DNA (deoxyribonucleic acid) exists, most commonly, as two intercoiled double strands (known as a double helix) that are supported by a sugar backbone and are linked via hydrogen bonds between the four bases (guanine, cytosine, adenine and thymine). Molecules (ligands) can interact with DNA via electrostatically binding, covalently binding or intercalating which occurs when ligands insert themselves within the double helix, specifically between the bonded base pairs. Intercalated DNA generally contains aromatic, planar ligands, such as ethidium bromide, proflavine, daunomycin or doxorubicin, whose presence prevents base pair bonding, distorts DNA structure and, ultimately, inhibits DNA replication. DNA intercalators are often used in the treatment of rapidly growing cancer cells, such as those in Hodgkin’s lymphoma, as they effectively prevent cell replication and thus, slow cancer growth.

REFERENCES

RESEARCH USE
For research use only, not for use in diagnostic procedures.