**UW Medicine - Pathology**

400-03-01-05

McIlvaine's Buffer Procedure

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| Adopted Date: 09/04/91  Review Date: 06/12/09  Revision Date: 04/29/11 |

PURPOSE

To make McIlvaine's buffer for use on clinical specimens in the Cytogenetics and Genomics Laboratory

PROCEDURE

### Material and Equipment

* + - 1. Balance
      2. pH meter

### Reagents and Solutions

* + - 1. Citric acid, monohydrate, H3C6H5O7 (Baker Cat. #0018-01).
      2. Sodium phosphate, dibasic, anhydrous, Na2HPO4 (Baker Cat. #3828‑01).
      3. Distilled H2O (dH2O).
      4. Solution A:

(0 .1 mol/L citric acid). Dissolve 21.0 g of citric acid in dH2O. Adjust final volume to 1 liter with dH2O. This solution should be autoclaved and stored at 4°C. Expires in 1 yr in refrigerator.

* + - 1. Solution B:

(0.2 mol/L disodium phosphate). Dissolve 28.4 g of sodium phosphate, dibasic, in dH2O. Adjust final concentration to 1 liter with dH2O. This solution should be autoclaved and stored at 4°C. Expires in 1 yr in refrigerator.

### Procedure

* + - 1. For 100 ml of working buffer at various pH, mix the following amounts of solutions A and B:

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| --- | --- | --- |
| pH | Solution A | Solution B |
| 4.1 | 60.0 ml | 40.0 ml |
| 4.4 | 55.9 ml | 44.1 ml |
| 5.5 | 43.1 ml | 57.9 ml |
| 7.0 | 18.1 ml | 81.9 ml |
| 7.5 | ~15 | ~15 |

* + - 1. The pH should be checked after mixing and may be adjusted lower or higher by adding small amounts of solutions A or B, respectively.
      2. These solutions should be watched carefully for bacterial growth. Expire in 1 yr in refrigerator.

REFERENCES

1. McIlvaine TC, J. *Biol.Chem.* 49:183, 1921

Written By: Director Approval:

(Signature and Date) (Signature and Date)

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Cytogenetics Supervisor