

EPR Detection of DNA Interaction with 3-Carboxy-proxyl-Labelled Recombinant Human Histone H1.3

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Abstract

© 2016, Springer Science+Business Media New York. Nitroxide spin labelling is exploited in electron paramagnetic resonance (EPR) spectroscopy to study biological interactions and analysis of conformational changes in protein structures. In our study, recombinant human histone H1.3 was modified by 3-carboxy-proxyl using carbodiimide/N-hydroxysuccinimide coupling. Resulting conjugate of histone H1.3 with the spin label preserved its DNA binding capacity and formed complexes with plasmid DNA. The changes in EPR signal of the spin label were revealed upon conjugate interaction with plasmid DNA. Our preliminary data show the possibility of DNA sensing with nitroxide spin labelled histone H1.3 by EPR spectroscopy.

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Keywords

Biosensing, Electron paramagnetic resonance, Nitroxide spin label, Plasmid DNA, Recombinant human histone H1.3

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