Jun 03, 2020

Citrate-Phosphate Buffer

In 1 collection

Neilier Junior[1]

[1]Universidade Federal de Viçosa

1 Works for me dx.doi.org/10.17504/protocols.io.bfydjps6

Neilier Junior
Universidade Federal de Viçosa

ABSTRACT

A buffer solution has the function of resisting changes in pH even when adding powerful acids or bases. However, in the physiological environment the buffered system also provides cofactors for enzymatic reactions, critical salts and even essential nutrients for cells and tissues. Therefore, when trying to reproduce biological conditions in vitro, we must make the appropriate choice of the buffer. After all, it will provide the appropriate medium in which reactions will occur.

MATERIALS TEXT

- Deionized Water
- pH Meter (sensitive)
- Citric Acid
- Dibasic Sodium Phosphate (dihydrate and heptahydrate)

SAFETY WARNINGS

Wear personal protective equipment: gloves, lab coat and mask.

BEFORE STARTING

Organize your workspace.

Make sure all solutions and equipment are available.

Citrate-Phosphate Buffer

1

pH range: pH **2.6** to pH **7.0**

(a) 0.1 M Citric acid; 19.21 g L^{-1} (M.W. 192.1 g mol^{-1})
(b) 0.2 M Dibasic sodium phosphate; 35.6 g L^{-1} (dihydrate; M.W. 178.0 g mol^{-1}) or 53.6 g L^{-1} (heptahydrate; M.W. 268.0 g mol^{-1})

Mix citric acid and sodium phosphate solutions in the proportions indicated and adjust the final volume to **100 ml** with deionized water.

mL of Citric acid	44.6	39.8	35.9	32.3	29.4	26.7	24.3	22.2	19.7	16.9	13.6	6.5
mL of Sodium phosphate	5.4	10.2	14.1	17.7	20.6	23.3	25.7	27.8	30.3	33.1	36.4	43.6
pH	2.6	3.0	3.4	3.8	4.2	4.6	5.0	5.4	5.8	6.2	6.6	7.0

Citation: Neilier Junior (06/03/2020). Citrate-Phosphate Buffer. https://dx.doi.org/10.17504/protocols.io.bfydjps6

2 Adjust the final pH using a sensitive pH meter

Citation: Neilier Junior (06/03/2020). Citrate-Phosphate Buffer. https://dx.doi.org/10.17504/protocols.io.bfydjps6