HTG team has a track record of success in leveraging its experience and capabilities in assay development, workflow automation, CDx submissions and global commercialization.

### **Technology**

HTG's extraction-free technology platforms and assays adapt to existing NGS workflows, providing automated solutions that are easily deployed to support your therapeutic and CDx objectives. HTG's solutions are simple, cost-effective, and generate actionable results from clinically relevant samples, especially FFPE tissue.







HTG Molecular Diagnostics, Inc.  
3430 E. Global Loop, Tucson, AZ 85706  
Customer Support: +1 877 507 3259  
Corporate Office: +1 877 289 2615 +1 520 547 2834  
Fax: +1 520 547 2837  
Service and support: [support@htgmolecular.com](mailto:support@htgmolecular.com)  
Orders: [orders@htgmolecular.com](mailto:orders@htgmolecular.com)  
More information: [info@htgmolecular.com](mailto:info@htgmolecular.com)



HTG Edge and HTG EdgeSeq processors are CE-marked and CSA-certified.

**For Research Use Only. Not for use in diagnostic procedures.**  
HTG EdgeSeq, HTG Edge and qNPA are trademarks of HTG Molecular Diagnostics, Inc.  
Any other trademarks or trade names used herein are the intellectual property  
of their respective owners.

Rev 1:07-SEP-2016