

TNE Buffer (10×)

T1374038

Storage: 2-8°C.

Introduction:

Composed mainly of Tris, NaCl, and EDTA, this reagent is therefore abbreviated as TNE Buffer. It is primarily used for the quantification of RNA and DNA via absorption and fluorescence spectroscopy. As long as the effects of contaminants and buffer components are considered, absorption measurement is a straightforward and simple method, while fluorescence analysis is less susceptible to interference than A_{260} (absorbance at 260 nm) measurement.

Operating Procedure:

1. Dilute the 10×TNE Buffer (pH 7.4) to 1× concentration using deionized water.
2. Pipette 1 mL of 1×TNE Buffer into a quartz cuvette, place it in a single-beam or double-beam spectrophotometer, and measure the absorbance at 352 nm to zero the instrument. This blank solution serves as a reference for double-beam instruments. For single-beam spectrophotometers, remove the blank cuvette, insert the quartz cuvette containing the DNA sample or standard, and record the absorbance. Repeat this process at 280 nm (for proteins), 260 nm (for nucleic acids), and 230 nm (for peptides, phenols, and urea).
3. Substitute the A_{260} (absorbance at 260 nm) reading into the equation to calculate the nucleic acid concentration (C). (The formula is relatively complex, so Step 4 is generally used instead for calculation.)
4. Estimate the purity of the nucleic acid sample using the A_{260}/A_{280} ratio and the absorbance values at 230 nm and 325 nm. A ratio of 1.8–1.9 indicates high-purity DNA, while a ratio of 1.9–2.0 indicates high-purity RNA.

Friendly Reminder:

For your personal safety, please take protective measures before using the reagent, such as wearing a lab coat and gloves.