

## Overview

### Useful For

Aids in the identification of high grade neuroendocrine carcinomas and small cell carcinomas

### Testing Algorithm

[For the initial technical component only immunohistochemical \(IHC\) stain performed, the appropriate bill-only test ID will be reflexed and charged \(IHTOI\). For each additional technical component only IHC stain performed, an additional bill-only test ID will be reflexed and charged \(IHTOA\).](#)

### Reflex Tests

Test Id	Reporting Name	Available Separately	Always Performed
IHTOI	IHC Initial, Tech Only	No	No
IHTOA	IHC Additional, Tech Only	No	No

### Method Name

Immunohistochemistry

### NY State Available

Yes

## Specimen

### Specimen Type

TECHONLY

### Ordering Guidance

[This test includes only technical performance of the stain \(no pathologist interpretation is performed\). If diagnostic consultation by a pathologist is required order PATHC / Pathology Consultation.](#)

### Shipping Instructions

Attach the green pathology address label and the pink Immunostain Technical Only label included in the kit to the outside of the transport container.

### Specimen Required

**Supplies:** Immunostain Technical Only Envelope (T693)

**Specimen Type:** Tissue

**Container/Tube:** Immunostain Technical Only Envelope (T693)

**Preferred:** 2 unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick

**Acceptable:** Formalin-fixed, paraffin-embedded (FFPE) tissue block

## Digital Image Access

1. Information on accessing digital images of IHC stains and the manual requisition form can be accessed through this website: <https://news.mayocliniclabs.com/ihc-stains/>
2. Clients ordering stains using a manual requisition form will not have access to digital images.
3. Clients wishing to access digital images must place the order for IHC stains electronically. Information regarding digital imaging can be accessed through this website: <https://news.mayocliniclabs.com/ihc-stains/#FAQ>

## 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

Tissue/Other    Wet/frozen tissue smears    Cytology smears    Nonformalin fixed tissue    Nonparaffin embedded tissue    Noncharged slides    ProbeOn slides

## Specimen Stability Information

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

## Clinical & Interpretive

### Clinical Information

Retinoblastoma (Rb) is a phosphoprotein that is expressed in most normal cells and acts as a tumor suppressor by providing a cell cycle checkpoint between G1 and S phases. Loss of nuclear expression of Rb is useful in the identification of neuroendocrine carcinomas and small cell carcinomas. Loss of Rb can also be helpful to differentiate spindle cell lipomas from myofibroblastomas and cellular angiofibromas from other genital stromal lesions.

### Interpretation

This test includes only technical performance of the stain (no pathologist interpretation is performed). If diagnostic consultation by a pathologist is required order PATHC / Pathology Consultation.

The positive and negative controls are verified as showing appropriate immunoreactivity. If a control tissue is not included on the slide, a scanned image of the relevant quality control tissue is available upon request. Contact 855-516-8404.

Interpretation of this test should be performed in the context of the patient's clinical history and other diagnostic tests by a qualified pathologist.

**Cautions**

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. Thunnissen E, Borczuk AC, Flieder DB, et al: The Use of Immunohistochemistry Improves the Diagnosis of Small Cell Lung Cancer and Its Differential Diagnosis. An International Reproducibility Study in a Demanding Set of Cases. J Thorac Oncol 2017 Feb;12\(2\):334-346](#)
2. Yuan J, Knorr J, Altmannsberger M, et al: Expression of p16 and Lack of pRB in Primary Small Cell Lung Cancer. J Pathol 1999;189:358-362
3. Chen B, Marino-Enriquez A, Fletcher C, et al: Loss of Retinoblastoma Protein Expression in Spindle Cell/Pleomorphic Lipomas and Cytogenetically Related Tumors: An Immunohistochemical Study With Diagnostic Implications. Am J Surg Pathol 2012;36(8):1119-1128
4. Tang L, Basturk O, Sue J, et al: A Practical Approach to the Classification of WHO Grade 3 (G3) Well-differentiated Neuroendocrine Tumor (WD-NET) and Poorly Differentiated Neuroendocrine Carcinoma (PD-NEC) of the Pancreas. Am J Surg Pathol 2016;40(9):1192-1202
5. Konukiewitz B, Schlitter A, Jesinghaus M, et al: Somatostatin receptor expression related to TP53 and RB1 alterations in pancreatic and extrapancreatic neuroendocrine neoplasms with a Ki67-index above 20%. Mod Pathol 2017;1-12

**Performance****Method Description**

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

**PDF Report**

No

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**Specimen Retention Time**

Until staining is complete

**Performing Laboratory Location**

Rochester

**Fees & Codes****Test Classification**

This test has been cleared, approved, or is exempt by the US Food and Drug Administration and is used per manufacturer's instructions. Performance characteristics were verified by Mayo Clinic in a manner consistent with CLIA requirements.

**CPT Code Information**

88342-TC, primary

88341-TC, if additional IHC

**LOINC® Information**

Test ID	Test Order Name	Order LOINC Value
RB1	Retinoblastoma IHC, Tech Only	Order only;no result

Result ID	Reporting Name	LOINC®
604029	Retinoblastoma IHC, Tech Only	Bill only; no result