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Voltammetric and adsorption study of 4-nitrophenyl-triazole-labeled 2'-deoxycytidine and 7-deazaadenosine nucleosides at boron-doped diamond electrode

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Highlights

- redox labeled nucleic acid components are studied using voltammetry at a boron doped diamond (BDD) electrode for the first time
- 4-nitrophenyl triazole labeled 7-deazaadenosine (dA^{TRNO₂}) and 2'-deoxycytidine give well developed, peak-shaped signals in cyclic voltammetry due to –NO₂ reduction and –NHOH/NO redox pair
- the nucleoside conjugates and products of their electroreduction strongly and stably adsorb at polished BDD electrode, allowing application of *ex situ* voltammetric techniques
- anodic *ex situ* square wave voltammetry for NHOH/NO redox pair optimized
- competitive experiments using an electrochemically inactive analogue of the analytes were used to inspect their adsorption/desorption processes at the BDD electrode

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