Ethyl Bromide Scavenger EB Erasol

Cat: E1027
Storage: RT, Valid for 1 year.

Kit Components:

Kit Components	Size
Solution A	100mL
Solution B	200mL

Introduction:

This product can effectively destroy the molecular structure of EB by reacting with the amino group in Ethidium bromide (EB) molecule and disconnecting the nitrogen heterocyclic ring in EB molecule, so as to a chieve the purpose of removing EB pollution. It is suitable for removing EB pollution from solution and surface of objects. The main features are as follows:

1. It can eliminate the fluorescence of EB and reduce its mutagenicity by more than 99%.
2. A wide range of applications, can be used in EB contaminated water, cesium chloride solution, electrophoresis buffer (TAE, TBE, MOPS, etc.), organic solvents (ethanol, isopropyl alcohol, isoamyl alcohol, isobutanol, etc.) and contaminated surfaces of various objects (glass, stainless steel, plastic, floor, UV filters, etc.).
3. It is simple, convenient and fast to use.
4. Colorless or light yellow transparent liquid, non-toxic but corrosive and pungent odor.
5. This product should not be exposed to the air for too long. After use, please seal it immediately and store it in a ventilated place away from light.

Protocols (only for reference):

One: Remove EB from water-soluble solutions such as water, Tris, MOPS, cesium chloride, etc

1. Dilute the solution with water so that its EB concentration is below 1mg/mL (if the EB concentration is already below 1mg/mL, proceed directly to the next step).
2. Add solution A and solution B to the solution one by one in the ratio of solution A: solution B: contaminated solution =1:2:100 (since the solution will produce a small amount of harmful gases at the beginning of mixing, the whole operation must be handled carefully in the chemical fume hood). Stir for five minutes.
3. Let sit at room temperature for 20h, neutralizing it with your own solution of saturated sodium bicarbonate to make it pH neutral.
4. Check the level of removal and discard the waste liquid.

Two: Remove EB from caesium-chloride-saturated isopropyl alcohol

1. Dilute the cesium chloride-saturated isopropyl alcohol solution with water so that its EB concentration is below 1mg/mL (if the EB concentration is already below 1mg/mL, proceed directly to the next step).
2. Add the freshly prepared EB Erasol working liquid (see preparation method 5) into the cesium chloride saturated isopropyl alcohol solution: EB Erasol working liquid=1:4 and stir at room temperature for 20h.
3. Neutralize with your own saturated sodium bicarbonate solution so that the pH of the solution is neutral.
4. Check the level of removal and discard the waste solution.

Three: Remove EB from isoamyl alcohol and butanol

1. Dilute the solution with water so that its EB concentration is below 1mg/mL (if the EB concentration is already below 1mg/mL, proceed directly to the next step).
2. Add freshly prepared EB Erasol working liquid (see preparation method 5) at the ratio of solution: EB Erasol working liquid =1:4. The solution is divided into two phases and stirred at room temperature for 72h.
3. Add your own activated carbon at the ratio of 2 grams of activated carbon to 100mL of the mixture, and stir for another 30min.
4. Filter to remove activated carbon. Neutralize the liquid with saturated sodium bicarbonate to make the pH neutral.

5. Check the level of removal and discard the liquid waste.

Four: Remove EB from the surface of the object

1. Scrub the contaminated area on the surface of the object 5 times with a paper towel soaked in fresh EB Erasol working liquid (see preparation method 5), replacing it with a new paper towel each time. Since the working liquid has a pH of 1.8, if the surface of the object is not acid-resistant (such as glass, stainless steel, floor, etc.), proceed directly to the second step of the operation. But the general ultraviolet transmission filter can be treated directly with the working liquid.
2. Then use the paper towel soaked in water to scrub the contaminated surface of the object 5 times, and replace the new paper towel each time.
3. Use ultraviolet lamp to check the cleaning effect, if no EB fluorescence can be seen, you can proceed to the next step. If there is still visible EB fluorescence, repeat the second step. (For the polluted place that is not convenient to directly irradiate with ultraviolet lamp, the solution in the paper towel can be extruded and placed under the ultraviolet lamp to compare the strength of the fluorescence, the fluorescence will gradually weaken).
4. Air dry the surface of the cleaned object. Soak the used paper towel in EB Erasol working solution and let it sit for at least an hour to degrade EB.
5. Discard the paper towels. Neutralize the work fluid with your own saturated sodium bicarbonate solution to make it pH neutral.
6. Check the level of removal and discard the waste liquid.

Five: Preparation of fresh EB Erasol working fluid

1. Estimate the amount of working fluid to be used.
2. Add water, solution A, and solution B successively in the chemical fume hood in the ratio of solution A: solution B: water =1:2:30 to a suitable sized container and stir at room temperature for 10min to mix (the whole operation must be done carefully in the chemical fume hood due to the small amount of harmful gases produced during preparation).
3. Immediately apply the freshly prepared working liquid as per the various conditions above. Users should wear gloves and rinse with running water immediately after splashing on the skin.

Note:

1. Depending on usage, users may need to bring their own saturated sodium bicarbonate and activated carbon.
2. This product is not toxic, but the reagent itself and operation may produce irritating and corrosive substances, need to wear gloves in a ventilated place operation.

Related Products:

E1020 Red fluorescent nucleic acid dye
T1060 50×TAE buffer
SA1020 Nucleic acid sedimentation aid
G8140 Green fluorescent nucleic acid dye (10000×)
G8142 GoldView Type II nucleic acid dtain (5000×)
M1400 1kb DNA Ladder

Related Literature:

[1] Xinrui Zhao, Fufu Zheng, Yizhuo Li,et al. BPTF promotes hepatocellular carcinoma growth by modulating hTERT signaling and cancer stem cell traits. Redox Biology. July 2018. (IF 7.126)
[2] Xiaohua Xi, Ruyan Wan, Peijin Wang,et al. Toxicity of imidazoles ionic liquid [C16mim]Cl to Hela cells. Ecotoxicology and Environmental Safety. October 2018; 408-414. (IF 3.974)
[3] Qiang Zhang, Xinhuai Zhao, Zhujun Wang,et al. Flavones and flavonols exert cytotoxic effects on a human oesophageal adenocarcinoma cell line (OE33) by causing G2/M arrest and inducing apoptosis. Food and Chemical Toxicology. June 2008; 2042-2053. (IF 3.977)

Note: For more information about this product, please refer to the Solarbio website.