

# Test Definition: DLL3

Delta-Like 3 Protein (SP347),  
Semi-Quantitative Immunohistochemistry,  
Manual, Tissue

## Overview

### Useful For

Diagnosis of small cell lung carcinoma (SCLC), large cell neuroendocrine carcinoma (LCNEC), amongst other tumors

### Method Name

Immunohistochemistry (IHC)

### NY State Available

Yes

## Specimen

### Specimen Type

Special

### Shipping Instructions

Attach the green "Attention Pathology" address label (T498) to the outside of the transport container before putting into the courier mailer.

### Necessary Information

A pathology/diagnostic report and a brief history are required.

### Specimen Required

A minimum of 100 tumors cells are required for interpretation of DLL3 expression.

**Specimen Type:** Tissue

**Supplies:** Pathology Packaging Kit (T554)

**Submit:**

Formalin-fixed, paraffin-embedded tissue block

OR

3 Unstained glass, positively charged slides with 4-microns formalin-fixed, paraffin-embedded tissue

**Additional Information:** One slide will be stained with hematoxylin and eosin and returned.

### Forms

If not ordering electronically, complete, print, and send a [Immunohistochemical \(IHC\)/In Situ Hybridization \(ISH\) Stains Request](#) (T763) with the specimen.

### Reject Due To

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Wet/frozen tissue	Reject
Cytology smears	Reject
Nonformalin fixed tissue	Reject
Nonparaffin embedded tissue	Reject
Noncharged slides	Reject
ProbeOn slides	Reject
Snowcoat slides	Reject

## Specimen Stability Information

Specimen Type	Temperature	Time	Special Container
Special	Ambient (preferred)		
	Refrigerated		

## Clinical & Interpretive

### Clinical Information

Delta-like 3 protein (DLL3) is an atypical Notch ligand induced by the neuroendocrine transcription factor, ASCL-1. DLL3 is expressed on the cell membrane and in the cytoplasm of tumor cells.

### Reference Values

An interpretive report will be provided.

### Interpretation

Positivity for delta-like 3 protein is determined by immunoreactivity of any tumor cells within a specimen with an intensity ranging from 1 to 3+.

### Cautions

A minimum of 100 tumor cells must be present for interpretation. If criterion is not met, DLL3 expression cannot be evaluated following testing.

This test has been validated for non-decalcified paraffin embedded tissue specimens fixed in 10% neutral buffered formalin. This assay has not been validated on tissues subjected to the decalcification process and/or use of alternative fixatives for bone/bone marrow specimens or cell blocks.

Age of a cut paraffin section can affect immunoreactivity. Stability thresholds vary widely among published literature and are antigen dependent. Best practice is for paraffin sections to be cut within 6 weeks.

**Clinical Reference**

1. Saunders LR, Bankovich AJ, Anderson WC, et al. A DLL3-targeted antibody-drug conjugate eradicates high-grade pulmonary neuroendocrine tumor-initiating cells in vivo. *Sci Transl Med*. 2015;7(302):302ra136
2. Xie H, Boland JM, Maleszewski JJ, et al. Expression of delta-like protein 3 is reproducibly present in a subset of small cell lung carcinomas and pulmonary carcinoid tumors. *Lung Cancer*. 2019;135:73-79. doi:10.1016/j.lungcan.2019.07.016
3. Xie H, Kaye FJ, Isse K, et al. Delta-like protein 3 expression and targeting in merkel cell carcinoma. *Oncologist*. 2020;10:810-817. doi:10.1634/theoncologist.2019-0877
4. Magaki S, Hojat SA, Wei B, So A, Yong WH. An introduction to the performance of immunohistochemistry. *Methods Mol Biol*. 2019;1897:289-298. doi:10.1007/978-1-4939-8935-5\_25

**Performance****Method Description**

Immunohistochemistry on sections of paraffin-embedded tissue.(Unpublished Mayo method)

**PDF Report**

No

**Day(s) Performed**

Monday through Friday

**Report Available**

5 to 7 days

**Specimen Retention Time**

Until reported

**Performing Laboratory Location**

Mayo Clinic Laboratories - Rochester Main Campus

**Fees & Codes****Fees**

- Authorized users can sign in to [Test Prices](#) for detailed fee information.
- Clients without access to Test Prices can contact [Customer Service](#) 24 hours a day, seven days a week.
- Prospective clients should contact their account representative. For assistance, contact [Customer Service](#).

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## Test Classification

This test was developed and its performance characteristics determined by Mayo Clinic in a manner consistent with CLIA requirements. It has not been cleared or approved by the US Food and Drug Administration.

## CPT Code Information

88360

## LOINC® Information

Test ID	Test Order Name	Order LOINC® Value
DLL3	DLL3(SP347)Semi-Quant IHC,Manual	In Process

Result ID	Test Result Name	Result LOINC® Value
603333	Interpretation	59465-5
603334	Participated in the Interpretation	No LOINC Needed
603335	Report electronically signed by	19139-5
603336	Material Received	81178-6
603337	Disclaimer	62364-5
603338	Case Number	80398-1