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Tris-Buffered Saline (TBS)

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ABSTRACT

Tris-buffered saline (TBS) is a buffer used in certain biochemical techniques to keep the pH within a limited range. This formulation has an approximate sodium chloride concentration of 150 mM and a tris concentration of 50 mM. The pH of the buffer is adjusted to 7.6. TBS is frequently formulated with a detergent such as Tween-20 for staining applications such as Western blotting. As a surfactant, Tween-20's function is to dissolve the surface tension between the membrane and the solution, ensuring complete membrane surface area wetting.

MATERIALS

Bottles
Canonical tubes
Scale
Magnetic mixer
Refrigerator
Freezer

OPEN ACCESS

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Protocol status: Working
We use this protocol and it's working

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81920

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1 000 mL 25xTBS


1 Fill  800 mL distilled water in a bottle

2m

- 2 Measure and add: 10m
- 150 g Trizma Base ($\text{NH}_2\text{C}(\text{CH}_2\text{OH})_3$; 121.14 g mol⁻¹)
 - 220 g Sodium Chloride (NaCl; 58.44 g mol⁻¹)
- Reagents:
- Trizma base Merck MilliporeSigma (Sigma-Aldrich) Catalog #T1503
- Sodium chloride Merck MilliporeSigma (Sigma-Aldrich) Catalog #S9625
- 3 Adjust to pH 7.6 with 12N hydrochloric acid 1m
- Reagents:
- Hydrochloric acid Merck MilliporeSigma (Sigma-Aldrich) Catalog #H1758
- 4 Fill bottle to 1000 mL with distilled water 2m
- 5 Sterilize by autoclave for 00:40:00 40m
- 6 Aliquot in 40 mL units, and store at -20 °C 30m


1 000 mL 1xTBS

- 7 Fill 800 mL sterile water in a glass bottle 2m
- 8 Add 40 mL 25xTBS solution 2m

9 Mix solids completely, then adjust pH to  7.6 with 12N hydrochloric acid

1m

Reagents:

 Hydrochloric acid Merck MilliporeSigma (Sigma-Aldrich) Catalog #H1758



10 Fill bottle to  1000 mL with sterile water, and store at  4 °C

2m

100 mL TBS with 0.1% Tween-20 (TBST)



11 Fill  80 mL distilled water in a glass bottle

1m


12 Add  4 mL 25xTBS solution and  1 mL 10% Tween-20


3m

Note

Create a 10% solution in sterile water.  9 mL sterile water mixed with  1 mL Tween-20

Reagents:

 Tween-20 Merck MilliporeSigma (Sigma-Aldrich) Catalog #P9416

13 Mix solids completely, then adjust pH to  7.6 with 12N hydrochloric acid

1m

Reagents:

 Hydrochloric acid Merck MilliporeSigma (Sigma-Aldrich) Catalog #H1758


14 Fill bottle to  100 mL with distilled water

1m

15 Sterilize with a 0.22 micron filter, and store at  4 °C

1m

100 mL 5% Non-fat dry milk (NFDM) in 1xTBST

16 Measure  1 g Non-fat dry milk (NFDM) in a glass bottle

Reagents:

 Skim Milk Powder Merck MilliporeSigma (Sigma-Aldrich) Catalog #70166

17 Fill bottle to  100 mL with 1xTBST

18 Sterilize with a 0.22 micron filter, and store at  4 °C

19 Measure  1 g BSA in a glass bottle

Reagents:

 Bovine Serum Albumin Merck MilliporeSigma (Sigma-Aldrich) Catalog #A7906

20 Fill bottle to  100 mL with 1xTBST

21 Sterilize with a 0.22 micron filter, and store at  4 °C