Uranyl Acetate Stain in Maleate Buffer (*en bloc*)

Warning: Uranyl acetate is toxic and radioactive. A discussion of the safe handling of this material can be found here.

Materials required
Sodium Hydroxide (2N, Electron Microscopy Sciences (EMS), CAT #21170)
Maleate Acid (EMS, CAT # 18150)
Uranyl Acetate (EMS, CAT # 22400)
Distilled Water

Stock Solution
0.2N Sodium Hydrogen Maleate
For 250 ml:
1. Dissolve 5.8g of maleic acid in 50ml of 1N sodium hydroxide.
2. Dilute to 250ml with distilled water.

Procedure
For 800 ml:
1. To 107.6 ml 0.2 N sodium hydroxide
2. Add 200 ml 0.2 N NaH maleate (prepared above)
3. Dilute to near 800 ml with distilled water. Verify that the pH = 6.0 and adjust as necessary, then qc to 800ml.
4. Add 8g uranyl acetate to make a 1% stain solution.
5. Used to stain tissues after post-fixation by Osmium Tetroxide (described here).

Alternate Procedure
For 800ml:
1. Add 8g uranyl acetate to 800ml 0.2M Tris Maleate Buffer (pH 5.15, EMS, CAT # 11740).

Adapted from: Temple, J. (1929) Sodium Maleate-A Buffer for the P_H Region of 5.2 to 6.8. J. Am. Chem. Soc. **51**(6): 1754-1755.

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