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| Solution  | Preparation  |
| Tris buffer (0.1 M, pH 7.4) : | Dissolve 12.114 g of Tris in 50 ml distilled water, adjust pH with concentrated HCl to pH 7.4, add distilled water to make the total volume 1000 ml. |
| 9%Normal saline:  | Dissolve 1.8 g of NaCl in 200 ml distilled water.  |
| Tris-HCl buffer(0.01M, pH 8.6) : | Dissolve 0.1576 g of Tris base in 50 ml distilled water, adjust pH with concentrated HCl to pH 8.6 , add distilled water to make the total volume 100 ml. |
| 0.1 M acetic acid solution: | Add 8.8164g of acetic acid in 1000 ml of distilled water. |
| Acetate buffer(0.1M,pH 4). | Mix 420 ml of acetic acid and 0.615 g of sodium acetate, adjust the final volume to 500 ml with distilled water, adjust the final pH using pH meter. |
| Acetate buffer(0.1M,pH 5). | Mix 185 ml of acetic acid and 2.615 g of sodium acetate, adjust the final volume to 500 ml with distilled water, adjust the final pH using pH meter. |
| 1M Di-potassium hydrogen orthophosphate: | Dissolve 87.09 g of di-potassium hydrogen orthophosphate in 500 distilled water. |
| 1M Potassium dihydrogen orthophosphate: | Dissolve 68.045 g of potassium dihydrogen orthophosphate in 500 distilled water. |
| Potassium phosphate buffer(0.1M,pH 6). | Add 13.2 ml of 1M dipotassium hydrogen orthophosphate to 86.8 ml of potassium dihydrogen orthophosphate, adjust the final volume to 200 ml with distilled water, adjust the final pH using pH meter. |
| Potassium phosphate buffer(0.1M, pH 7). | Add 61.5 ml of 1M dipotassium hydrogen orthophosphate to 38.5 ml of 1M potassium dihydrogen orthophosphate, adjust the final volume to 200 ml with distilled water, adjust the final pH using pH meter.  |
| 5 mM NAD+ solution: | Dissolve 0.16 g of NAD+ in 50 ml distilled water. |
| 5 mM NADH solution: | Dissolve 0.16 g of NADH in 50 ml distilled water. |
| 22.7 mM Sodium pyruvate solution: | Dissolve 0.12g of sodium pyruvate in 50 ml distilled water. |
| 22.7 mM Sodium lactate solution: | Dissolve 0.1022 g of sodium lactate in50 ml distilled water.  |
| 18 mM Sodium Carbonate(Na2CO3) solution: | Dissolve 0.0953 g of NaCO3 in 50 ml distilled water. |
| 0.5 M Sodium Chloride (NaCl)solution: | Dissolve 1.461 g of NaCl in 50 ml of distilled water |
| Sodium Bicarbonate stock solution (18 mM NaCO3,0.5 M NaCl):  | Mix 5o ml of NaCO3 solution and 50 ml of NaCl solution together.  |
| 2 M urea solution: | Dissolve 0.0113g of urea in and make up to 50 of distilled water. |
| 0.2 mM oxalic acid solution :  | Dissolve 0.0018 g of oxalic acid and make up to 500 of distilled water . |
| 1.5M Tris-HCl (PH 8.8), 100ml | 18.15g of Tris base + 50ml distilled water + add Conc. HCl slowly to PH 8.8 (~3.2ml HCl)Allow solution to cool at room temp. PH will increase, add distilled water to make the total volume of 100ml. |
| 0.5M Tris-HCl (PH 6.8), 100ml: | 6.05g of Tris base + 5050ml distilled water + add Conc. HCl slowly to PH 6.8 (~7.4ml HCl)Allow solution to cool at room temp. PH will increase, add distilled water to make the total volume of 100ml. |
| 10% SDS: | Weight 10g SDS + add distilled water to make the total volume of 100ml |
| 50% glycerol, 100ml: | Pour 50ml 100% glycerol, then make the total volume 100 by adding 50ml distilled water |
| Electrophoresis buffer, Running buffer: | Weight 3g of Tris + 14.4g glycine +1g SDSThen add distilled water to make the total volume 1 liter |
| Acrylamide stake solution, 100ml: | Weight 30g acrylamide + 0.8g bisacrylamideThen add distilled water to make the total volume 100ml |
| 5X buffer, Sample buffer: | Weight 0.6ml 1M tris-HCl (PH 6.8) + 5ml 50% glycerol + 2ml 10% SDS + 0.5ml 2-mercaptoethanol + 1ml 1% bromophenol blue + 0.9ml distilled water, put it on steir then put it in folded tube with foil, then put it in the refrigerator for 5 days |
| 10% Ammonium persulfate, 5ml: *prepare fresh* | Weight 0.5g ammonium persulfate + 5ml distilled water |
| Commasie blue, Staining solution for gel: | Weight about 1g commasie blue + 450ml methanol + 450ml distilled water + 100ml acetic acid |
| Commasie blue, Destaining solution for gel: | 100ml methanol + 100ml acetic acid + 800ml distilled water |