

**Mutagenic responses in the Xenometrix Ames MPF PENTA I assay compared to published Ames plate incorporation data**

Compound	CAS Nr.	S9	Ames MPF					Ames plate incorporation (published data)				
			TA98	TA1537	TA100	TA1535	E.coli Combo	TA98	TA1537	TA100	TA1535	E.coli
9-aminoacridine x HCl x H <sub>2</sub> O	52417-22-8	-	neg	pos	neg	neg	neg	neg	pos	neg	neg	neg <sup>a</sup>
2-aminoanthracene	613-13-8	+	pos	pos	pos	pos	pos	pos	pos	pos	pos	pos <sup>b</sup>
N4-aminocytidine <sup>c</sup>	57294-74-3	-	neg	neg	pos	pos	pos	neg	neg	pos	pos	pos
5-azacytidine	320-67-2	-	neg	neg	neg	neg	neg	neg	neg	neg/pos	w+	X
		+	pos	neg	neg	pos	?	neg	neg	neg/?/pos	pos	X
Benzo(a)pyrene	50-32-8	+	pos	pos	pos	neg	pos	pos	pos	pos	neg/?	
Cumene hydroperoxide	80-15-9	-	neg	pos	pos	neg	pos	neg	neg	neg/w+	neg	pos <sup>d</sup>
		+	neg	neg	w+	neg	pos	neg	neg/?/pos	neg/?/w+/pos	neg	pos <sup>d</sup>
Cyclophosphamide	6055-19-2	+	neg	neg	pos	pos	?	neg	neg	pos	pos	
Danthron	117-10-2	+	neg	pos	neg	neg	neg	neg <sup>e</sup>	pos <sup>e</sup>	neg <sup>e</sup>	neg <sup>e</sup>	neg <sup>d</sup>
Formaldehyde	50-00-0	-	pos	neg	pos	neg	pos	neg/?/pos	neg	neg/?/w+/pos	neg	pos <sup>d,f</sup>
Glutaraldehyde	111-30-8	-	w+	neg	pos	neg	pos	neg	neg	neg/?/pos	neg	pos <sup>g</sup>
		+	neg	neg	w+	neg	?	neg/?	neg	?/pos	neg	
ICR-191	17070-45-0	-	pos	pos	pos	?	pos	pos <sup>h</sup>	pos <sup>h</sup>	pos <sup>h</sup>	neg <sup>h</sup>	
6-mercaptopurine	6112-76-1	+	neg	neg	neg	pos	neg	neg	Z	neg	pos	
Methyl methanesulfonate	66-27-3	-	neg	neg	pos	pos	pos	neg/?	neg/pos	pos	?/pos	pos <sup>b</sup>
Pyrene	129-00-0	-	neg	w+	neg	neg	neg	neg	neg	neg	neg	neg
		+	pos	pos	?	neg	n.d.	neg/?/pos	?/w+/pos	neg/?/pos	neg	neg/?/pos
2-nitrofluorene	607-57-8	-	pos	pos	w+	neg	neg	pos <sup>a</sup>	pos <sup>a</sup>	pos <sup>a</sup>	neg <sup>a</sup>	neg <sup>j</sup>
4-nitroquinoline-N-oxide	56-57-5	-	pos	pos	pos	pos	pos	pos <sup>i</sup>	pos <sup>i</sup>	pos <sup>i</sup>	pos <sup>i</sup>	pos <sup>k</sup>
		+	pos	pos	pos	pos	pos	pos <sup>i</sup>	pos <sup>i</sup>	pos <sup>i</sup>	pos <sup>i</sup>	pos <sup>k</sup>
Streptonigrin	3930-19-6	-	neg	neg	neg	neg	pos	neg <sup>l</sup>	neg <sup>l</sup>	neg <sup>l</sup>	neg <sup>l</sup>	pos <sup>d,l</sup>

neg = negative; pos = positive, ? = equivocal, w+ = weak positive, neg/pos = conflicting published results n.d. = not determined

x = -S9; pos, +S9 ?/w+ in TA104 (NTP results)

Z = neg in strain TA97

Most references originate from the NTP Database, containing in part several studies per compound (last accessed Dec 1, 2009):

[http://ntp-apps.niehs.nih.gov/ntp\\_tox/index.cfm?fuseaction=ntpsearch.searchhome&crumbspot=1](http://ntp-apps.niehs.nih.gov/ntp_tox/index.cfm?fuseaction=ntpsearch.searchhome&crumbspot=1)

**Additional references:**

- <sup>a</sup> MacMahon et al. Cancer Research 39 (1979), 682-693
- <sup>b</sup> Sommers, Ch. J. Agric. Food Chem. 51 (2003), 6367 - 6370
- <sup>c</sup> Negishi, K. et al. Nucleic Acids Research Vo. 11, Nr. 15(1983), 5223 - 5233
- <sup>d</sup> Wilcox, P. et al. Mutagenesis 5, vol.3 (1990), 285 - 291
- <sup>e</sup> NTP Report on Carcinogenes Background. Document for Danthron. Final march 1999
- <sup>f</sup> Watanabe, K. et al. Mutation Research 361 (1996), 143 - 155
- <sup>g</sup> Watanabe, K. et al. Mutation Research 412 (1998), 17 - 31
- <sup>h</sup> Skopek, T.R. et al. Proc. Natl. Acad. Sci. USA (1978), 4465 - 4469
- <sup>j</sup> Araki, A. et al. Journal of UOEH 30, No.2 (2008), 133 - 145
- <sup>i</sup> Bridges B.A. et al. Progress in Mutation Research, Vol 1, Chapter 6 (1981) 49-67
- <sup>k</sup> US FDA/CFSAN Redbook 2001
- <sup>l</sup> Maron, D.M. and Ames, B.N. Mutation Research 113 (1983), 173 - 215

**Overall concordance (mutagenic yes/no): 100% ( 17/17)**

**Strain concordance (equivocal and conflicting published results have been ignored)**

	-/+ S9	no S9	with S9
TA98:	86% (12/14)	90% (9/10)	88% (7/8)
TA1537:	100% (14/14)	82% (9/11)	100% (7/7)
TA100:	100% (12/12)	100% (8/8)	100% (6/6)
TA1535:	93% (13/14)	90% (9/10)	100% (9/9)
E.coli:	100% (12/12)	100% (10/10)	100% (4/4)

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