

10X Citrate Buffer *pH 6.0*

Catalog number: 10000
Unit size: 100 mL

Component	Storage	Amount (Cat No. 10000)
10X Citrate Buffer *pH 6.0*	Refrigerated (2-8 °C)	100 mL

OVERVIEW

A citrate buffer is an aqueous solution composed of a weak acid (citric acid) and its conjugate base (sodium citrate). It is sometimes called a citric acid buffer, sodium citrate buffer, or citric acid-sodium citrate buffer. Citric acid is a polyprotic acid with three pKa's at 3.13, 4.76, and 6.40. It has a buffering range between pH 3.0 to 6.2. (Dawson 2002, Nozawa 1995).

Heat-Induced Epitope (Antigen) Retrieval (HIER) techniques are a common application that uses a citrate buffer. These techniques help regain lost antigenicity that may occur in formalin-fixed paraffin-embedded (FFPE) tissue. During fixation, formalin and other aldehyde compounds are hypothesized to create protein crosslinks with antigenic sites in tissue specimens, resulting in conformational changes that mask these epitopes leading to poor downstream detection during fluorescence in situ hybridization (FISH) or immunohistochemistry (IHC). Applying HIER, which uses heat treatment in citrate buffer (0.01 - 0.1 M), aldehyde crosslinks formed during fixation are theorized to be reduced, restoring lost antigenicity and improving downstream detection and signal quality. (Krenacs 2010).

1. Dawson, Rex Malcolm Chaplin, et al. Data for biochemical research. Vol. 3. Clarendon press, 2002.
2. Krenacs, Laszlo, et al. "Heat-induced antigen retrieval for immunohistochemical reactions in routinely processed paraffin sections." Immunocytochemical Methods and Protocols. Humana Press, 2010. 103-119.
3. Nozawa, S. R., et al. "Mind the buffering capacity of citric acid." Fungal Genetics Newsletter 42 (1995): 56.

AT A GLANCE

Storage

2-8°C. DO NOT FREEZE

Intended Use:

1X buffer solution is intended for heat-induced antigen retrieval in IHC. Please refer to the primary antibody protocol.

Reagent

10X, pH 6 Citrate Buffer.

PREPARATION OF WORKING SOLUTION

Dilute 10X buffer as needed (e.g., 10 mL of 10X Citrate buffer + 90 mL of distilled water), and mix well.

Note: 1X citrate buffer can be stored at 2-8°C.

EXAMPLE DATA ANALYSIS AND FIGURES

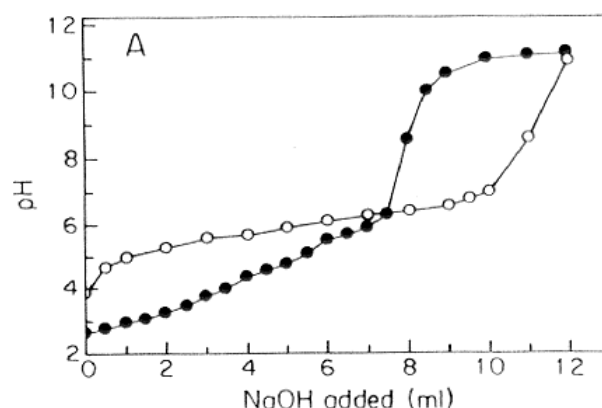


Figure 1. Titration curves of 5 mM citric acid (50 ml) with 100 mM NaOH (●) and 20 mM MES (50 ml) with 100 mM NaOH (○) (Nozawa 1995).

DISCLAIMER

AAT Bioquest provides high-quality reagents and materials for research use only. For proper handling of potentially hazardous chemicals, please consult the Safety Data Sheet (SDS) provided for the product. Chemical analysis and/or reverse engineering of any kit or its components is strictly prohibited without written permission from AAT Bioquest. Please call 408-733-1055 or email info@aatbio.com if you have any questions.