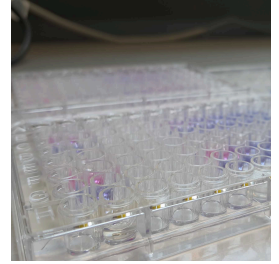


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0.1 M Potassium Phosphate Buffer pH 7.4

DOI

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Protocol status: Working

We use this protocol and it's working

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Protocol Integer ID: 112733

Keywords: Potassium Phosphate Buffer, potassium phosphate buffer, buffer, AlamarBlue, potassium phosphate, QC, potassium phosphate buffer, gomori buffer, phosphate, dibasic monohydrogen phosphate, buffer, monobasic dihydrogen phosphate, combination of monobasic dihydrogen phosphate, high buffering range, dibasic monohydrogen phosphate in an aqueous solution¹, ph, salt, aqueous solution¹

Abstract

Potassium phosphate buffers, sometimes referred to as "Gomori buffers" are a combination of monobasic dihydrogen phosphate and dibasic monohydrogen phosphate in an aqueous solution¹. It has a high buffering range, which can be shifted by adjusting the amount of either one of the phosphate salts.¹

This buffer is described by Bio-Rad as component required for the Quality Control (QC) check of their AlamarBlue product (Catalog Nr. BUF012A). For more information on how to use it, check their manual (accessed 2022).



AlamarBlue_Manual_Biorad.pdf 509KB

Image Attribution

Exotoxins Lab (CC-BY-SA 4.0)

Guidelines

- As good microbiological practice, all containers used for components should be labeled with the name of the solution, the date of creation / aliquot, and initials of the person who did it, in order to ask questions if something is needed.
- If you have doubts about how to perform a step in the protocol, consult your supervisor or someone who has prepared the solution before.
- For any questions, feel free to email us (exotoxinslab-(at)- gmail.com). We are more than happy to help you.
- Some of the protocols will be posted in our YouTube channel (www.youtube.com/@exotoxinslab).



Materials


1.  Potassium phosphate dibasic **Merck MilliporeSigma (Sigma-Aldrich) Catalog #1051041000** (mw: 174.18 g/mol)
2.  Potassium dihydrogen phosphate **Merck MilliporeSigma (Sigma-Aldrich) Catalog #1048731000** (mw: 136.09 g/mol)
3.  double distilled water (ddH₂O) When using double distilled water, we use only water with equal or less than 0.055 μ S/cm.
4.  Potassium hydroxide (KOH) **Merck MilliporeSigma (Sigma-Aldrich) Catalog #484016**

Protocol materials

-  Potassium phosphate dibasic **Merck MilliporeSigma (Sigma-Aldrich) Catalog #1051041000**
-  Potassium dihydrogen phosphate **Merck MilliporeSigma (Sigma-Aldrich) Catalog #1048731000**
-  Potassium phosphate dibasic **Merck MilliporeSigma (Sigma-Aldrich) Catalog #1051041000**
-  Potassium dihydrogen phosphate **Merck MilliporeSigma (Sigma-Aldrich) Catalog #1048731000**
-  double distilled water (ddH₂O)
-  Potassium hydroxide (KOH) **Merck MilliporeSigma (Sigma-Aldrich) Catalog #484016**
-  Potassium hydroxide (KOH) **Merck MilliporeSigma (Sigma-Aldrich) Catalog #484016**

Troubleshooting

Safety warnings


-  Careful: Potassium Hydroxide is a strong base. Use your Protective Personal Equipment when handling this substance.
- Potassium phosphate buffers inhibit enzymatic reactions by sequestering divalent cations such as calcium and magnesium.¹

Before start

1. Be aware of your lab's safety protocols and check the attached Warnings (Guidelines and Warnings) to see what steps are necessary to protect yourself, such as protocol-appropriate personal protective gear, like lab coat, gloves and glasses.
2. Make sure to read the whole protocol before starting and have all the materials at hand.



0.1 M Potassium Phosphate Buffer pH 7.4

1 Prepare  400 mL of dH₂O in a measuring cylinder. Add a magnetic mixing rod to the cylinder.

2 Add  6.059 g of



Potassium phosphate dibasic **Merck MilliporeSigma (Sigma-Aldrich) Catalog #1051041000**


to the water and start to mix using a magnetic plate to move the mixing rod and solution of the substance.

3 Add  2.07 g of




Potassium dihydrogen phosphate **Merck MilliporeSigma (Sigma-Aldrich) Catalog #1048731000**

to the solution. Keep stirring until both substances have dissolved completely.

4 Measure the pH. If necessary, use a solution of  1 Molarity (M)



Potassium hydroxide (KOH) **Merck MilliporeSigma (Sigma-Aldrich) Catalog #484016**

to raise the pH to  7.4 . Add distilled H₂O until the volume is 0.5 L. Transfer the solution to a bottle and store at room temperature. If needed, it can be sterile filtrated.

Note

We achieved the desired pH of 7,39 by carefully adding to the solution approx. 5 ml of 1 M Potassium Hydroxide under stirring. This value can change depending of your water source and chemicals used. Careful: Potassium Hydroxide is a strong base. Use your Protective Personal Equipment when handling this substance.



Protocol references

<https://www.aatbio.com/resources/buffer-preparations-and-recipes/potassium-phosphate-ph-5-8-to-8-0>,
October 27th, 2022 (accessed November 2024)

<https://www.unl.edu/cahoonlab/phosphate%20buffer.pdf> (accessed November 2024)