

WET LAB REAGENT LOGBOOK

Reagent Preparation, Mass Balance & Quality Control Tracking

Facility: Apex BioLabs Core Facility

Unit: Buffer & Media Prep Suite B-304

REAG-LOG-2026-B3

Audit Log Ref: AL-88392-X

TOTAL BATCHES LOGGED

142

Quarter Q3 2026

QC APPROVED & ACTIVE

128

Ready for Assay Use

PENDING QC VERIFY

9

Hold for Sterility

EXPIRED / QUARANTINED

5

Flagged Disposal

SECTION 1: MASTER REAGENT PREPARATION RECORD – BATCH # REAG-2026-0891

Reagent Name: 10X Tris-EDTA (TE) Buffer pH 8.0

Batch / Lot ID: REAG-2026-0891-TE80

Target Volume: 1000.0 mL (1.0 L)

Prepared By: Dr. Eleanor Vance (Analyst)

SOP Reference: SOP-BUFF-012 Rev 4.0

Preparation Date: 2026-07-24 Time: 09:30

Expiration Date: 2027-01-24 (6 Months)

Storage Condition: Room Temp (20°C to 25°C)

Verified By: Marcus Chen (QA Lead)

Quality Grade: Molecular Biology Grade

Formulation & Chemical Mass Calculation Block

Chemical Component	CAS #	MW	Target Conc.	Calc. Mass	Weighed Mass	Vendor & Lot #
Tris Base	77-86-1	121.14	100 mM	12.114 g	12.115 g	Synapse #SY-88291
[Tris(hydroxymethyl)aminomethane]						
EDTA Disodium Salt Dihydrate	6381-92-6	372.24	10 mM	3.722 g	3.723 g	Nexa #NX-44012
Hydrochloric Acid (HCl, 6M Stock)	7647-01-0	N/A	pH Adj.	~ 4.2 mL	4.18 mL	Apex #AP-90112
Ultrapure Water (Milli-Q 18.2 MΩ · cm)	7732-18-5	18.02	Diluent	Q.S. 1000 mL	982.5 g	In-House #TANK-02

Step-by-Step Preparation Protocol Execution

Step	Procedure Specification	Check	Observed Parameter / Notes
01	Tare analytical balance (Bal-04). Weigh Tris Base (12.114 g) and EDTA (3.722 g).	[✓]	Weighed 12.115 g Tris, 3.723 g EDTA.
02	Transfer solutes into 1000 mL glass beaker. Add 800 mL ultrapure ddH ₂ O.	[✓]	Dissolved under magnetic stirring at 400 RPM.
03	Calibrate pH meter (pH-02) using pH 4.01, 7.00, and 10.01 standard buffers.	[✓]	Slope = 99.2%, Temp compensation ON (22.4 °C).
04	Slowly titrate with 6M HCl under stirring until target pH 8.00 ± 0.05 is achieved.	[✓]	Final titration volume: 4.18 mL 6M HCl. pH = 8.01.
05	Transfer solution to 1000 mL volumetric flask. Q.S. to mark with ddH ₂ O.	[✓]	Meniscus aligned precisely at 1000.0 mL mark.
06	Filter sterilize through 0.22 μm PES membrane filter into sterile storage bottle.	[✓]	Autoclave indicator strip turned black. Cycle #402.

Quality Control, Verification & Sign-Off

Final Measured pH: 8.01 at 22.5 °C (Spec: 8.00 ± 0.05)

Physical Appearance: Clear, colorless, particle-free

DNase/RNase Test: Negative (Fluorescence Assay Pass)

Analyst Signature: Dr. Eleanor Vance

Conductivity: 14.2 mS/cm at 23.0 °C

Sterility Check: Passed (0.22 μm Filtered + Autoclaved)

Refractometer Index: 1.3342 ± 0.0005

QA Approval: Marcus Chen, Lead QA

REAGENT BATCH IDENTIFIER BARCODE LOG

Scan barcode for automated LIMS inventory entry and lot genealogy tracking.

REAG-2026-0891-TE80

SECTION 2: MASTER REAGENT BATCH PREPARATION LOGBOOK

Comprehensive chronological log of all stock solutions, buffers, and working reagents prepared in Core Suite B-304.

Batch ID	Reagent Name	Conc.	Prep Date	Exp Date	Prep By	Storage	QC Status	Sign
0885	1M Tris-HCl pH 7.5	1.0 M	2026-07-15	2027-01-15	E. Vance	RT (22°C)	Approved	EV
0886	0.5M EDTA pH 8.0	0.5 M	2026-07-16	2027-01-16	M. Chen	RT (22°C)	Approved	MC
0887	50X TAE Running Buffer	50X	2026-07-18	2027-07-18	S. Jenkins	RT (22°C)	Approved	SJ
0888	10% (w/v) SDS Solution	10%	2026-07-19	2026-10-19	E. Vance	RT (25°C)	Approved	EV
0889	5M Sodium Chloride (NaCl)	5.0 M	2026-07-20	2027-07-20	R. Patel	RT (22°C)	Approved	RP
0890	Phosphate Buffered Saline (PBS 10X)	10X	2026-07-22	2027-01-22	S. Jenkins	4°C	Approved	SJ
0891	10X Tris-EDTA (TE) Buffer pH 8.0	10X	2026-07-24	2027-01-24	E. Vance	RT (22°C)	Approved	EV
0892	1X RIPA Lysis Buffer w/ Protease Inhib.	1X	2026-07-24	2026-08-24	M. Chen	-20°C	Pending QC	MC
0893	70% Ethanol Nuclease-Free	70%	2026-07-24	2026-10-24	E. Vance	RT (Flamm.)	Approved	EV
0894	1M Dithiothreitol (DTT) Solution	1.0 M	2026-07-24	2026-10-24	R. Patel	-20°C	Pending QC	RP
0880	6X DNA Loading Dye w/ Xylene	6X	2026-06-01	2026-07-20	S. Jenkins	4°C	Expired	SJ
0878	Proteinase K Buffer (20 mg/mL)	20 mg/mL	2026-05-15	2026-07-15	M. Chen	-20°C	Quarantine	MC

SECTION 3: SPECIALIZED FORMULATION SHEET – BATCH # REAG-2026-0892 (RIPA LYSIS BUFFER)

Formulation & Ingredient Breakdown (Total Volume: 500 mL)

Reagent Component	Target Conc.	Amount	Stock Lot Ref.
Tris-HCl (pH 7.5, 1.0M Stock)	50 mM	25.0 mL	REAG-2026-0885
Sodium Chloride (NaCl, 5M Stock)	150 mM	15.0 mL	REAG-2026-0889
NP-40 (Triton X-100 Substitute)	1.0% v/v	5.0 mL	Sigma #BC-99120
Sodium Deoxycholate (10% Stock)	0.5% w/v	25.0 mL	Meridian Chem #MC-104
SDS (Sodium Dodecyl Sulfate, 10%)	0.1% w/v	5.0 mL	REAG-2026-0888
EDTA (0.5M Stock pH 8.0)	1.0 mM	1.0 mL	REAG-2026-0886
PMSF (Protease Inhibitor, 100mM)	1.0 mM	5.0 mL	Fresh Addition
Ultrapure Nuclease-Free Water	Q.S.	419.0 mL	Tank-02

HAZARD & SAFETY WARNINGS

- Detergent Risk:** SDS and NP-40 are severe skin/eye irritants.
- Toxic Chemical:** PMSF is a potent neurotoxin. Use fume hood.
- Required PPE:** Gloves, safety goggles, lab coat.
- Storage:** Store aliquots at -20°C. Avoid freeze-thaw.
- Spill Protocol:** Neutralize with pads; wash with 10% ethanol.

ALIQUOT DISTRIBUTION LOG

Prepared 50 × 10 mL cryovials.

Labeled with barcode hash ***RIPA-0892***.

Stored in Freezer F-04, Rack B, Box 2.

REAGENT STABILITY & STORAGE MATRIX					
Reagent Category	Ideal Temp	Max Shelf Life	Light Sensitive?	Freeze-Thaw Limit	Degradation Indicators
Tris / EDTA Buffers	20°C – 25°C	12 Months	No	Unlimited	Precipitation, microbial cloudiness
Detergent Stock Solutions (SDS)	18°C – 25°C	6 Months	No	Avoid Freezing	White crystal precipitate below 15°C
Enzyme / Protease Inhibitors	-20°C	3 Months	Yes (Keep Dark)	Max 3 Cycles	Loss of enzymatic cleavage activity
Reducing Agents (DTT / DTT)	-20°C	3 Months	Yes	Single Use Rec.	Oxidation, faint yellow discoloration

SECTION 4: INSTRUMENT CALIBRATION & QUALITY ASSURANCE LOG

Routine verification records for analytical instruments used in reagent formulation (GLP/ISO 17025 Requirement).

pH Meter 3-Point Calibration Record

Device ID: pH-Meter-02 (Thermo Orion Star A211)
Calibration Date: 2026-07-24 **Time:** 08:15 AM
Technician: Dr. Eleanor Vance

Standard	Target pH	Measured	Status
Buffer 1	4.01	4.01	Pass
Buffer 2	7.00	7.02	Pass
Buffer 3	10.01	10.00	Pass

Electrode Slope: 99.4% (Spec: 95.0% – 105.0%)
Asymmetry Potential: 2.1 mV (Spec: ±30 mV)
Next Due Date: 2026-07-31 (Weekly Calibration Cycle)

Analytical Balance Daily Verification

Device ID: BAL-04 (Mettler Toledo XS205 DualRange)
Verification Date: 2026-07-24 **Time:** 08:30 AM
Technician: Marcus Chen

Class M Weight	Nominal	Observed	Dev.
Standard 1	10.0000 g	10.0002 g	+0.2 mg
Standard 2	1.0000 g	1.0001 g	+0.1 mg
Standard 3	100.0000 g	100.0005 g	+0.5 mg

Corner Load Test: Passed (< 0.3 mg variance)
Zero Drift Check: < 0.1 mg after 15 min stabilization
Next External Cal: 2026-12-15 (Annual Vendor Audit)

SECTION 5: CHEMICAL STOCK INVENTORY & RE-ORDER THRESHOLDS

Current inventory levels of dry chemicals, concentrated acids, and solvents in Store Room C-102.

Chemical Item	CAS Number	Vendor / Cat #	Current Stock	Min. Threshold	Location	Re-Order Status
Tris Base Ultra Pure	77-86-1	Synapse #SY-88291	2.5 kg	1.0 kg	Shelf A-04	Sufficient
EDTA Disodium Dihydrate	6381-92-6	Nexa #NX-44012	800 g	500 g	Shelf A-05	Sufficient
Sodium Dodecyl Sulfate (SDS)	151-21-3	Vertex Chem #VX-109	350 g	500 g	Shelf B-02	Re-Order Placed
Hydrochloric Acid (6M HCl)	7647-01-0	Apex Lab #AP-90112	4.0 L	2.0 L	Acid Cab 01	Sufficient
Sodium Chloride (NaCl)	7647-14-5	Synapse #SY-10022	5.0 kg	2.0 kg	Shelf A-02	Sufficient
Protease Inhibitor Cocktails	N/A	Meridian #MC-9901	4 Vials	5 Vials	Freezer F-02	CRITICAL LOW
Dithiothreitol (DTT)	3483-02-3	Nexa #NX-30911	25 g	50 g	Refrig R-01	Re-Order Placed

Incident ID	Date	Deviation Description	Corrective Action Taken (CAPA)	Initials
DEV-2026-041	2026-07-10	Autoclave Cycle #389 failed pressure hold test during TAE buffer sterilization.	Re-sterilized batch in Autoclave #02. Maintained unit logged for gasket replacement.	EV
DEV-2026-042	2026-07-19	SDS 10% solution precipitated upon storage at 12°C cold room.	Warm bottle to 37°C to redissolve. Updated SOP label: "Store strictly at room temp (22°C)".	MC

SECTION 7: QUALITY ASSURANCE LOGBOOK SIGN-OFF & APPROVAL

Lead Laboratory Analyst:

Signature: Dr. Eleanor Vance
Date: 2026-07-24

Principal Investigator Approval:

Signature: Prof. Sarah Jenkins, PhD
Date: 2026-07-24

Quality Assurance Officer:

Signature: Marcus Chen, Lead QA
Date: 2026-07-24

Regulatory Compliance Stamp:

APEX BIOLABS QUALITY CONTROL
ISO 17025 / GLP COMPLIANT
AUDITED & APPROVED 2026