
Overview

Useful For

Diagnosis of epithelial ovarian cancer that may be eligible for treatment with an anti-folate receptor 1 protein antibody

Method Name

Immunohistochemistry (IHC)

NY State Available

Yes

Specimen

Specimen Type

Special

Ordering Guidance

This test may be utilized for all types of ovarian cancers.

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

Specimen Type: Tissue

Source: Ovarian tumor

Supplies: Pathology Packaging Kit (T554)

Submit:

Formalin-fixed, paraffin-embedded tissue block

OR

3 Unstained glass, "positively-charged" glass slides with 4-microns thick 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 an [Immunohistochemical \(IHC\)/In Situ Hybridization \(ISH\) Stains Request](#) (T763) with the specimen.

Reject Due To

Wet/frozen tissue	Reject
Decalcified paraffin embedded tissue	Reject
Cytology smears	Reject
Non-formalin fixed tissue including alcohol-formalin-acetic acid (AFA), 95% ethanol, PREFER fixatives or zinc formalin	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

Folate receptor 1 protein (FOLR1), also known as folate receptor alpha (FRa), is expressed in approximately 90% of ovarian carcinomas and serves as a predictive biomarker for FOLR1-targeted therapy for epithelial ovarian cancer. FOLR1

is a member of the folate receptor family that is reported to be highly expressed in various tumors of epithelial origin but has restricted expression in normal epithelial cells. Positivity for FOLR1 is expressed on 75% or more of viable tumor cells with moderate and/or strong membrane staining, while less than 75% of viable tumor cells with moderate and/or strong membrane staining is considered negative for FOLR1.

Reference Values

An interpretive report will be provided.

Interpretation

Folate receptor 1 protein (FOLR1) is a biomarker that, when positive (at least moderate membranous staining) in greater than or equal to 75% of tumor cells, predicts response to treatment with Elahere (mirvetuximab soravtansine) and has been approved for epithelial ovarian, fallopian tube, or primary peritoneal cancer.(1)

This result should be interpreted in the appropriate clinical context.

Cautions

This test has been validated for non-decalcified paraffin-embedded tissue specimens fixed in 10% neutral buffered formalin at Mayo Clinic in Rochester, Minnesota. Specimens are recommended to be placed in formalin within 1 hour of acquisition and fixed between 12 hours and 72 hours. This assay has not been validated on tissue or cellblocks subjected to alternative fixatives or decalcification.

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.

The charge of glass slides can be affected by environmental factors and subsequently may alter slide staining. Sending unsuitable glass slides can result in inconsistent staining due to poor slide surface chemistry.

Best practices for storage of positively charged slides:

- Minimize time slides are stored after being unpackaged
- Limit exposure to high humidity and heat
- Minimize exposure to plastics

Clinical Reference

1. VENTANA FOLR1 (FOR-2.1) RxDx Assay. US Package Insert. Roche Diagnostics; 2022
2. Scaranti M, Cojocaru E, Banerjee S, et al. Exploiting the folate receptor alpha in oncology. *Nat Rev Clin Oncol.* 2020;17(6):349-359
3. Necela B, Crozier J, Andorfer C, et al. Folate receptor-alpha (FOLR1) expression and function in triple negative tumors. *PLoS One.* 2015;10(3):e0122209
4. Kobel M, Madore J, Ramus S, et al. Evidence for a time-dependent association between FOLR1 expression and survival from ovarian carcinoma: implications for clinical testing. An Ovarian Tumour Tissue Analysis consortium study. *Br J Cancer.* 2014;111(12):2297-2307

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](#).

Test Classification

This test has been modified from the manufacturer's instructions. Its performance characteristics were determined by Mayo Clinic in a manner consistent with CLIA requirements. This test 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
AFOLR	FOLR1, SemiQuant IHC, Manual	105010-3

Result ID	Test Result Name	Result LOINC® Value
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Test Definition: AFOLR

Folate Receptor Alpha (FOLR1),
Semi-Quantitative Immunohistochemistry,
Manual

620732	Interpretation	50595-8
621015	Participated in the Interpretation	No LOINC Needed
621016	Report electronically signed by	19139-5
621017	Material Received	81178-6
621018	Disclaimer	62364-5
621019	Case Number	80398-1