

Accepted Manuscript

Title: Polymerase Bypass of N7-Guanine Monoadducts of Cisplatin, Diepoxybutane, and Epichlorohydrin

Authors: Jiayu Ye, Caitlin R. Farrington, Julie T. Millard

PII: S0027-5107(17)30174-4
DOI: <https://doi.org/10.1016/j.mrfmmm.2018.03.002>
Reference: MUT 11640

To appear in: *Mutation Research*

Received date: 19-10-2017
Revised date: 31-1-2018
Accepted date: 5-3-2018

Please cite this article as: Jiayu Ye, Caitlin R.Farrington, Julie T.Millard, Polymerase Bypass of N7-Guanine Monoadducts of Cisplatin, Diepoxybutane, and Epichlorohydrin, *Mutation Research/Fundamental and Molecular Mechanisms of Mutagenesis* <https://doi.org/10.1016/j.mrfmmm.2018.03.002>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.



Polymerase Bypass of N7-Guanine Monoadducts of Cisplatin, Diepoxybutane, and Epichlorohydrin

*Jiayu Ye, Caitlin R. Farrington, and Julie T. Millard**

Department of Chemistry, Colby College, Waterville, Maine 04901

Polymerase Bypass of N7-Guanine Monoadducts of Cisplatin, Diepoxybutane, and
Epichlorohydrin

*Corresponding Author. Tel.: +1 207 859 5757. Email address: jtmillar@colby.edu.

Highlights

- DNA adducts of cisplatin, diepoxybutane, and epichlorohydrin have relevance in cancer therapy and carcinogenesis.
- We investigated the integrity of DNA synthesis from templates containing N7-guanine monoadducts of these agents.
- Two bacterial polymerases and recombinant human polymerase β successfully bypassed the lesions, although with reduced rate of DNA synthesis.
- The polymerases did not show significant misincorporation near the lesion.
- The N7-guanine monoadducts, although the principal reaction products of these agents, do not appear to contribute significantly to the mutational spectra of cisplatin, DEB, and ECH.

ABSTRACT

DNA oligonucleotides containing site-specific N7-guanine monoadducts of cisplatin, diepoxybutane, and epichlorohydrin were used as templates for DNA synthesis by two bacterial

Download English Version:

<https://daneshyari.com/en/article/8455625>

Download Persian Version:

<https://daneshyari.com/article/8455625>

[Daneshyari.com](https://daneshyari.com)