Tissue Histology Processing Record

Surgical Pathology — FFPE Grossing, Processing & Staining Workflow

Meridian Diagnostics ▪ Nexa Medical Campus, Building C ▪ Accession: HISTO-2026-04821 ▪ v2.0

Accession #:	HISTO-2026-04821	**Specimen Type:**	Skin, excisional biopsy
Priority:	Routine	**Date Received:**	2026-07-14, 08:52
Ordering Phys.:	Dr. Elena Marsh, Dermatology	**Submitting Site:**	Meridian Outpatient Surgery Center
Requested TAT:	3 business days	**Status:**	✔ COMPLETE

1 Specimen Accessioning & Gross Description

Patient Name:	Naomi R. Castellan	**MRN:**	MRD-118842
Date of Birth:	1987-03-22	**Sex:**	Female
Accessioned By:	R. Okafor, HT(ASCP)	**Accession Time:**	2026-07-14, 09:10
Container Received:	Single leak-proof jar, 10% NBF	**Fixative Volume Ratio:**	≥10:1 (confirmed)
Specimen Site:	Left volar forearm, lesion excision	**Number of Parts:**	1

1.1. Gross Description

Received in formalin, labeled with the patient name and MRN above, is a single ellipse of skin and subcutaneous tissue measuring 2.4 × 1.1 × 0.6 cm, oriented with a short black suture marking the 12 o'clock margin per the requisition diagram. The epidermal surface shows a central, tan-brown, slightly raised papule measuring 0.7 × 0.6 cm with irregular borders, located 0.9 cm from the nearest (radial) inked margin. The specimen is serially sectioned at 2–3 mm intervals perpendicular to the long axis ("bread-loafing"), yielding six tissue slices submitted in their entirety.

Margins are inked in accordance with the four-colour scheme documented in Section 3 prior to sectioning, so that orientation is preserved through processing, embedding, and microscopic review. Representative sections are submitted as follows:

- Cassette A: central lesion, two representative slices, full-face sections.
- Cassette B: superior (12 o'clock) margin, perpendicular sections.
- Cassette C: inferior (6 o'clock) margin, perpendicular sections.
- Cassette D: remaining peripheral tissue, representative bread-loaf slices.

Specimen Integrity Check

Container intact on arrival, no leakage observed. Formalin covered the entire specimen at accessioning. Fixation clock (Section 2) started at time of receipt per SOP HISTO-SOP-014, *Specimen Accessioning and Fixation Initiation*.

2 Fixation Record & Automated Tissue Processing Schedule

2.1. Fixation Record

Fixative	Buffer	Start	End	Duration	Technologist
10% Neutral Buffered Formalin	Phosphate, pH 7.0–7.4	07-14 09:10	07-14 21:10	12.0 h	R. Okafor, HT(ASCP)

Fixation duration meets the 6–72 hour window specified in SOP HISTO-SOP-014 for excisional skin specimens of this thickness, satisfying CAP pre-analytic guidance on formalin fixation time [5].

2.2. Automated Tissue Processing Schedule

Processed on a Nimbus TP-300 automated closed tissue processor, program `STD-O/N-01` (standard overnight, 4 cassettes, 4 mm sections).

Sta.	Reagent	Conc. / Grade	Time	Temp
1	Neutral Buffered Formalin (holding)	10%	30 min	22°C
2	Ethanol	70%	45 min	22°C
3	Ethanol	80%	45 min	22°C
4	Ethanol	95%	45 min	22°C
5	Ethanol	95%	45 min	22°C
6	Ethanol	100% (anhydrous)	60 min	22°C
7	Ethanol	100% (anhydrous)	60 min	22°C
8	Ethanol	100% (anhydrous)	60 min	22°C
9	Xylene (clearing)	Reagent grade	60 min	22°C
10	Xylene (clearing)	Reagent grade	60 min	22°C
11	Paraffin wax, infiltration	Melting pt. 56–58°C	60 min	58°C, vacuum
12	Paraffin wax, infiltration	Melting pt. 56–58°C	60 min	58°C, vacuum
13	Paraffin wax, infiltration	Melting pt. 56–58°C	90 min	58°C, vacuum

⚠ Cassette Load Limit

Do not exceed 4 cassettes per basket position on program `STD-O/N-01`; overloading extends effective infiltration time per cassette and has been linked to incomplete paraffin penetration in blocks thicker than 4 mm. Confirm basket count against the cassette log (Section 3) before starting the run.

3 Cassette Log & Embedding Record

3.1. Margin Ink Legend

Applied to the specimen surface prior to sectioning, per SOP HISTO-SOP-014, so that cut margins remain traceable back to their orientation on the gross specimen.

12 o'clock (superior) 6 o'clock (inferior) 3 o'clock (radial) 9 o'clock (ulnar)

3.2. Cassette Log

Cassette	Block ID	Tissue / Margin Description	Pieces	Orientation Notes	Embedded By
A	BLK-04821-A	Central lesion, full-face section	2	Epidermis up, cassette notch at 12 o'clock	M. Delacroix
B	BLK-04821-B	Superior margin (black ink), perpendicular	1	Cut edge down, ink surface visible	M. Delacroix
C	BLK-04821-C	Inferior margin (blue ink), perpendicular	1	Cut edge down, ink surface visible	M. Delacroix
D	BLK-04821-D	Peripheral bread-loaf slices, remaining tissue	3	Slices stacked on cut face	M. Delacroix

All cassettes embedded in histology-grade paraffin (melting point 56–58°C) on a Nimbus EC-200 embedding console, cut face down, within 2 hours of completion of the processing schedule (Section 2) to minimise wax re-crystallisation.

4 Staining Protocols

4.1. Routine Hematoxylin & Eosin (H&E)

Standard progressive H&E, run on a Nimbus ST-120 linear stainer, calibrated daily against a control slide before the first clinical batch [3].

Step	Reagent / Process	Time
1	Xylene, deparaffinize (2 changes)	3 min each
2	Rehydrate through graded ethanol (100%, 95%, 70%)	1 min each
3	Rinse in running deionised water	1 min
4	Harris hematoxylin, nuclear stain	4 min
5	Rinse in running water; differentiate in 1% acid alcohol	3 sec dip
6	Blue in 0.2% ammonia water (bluing)	30 sec
7	Eosin Y, cytoplasmic counterstain	45 sec
8	Dehydrate through graded ethanol (70%, 95%, 100%)	1 min each
9	Clear in xylene (2 changes)	2 min each
10	Coverslip with permanent mounting medium	—

4.2. Special Stain: Masson's Trichrome

Ordered by the sign-out pathologist on Block BLK-04821-A to assess dermal collagen distribution at the lesion base. Performed manually per SOP HISTO-SOP-027.

Reagent / Process	Time
Bouin's solution, mordant (56°C)	60 min
Weigert's iron hematoxylin, nuclei	10 min
Biebrich scarlet-acid fuchsin, cytoplasm/muscle	10 min
Phosphomolybdic-phosphotungstic acid, differentiation	12 min
Aniline blue, collagen counterstain	8 min
1% acetic acid, rinse and set	2 min

Expected result: nuclei black, cytoplasm and muscle fibres red, collagen blue. Fixation in formalin for the duration recorded in Section 2 is adequate for trichrome staining; specimens fixed under 6 hours can under-stain collagen and would require re-processing [4].

- Stain batch controls (tonsil, appendix) run concurrently with every trichrome load.
- Slides screened for uniform blue collagen signal before release to the pathologist.
- Any pale or patchy staining triggers a repeat from the block, not a re-stain of the same section.

5 Block & Slide Inventory

5.1. Paraffin Block Inventory

Block ID	Cassette	Tissue Description	Storage Location	Retain Until
BLK-04821-A	A	Central lesion, full-face section	Block Rack 12, Drawer C	2036-07-14
BLK-04821-B	B	Superior margin, perpendicular	Block Rack 12, Drawer C	2036-07-14
BLK-04821-C	C	Inferior margin, perpendicular	Block Rack 12, Drawer C	2036-07-14
BLK-04821-D	D	Peripheral bread-loaf slices	Block Rack 12, Drawer C	2036-07-14

Retention period follows the 10-year minimum for paraffin blocks under CAP laboratory accreditation requirements [2].

5.2. Slide Inventory

Slide ID	Block	Stain	Sections	Coverslip	Cut By / Date
SL-04821-A1	BLK-04821-A	H&E	2	Yes	M. Delacroix, 07-15
SL-04821-A2	BLK-04821-A	Masson Trichrome	1	Yes	J. Weatherly, 07-15
SL-04821-B1	BLK-04821-B	H&E	1	Yes	M. Delacroix, 07-15
SL-04821-C1	BLK-04821-C	H&E	1	Yes	M. Delacroix, 07-15
SL-04821-D1	BLK-04821-D	H&E	3	Yes	M. Delacroix, 07-15
SL-04821-D2	BLK-04821-D	Unstained (reserve, charged slides)	2	No	J. Weatherly, 07-15

Slide Storage Location: Slide File 7, Tray 118, Positions 4821-A1 through 4821-D2

Distributed To: Dr. Priya Anand, Anatomic Pathology (2026-07-15, 14:20)

Wet Tissue Retention: Remaining gross tissue held 2 weeks post sign-out, then discarded per SOP HISTO-SOP-031

6 Quality Control & Sign-Off

6.1. Technical Quality Checklist

Check	Result	Verified By
Section thickness within 4–5 µm target	PASS	J. Weatherly
No visible tissue folds, chatter, or knife marks	PASS	J. Weatherly
H&E nuclear/cytoplasmic contrast within reference range	PASS	M. Delacroix
Coverslips fully sealed, bubble-free	PASS	J. Weatherly
Slide labels match cassette log and requisition	PASS	R. Okafor, HT(ASCP)
Daily stainer control slide within acceptance criteria	PASS	M. Delacroix

Turnaround Time Summary

Received:	2026-07-14, 09:10	**Processing complete:**	2026-07-15, 09:10
Cutting & staining complete:	2026-07-15, 13:05	**Slides to pathologist:**	2026-07-15, 14:20
Elapsed (accession to slides):	1 day, 5.2 h	**Target TAT:**	3 business days

6.2. Custody and Sign-Off

By signing below, the histotechnologists and laboratory director confirm that grossing, fixation, processing, embedding, cutting, and staining were performed in accordance with SOP HISTO-SOP-014, HISTO-SOP-027, and HISTO-SOP-031, and that the finished slides are suitable for pathologist interpretation [1].

Rosalind Okafor, HT(ASCP)
Accessioning & Grossing Technologist
Date: _____

Marcus Delacroix, HT(ASCP)
Processing, Embedding & Cutting Technologist
Date: _____

Jonah Weatherly, HTL(ASCP)
Staining & Quality Control Reviewer
Date: _____

Dr. Priya Anand
Sign-Out Pathologist, Meridian Diagnostics
Date: _____

References

[1] John D. Bancroft, Kim S. Suvarna, and Christopher Layton. *Bancroft's Theory and Practice of Histological Techniques*. Elsevier, 8 edition, 2019.

[2] College of American Pathologists. Laboratory accreditation program: Anatomic pathology checklist. Technical report, College of American Pathologists, 2021.

[3] Andrew H. Fischer, Kenneth A. Jacobson, Jack Rose, and Rolf Zeller. Hematoxylin and eosin staining of tissue and cell sections. *Cold Spring Harbor Protocols*, 2008(5):pdb.prot4986, 2008.

[4] Kim S. Suvarna, Christopher Layton, and John D. Bancroft. *Bancroft's Theory and Practice of Histological Techniques*. Churchill Livingstone, 7 edition, 2018.

[5] Martin Werner, Andreas Chott, Andrea Fabiano, and Hector Battifora. Effect of formalin tissue fixation and processing on immunohistochemistry. *The American Journal of Surgical Pathology*, 24(7):1016–1019, 2000.