

Effects of various carbohydrates in DNA protection from H₂O₂-induced damage

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Abstract

The effect of various carbohydrates in the protection of DNA(pGEM-3Zf plasmid DNA) from hydrogen peroxide(H₂O₂)-induced damage was analyzed with or without various mono-, di-, oligo-saccharides, sugar alcohol, and polysaccharides at 37°C and 50°C. With 0.34% (w/v) of various carbohydrates, the protection effects were ranged from 30% and 100%: Over 90% protection was obtained with branched maltooligosaccharides (sulfate- or iron- modified BMOS, BMOS-9 and -12), branched fructo- and glucooligosaccharides (BFOS, BGOS, sulfate-BGOS), modified dextrans (carboxyl methyl-, benzoyl, and/or sulfate dextran; CMDB, CMDBS), isomaltose, raffinose, isomaltosyl raffinooligosaccharides, amyloextrin, mannitol, and xylitol.

References

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