

within experimental error. For single-stranded DNA in solution, the half-life of an individual cytosine residue is about 200 years at 37 °C and pH 7.4. In such DNA, loss of purine residue occurs at a similar or slightly slower rate. In contrast to depurination, however, the double helix structure affords very good protection against hydrolytic cytosine deamination, and this reaction occurs at only 0.5–0.7% of the rate of single-stranded DNA, that is, with a half-life of about 30,000 years for each cytosine residue.