

Supplemental Information

Role of aldehydes in the toxic and mutagenic effects of nitrosamines

Lisa A. Peterson, Anna M. Urban, Choua C. Vu, Meredith E. Cummings, Lee C. Brown, Janel K. Warmka, Li Li, Elizabeth V. Wattenberg, Yesha Patel, Daniel O. Stram, and Anthony E. Pegg.

Table of Contents

p. S2: Table S1. Cytotoxicity and mutagenicity data obtained for NMUr, AMMN and NNK-4-OAc in CHO^{pcDNA3} and CHO^{AGT} cells.

p. S3: Figure S1. Cytotoxicity (A-C) or mutagenicity (D-F) compared to levels of *O*⁶-mG detected in CHO^{pcDNA3} and cells immediately after a 1 h treatment with NMUr (A,D), AMMN (B,E) or NNK-4-OAc (C, F).

Table S1. Cytotoxicity and mutagenicity data obtained for NMUr, AMMN and NNK-4-OAc in CHO^{pcDNA3} and CHO^{AGT} cells.

CHO ^{pcDNA3}	μ M	N	% Survival	<i>hprt</i> mutants/10 ⁵ cells	
			AVERAGE \pm s.d.	AVERAGE \pm s.d.	
NMUr	0	8	100 \pm 6	42 \pm 15	
	0.5	5	88 \pm 11	48 \pm 14	
	0.75	3	64 \pm 6	120 \pm 13	
	1.0	5	43 \pm 4	99 \pm 11	
	2.0	2	19 \pm 3	164 \pm 11	
	2.5	6	10 \pm 3	466 \pm 93	
	4.0	2	6 \pm 3	448 \pm 9	
	5.0	6	2 \pm 1	760 \pm 88	
	7.5	6	1 \pm 1	1367 \pm 499	
8.0	2	1 \pm 1	1950 \pm 23		
AMMN	0	8	100 \pm 8	31 \pm 14	
	0.25	6	82 \pm 14	57 \pm 18	
	0.5	8	51 \pm 15	134 \pm 45	
	1.0	8	17 \pm 5	270 \pm 98	
	2.0	8	5 \pm 4	734 \pm 281	
	4.0	8	1 \pm 1	1968 \pm 215	
NNK-4-OAc	0	8	100 \pm 6	42 \pm 15	
	0.25	5	52 \pm 12	156 \pm 36	
	0.5	5	17 \pm 9	276 \pm 42	
	1	8	2 \pm 2	699 \pm 180	
	1.75	5	0.8 \pm 0.8	1641 \pm 159	
	2.5	8	0.1 \pm 0.2	3238 \pm 800	
CHO ^{AGT}	NMUr	0	8	100 \pm 5	188 \pm 119
		50	5	74 \pm 6	201 \pm 42
		75	5	54 \pm 14	225 \pm 41
		100	5	38 \pm 7	337 \pm 65
		150	5	16 \pm 3	535 \pm 62
		200	5	7 \pm 2	542 \pm 68
		250	6	2 \pm 1	582 \pm 188
		AMMN	0	8	100 \pm 7
	10		8	90 \pm 12	145 \pm 119
	20		8	71 \pm 20	164 \pm 58
	30		6	51 \pm 12	369 \pm 213
	40		8	25 \pm 15	568 \pm 227
	60		6	11 \pm 9	1435 \pm 537
	NNK-4-OAc		0	8	100 \pm 5
		5	5	86 \pm 16	200 \pm 97
10		8	66 \pm 20	244 \pm 57	
20		8	21 \pm 10	373 \pm 64	
30		5	4 \pm 3	462 \pm 78	
40		8	0.2 \pm 0.3	945 \pm 402	

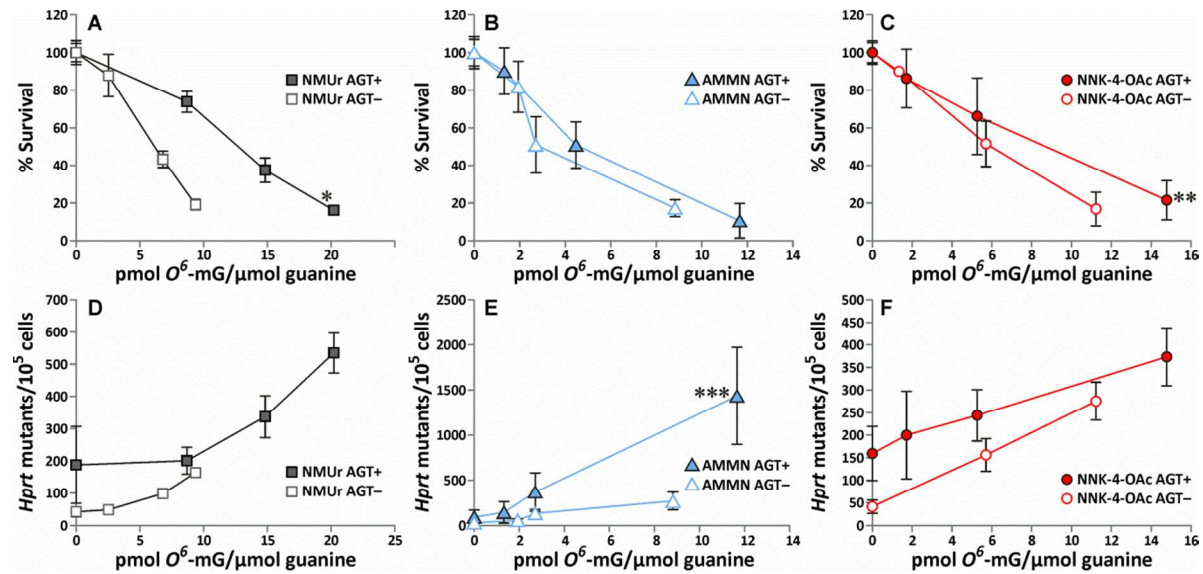


Figure S1. Cytotoxicity (A-C) or mutagenicity (D-F) compared to levels of O⁶-mG detected in CHO^{pCDNA3} (AGT-) and CHO^{AGT} (AGT+) cells immediately after a 1 h treatment with NMUr (A,D), AMMN (B,E) or NNK-4-OAc (C, F). Levels of O⁶-mG are averages of three replicates. Cytotoxicity and mutagenicity data are averages from 3-4 separate experiments performed with duplicates or triplicates. Error bars represent standard deviation. The lines were generated by connecting the data points. *Significantly different than CHO^{pCDNA3} (AGT-) cells, $p = 2 \times 10^{-10}$; **Significantly different than CHO^{pCDNA3} (AGT-) cells, $p = 0.03$; ***Significantly different than CHO^{pCDNA3} (AGT-) cells, $p = 3 \times 10^{-7}$.