Accepted Manuscript

Reduction of quinones and nitroaromatic compounds by *Escherichia coli* nitroreductase A (NfsA): Characterization of kinetics and substrate specificity

Benjaminas Valiauga, Elsie M. Williams, David F. Ackerley, Narimantas Čėnas

PII: S0003-9861(16)30569-0

DOI: 10.1016/j.abb.2016.12.005

Reference: YABBI 7411

To appear in: *Archives of Biochemistry and Biophysics*

Received Date: 20 June 2016

Revised Date: 9 December 2016

Accepted Date: 12 December 2016

Please cite this article as: B. Valiauga, E.M. Williams, D.F. Ackerley, N. Čėnas, Reduction of quinones and nitroaromatic compounds by *Escherichia coli* nitroreductase A (NfsA): Characterization of kinetics and substrate specificity, *Archives of Biochemistry and Biophysics* (2017), doi: 10.1016/j.abb.2016.12.005.

Reduction of quinones and nitroaromatic compounds by *Escherichia coli* nitroreductase A (NfsA): Characterization of kinetics and substrate specificity

Benjaminas Valiauga[a], Elsie M. Williams[b], David F. Ackerley[b], and Narimantas Čėnas[a]*

[a]*Institute of Biochemistry of Vilnius University, Mokslininkų 12, LT-08662 Vilnius, Lithuania;*

[b]*Victoria University of Wellington, School of Biological Sciences, Kelburn Parade, New Zealand.*

*Corresponding author, Fax 370-5-2729196, e-mail *narimantas.cenas@bchi.vu.lt*

Abbreviations used: $ArNO_2$, nitroaromatic compound; FAD, flavin adenine dinucleotide; FMN, flavin mononucleotide; k_{cat}, the apparent catalytic constant; k_{cat}/K_m, the bimolecular rate constant in the steady-state enzymatic reactions; NR, nitroreductase; Q, quinone; SOD, superoxide dismutase; TNT, 2,4,6-trinitrotoluene;

Running title: Quinone- and nitroreductase reactions of *E. coli* NfsA

Keywords: NfsA; Quinones; Nitroaromatic compounds; CB-1954; Bioreductive activation;