Deoxyribonucleic Acid(DNA), Sodium Salt from Salmon Testes

(This product was formerly listed as Type III)

Storage Temperature : 2–8°C

CAS RN : 438545-06-3

Synonyms : DNA, Salmon Testes DNA, Salmon Sperm DNA

Product Description

Deoxyribonucleic acid (DNA) is a long double-helical molecule containing genetic information. DNA is a double-stranded (ds) molecule. Each strand is composed of an ordered combination of four nucleotides, each nucleotide consisting of a purine or pyrimidine base (adenine, guanine, thymine or cytosine) associated with a deoxyribose sugar molecule and a phosphate group.

Sperm cells from salmon testes are a good source for non-mammalian DNA. The species of salmon used is *Oncerhynchus keta.* The isolation process for salmon testes DNA is a proprietary modification of the procedure described in Methods in Enzymology, vol. III, 696 (1957). The tissue is homogenized in water, followed by extraction in saturated sodium chloride, filtration and precipitation.

The %G-C content for DNA from salmon testes is reported to be 41.2%. The T_m (melting temperature) is reported to be 87.5°C in 0.15 M sodium chloride plus 0.015M sodium citrate.

The molecular weight (MW) has not been determined. In general, the reference J.A.C.S., vol. 118, 10679 (1996), reports the molecular weight to be 1.3 million or around 2,000 base pairs.

Preparation Instructions

DNA solutions may be prepared by dissolving the thread-like lyophilized material in water or buffer. TE buffer (10 mM Tris, pH 8.0, 1 mM EDTA) is commonly used to prepare DNA solutions. Solubility in water at 2 mg/ml yields a clear to hazy solution.

Storage/Stability

Store lyophilized at 2-8°C. After reconstitution, store at -20°C. The lyophilized material is assigned a shelf life of 5 years.

Procedure

DNA for using in hybridization:

A non-relevant source of DNA, such as salmon testes DNA, is often included in hybridization solutions at a concentration of 100 µg/ml to help reduce background. DNA is dissolved and then reduced in size either by sonication or by shearing by passage through a needle.

The DNA may be dissolved in autoclaved or molecular biology grade water (nuclease free) at a concentration of 10 mg/ml. The solution will need to be stirred for at least 2-4 hours at room temperature to dissolve the DNA. Physically cutting the DNA into smaller pieces may help decrease the time needed for dissolution. Solutions of concentrated DNA will be very viscous. Shearing the DNA will help to reduce the viscosity by passing the DNA solution rapidly 12 times through a 17-gauge needle or once through a 23-gauge needle. If sonication is used, the DNA is sonicated until it has the consistency of milk. Samples of the DNA may be monitored by agarose gel electrophoresis to achieve the desired size. Prior to use in hybridization, the DNA is denatured by boiling for 10 minutes and then stored at -20°C until use.

Estimation of DNA concentration in solution:

The concentration of a DNA solution may be estimated spectrophotometrically at A_{260} using a quartz microcuvette. It may be necessary to dilute a portion of the sample to obtain an accurate absorbance measurement. One A_{260} absorbance unit corresponds to 50 µg dsDNA. Each lot of ASNA-99 will yield at least 15 A_{260} absorbance units/mg solid.

Precautions and Disclaimer

For Laboratory Use Only. Not for other uses.