



Simple Solution for Your Research

Hito Hematoxylin Solutions

Hito Eosin-Y Aqueous Solution

Hito HE-Diff Solution

Hito Modified Scott's Tap Water Substitute 5xConcentrate

Hito Hematoxylin - Eosin-Y Stain Set

**User Manual
And
Material Safety Data Sheet**

FOR IN VITRO RESEARCH USE ONLY

Hitobiotec Corp.

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I. Introduction

H&E staining or hematoxylin & eosin staining, is a popular staining method in histology. It is the most widely used stain in medical diagnosis and research.

Hito Hematoxylin Solution is designed on the principle of the Gill's Hematoxylin method and in three ready-to-use formulation.

- Hito Hematoxylin Solution - Single Strength
Recommended for cytological staining.
- Hito Hematoxylin Solution - Double Strength
Recommended for counterstaining of immunohistochemistry and routine Histology.
- Hito Hematoxylin Solution - Triple Strength
Recommended for histological staining of nuclei with shorter staining times.

Eosin Y is the most commonly used cytoplasmic stain, but Alcoholic Eosin Solutions are HIGHLY FLAMMABLE and HARMFUL, **Hito Eosin-Y Aqueous Solution** is a water base solution for fast and safe usage.

Hito HE-Diff Solution is water based and used for Hematoxylin staining differentiation.

The tap water in the traditional method is replaced by **Hito modified Scott's Tap Water Substitute**, which enables bluing up in a much shorter time and avoids tissue sections falling off from the slides.

For photo samples, please visit our web site at
www.hitobiotec.com

II. Reagents

Store the solutions at room temperature

Reagents	Catalog No.	Volume
Hito Hematoxylin Solution Single Strength	HTSHS0111-1	500 ml
Hito Hematoxylin Solution Double Strength	HTSHS0111-2	500 ml
Hito Hematoxylin Solution Triple Strength	HTSHS0111-3	500 ml
Hito Eosin-Y Aqueous Solution	HTSHS0112	500 ml
Hito HE-Diff Solution	HTSHS0113	250 ml
Hito Modified Scott's Tap Water Substitute 5xConcentrate	HTSHS0106	250 ml
Hito HE Stain Set	HTKGS1102	Set
• Hito Hematoxylin Solution -Triple Strength	• HTSHS0111-3	• 500 ml
• Hito Eosin-Y Aqueous Solution	• HTSHS0112	• 500 ml
• Hito HE-Diff Solution	• HTSHS0113	• 250 ml
• Hito Modified Scott's Tap Water Substitute 5xConcentrate	• HTSHS0106	• 250 ml



Note

Before using the Stains, please make sure you have the following **Required Equipment / Materials** in your lab (not included in the kit):

1. Cryostat or Microtome, Light microscope
2. Ethanol, xylene, double distilled or deionized water
3. Slides, Coverslips
4. Staining jars
5. Resinous mounting medium

III. Solutions Preparation

1. Hito Hematoxylin Solutions are Ready-To-Use Solutions.
2. Hito Eosin-Y Aqueous Solution is Ready-To-Use Solution.
3. Hito HE-Diff Solution is Ready-To-Use Solution.
4. Hito Modified Scott's Tap Water Substitute 5x Concentrate is prepared by diluting 1 part of Hito Modified Scott's Tap Water Substitute 5xConcentrate with 4 parts of deionized water.

IV. Precautions:

1. Normal precautions exercised in handling laboratory reagents should be followed.
2. Dispose of waste observing all local, state, provincial or national regulations. Refer to Material Safety Data Sheet for any updated risk, hazard or safety information.
3. The solutions are harmful. Harmful if swallowed. Irritating to eyes, respiratory system and skin. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Handle with gloves and wear suitable protective clothing.

V. Staining Procedure

1. Deparaffin / defat and rehydrate the sections by placing the slides in xylene, 100% ethanol, 95% ethanol, 75% ethanol, 50% ethanol and then in double distilled water with 2 changes in each solvent, and 3 minutes during each change.
2. Stain in Hito Hematoxylin Solution-Triple Strength for 1-5 minutes depending on the desired intensity.
3. Rinse slides in Tap water for 1 minute.
4. Rinse slides in diluted Hito Modified Scott's Tap Water Substitute for 1 minute.
5. Rinse slides in distilled water for 1 minute.
6. Differentiate with Hito HE-Diff Solution, 5-12 dips.



Note

Differentiation should be carefully performed and requires some practical experience to ascertain the correct end-point, check under microscope and if over differentiated, return to Step 2.

7. Rinse slides in distilled water for 1 minute.
8. Rinse slides in diluted Hito Modified Scott's Tap Water Substitute for 1-3 minutes.
9. Rinse slides in distilled water for 1 minute.
10. Stain in Hito Eosin-Y Aqueous Solution for 30 seconds - 3 minutes.
11. Rinse briefly in 75% ethanol.
12. Place slides in 95% ethanol 2 times, 5-30 seconds each.
13. Place slides in 100% ethanol 2 times, 3 minutes each.
14. Clear in xylene, 2 times, 3 minutes each, and apply coverslip over sections using xylene based resinous mounting medium.
15. Allow to dry. The slide can be viewed after drying by bright field microscopy.

VI. Material safety data sheet (MSDS)

Date Updated: 12/11/2017
Version 1.3

1. Product and Company Information

Product Name and Product No. Hito HE Stain Set - HTSHS0114
Hito Hematoxylin Solution - HTSHS0111
Hito Eosin-Y Aqueous Solution - HTSHS0112
Hito H-Diff Solution - HTSHS0113
Hito Modified Scott's Tap Water Substitute
(5xConcentrate) - HTSHS0106

Brand Hitobiotec

Company Address Hitobiotec Corp.
P.O.Box 7528
Kingsport, TN 37664
USA

Technical Phone: 423-520-6880

Emergency Phone: 423-520-6880

2. Composition and Information on Ingredient

Substance Name	CAS #	SARA 313
Hito HE Stain Set	None	No
Ingredient Name	CAS #	SARA 313
WATER	7732-18-5	No
Eosin-Y	241-409-6	No
Hematoxylin	517-28-2	No
Ethylene glycol	107-21-1	No
Aluminium sulphate hexadecahydrate	16828-11-8	No
Magnesium sulfate	10034-99-8	No
PROPRIETARY COMPONENT(S)	none	No

3. Hazards Identification

EMERGENCY OVERVIEW

Harmful if swallowed. Causes skin irritation. Causes eye irritation. May cause respiratory irritation

HMIS RATING

HEALTH: 1 FLAMMABILITY: 0 REACTIVITY: 0

NFPA RATING

HEALTH: 1 FLAMMABILITY: 0 REACTIVITY: 0

Potential Health Effects

Inhalation May be harmful if inhaled. Causes respiratory tract irritation.

Skin May be harmful if absorbed through skin. Causes skin irritation.

Eyes Causes eye burns, eye irritation.

Ingestion Causes burns if swallowed.

4. FIRST AID MEASURES**General advice**

Consult a physician. Show this safety data sheet to the doctor in attendance.
Move out of dangerous area.

If inhaled

If breathed in, move person into fresh air. If not breathing give artificial respiration

In case of skin contact

Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Consult a physician.

In case of eye contact

Continue rinsing eyes during transport to hospital. Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIRE-FIGHTING MEASURES**Flammable properties**

Flash point no data available

Ignition temperature no data available

Suitable extinguishing media

Use water spray, dry chemical or carbon dioxide.

Special protective equipment for fire-fighters

Wear self contained breathing apparatus for fire fighting if necessary.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

Use personal protective equipment. Avoid dust formation. Avoid breathing dust. Ensure adequate ventilation. Evacuate personnel to safe areas.

Environmental precautions

Do not let product enter drains.

Methods for cleaning up

Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Handling

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

Storage

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

no data available

Personal protective equipment

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multipurpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Eye protection

Safety glasses with side-shields conforming to EN166

Hygiene measures

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace. Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form liquid

Safety data

pH no data available

Melting point no data available

Boiling point no data available

Flash point no data available

Ignition temperature no data available

Lower explosion limit no data available

Upper explosion limit no data available

Water solubility no data available

10. STABILITY AND REACTIVITY

Storage stability

Stable under recommended storage conditions. Avoid Light.

Materials to avoid

no data available

Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Sulphur oxides, Aluminum oxide

11. TOXICOLOGICAL INFORMATION

Acute toxicity no data available

Irritation and corrosion no data available

Sensitisation no data available

Signs and Symptoms of Exposure

no data available

Potential Health Effects

Inhalation May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.

Skin Causes skin burns.

Eyes Causes eye burns.

Ingestion Toxic if swallowed.

12. ECOLOGICAL INFORMATION

Elimination information (persistence and degradability)

no data available

Ecotoxicity effects

no data available

Further information on ecology

no data available

13. DISPOSAL CONSIDERATIONS

Product

Observe all federal, state, and local environmental regulations. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)

Not dangerous goods

IMDG

Not dangerous goods

IATA

Not dangerous goods

15. OTHER INFORMATION

Further information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Hitobiotech, Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. Read Terms & Conditions page on our website for additional terms and conditions of sale.

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