

APPENDIX 3

Summary table of results from short-term tests

	DNA damage				Mutation				Chromosomal anomalies				Other								
	Prokaryotes	Fungi and plants	Insects	Mammalian cells (<i>in vitro</i>)	Mammals (<i>in vivo</i>)	Prokaryotes	Fungi and plants	Insects	Mammalian cells (<i>in vitro</i>)	Mammals (<i>in vivo</i>)	Humans (<i>in vivo</i>)	Fungi and plants	Insects	Mammalian cells (<i>in vitro</i>)	Mammals (<i>in vivo</i>)	Humans (<i>in vivo</i>)	Petite mutation	Domin. lethal (insect)	Cell transformation	Domin. lethal (mamm.)	Sperm anomalies
Acrylonitrile	-	-	+	-	+	-	+	-	-	+	?	-	?	-	+	+	-	-	-	-	
Actinomycin D	-	-	+	-	-	-	+	+	+	+	+	-	?	+	+	+	-	-	-	-	
Adriamycin	-	-	-	-	-	-	+	+	+	+	+	-	?	+	+	+	-	-	-	-	
Aflatoxins	-	-	+	-	-	-	+	+	+	+	+	-	?	+	+	+	-	-	-	-	
Aldrin	-	-	-	-	-	-	+	+	+	+	+	-	?	+	+	+	-	-	-	-	
4-Aminobiphenyl	-	-	-	-	-	-	+	+	+	+	+	-	?	+	+	+	-	-	-	-	
Amitrole	-	-	-	-	-	-	+	+	+	+	+	-	?	+	+	+	-	-	-	-	
Anaesthetics, volatile	-	-	-	-	-	-	-	-	-	-	-	-	?	+	+	+	-	-	-	-	
<i>Halothane</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Cyclopropane</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Methoxyflurane</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Isoflurane</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Nitrous oxide</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Enflurane</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Fluroxene</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Divinyl ether</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Diethyl ether</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Analgesic mixtures containing phenacetin	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>Phenacetin</i>	-	-	-	-	-	-	?	-	-	-	-	-	-	-	-	-	-	-	-	-	
Aniline	-	-	-	-	-	-	?	-	-	-	-	-	-	-	-	-	-	-	-	-	
Arsenic and certain arsenic compounds	+	-	-	-	-	-	-	-	-	-	-	-	+	+	?	+	-	-	-	-	
Asbestos	-	-	-	-	-	-	-	?	+	-	-	-	?	?	-	+	-	-	-	-	
Auramine (technical-grade)	+	-	-	-	-	-	?	+	-	-	-	-	?	+	-	+	-	?	-	+	
Azathioprine	-	-	-	-	-	-	+	+	+	-	-	-	?	+	-	+	-	?	-	+	

Benzene			- - - - -	+ + + + +	- - ?
Benzidine	+	?	+ + ? +	+ + ?	+ - ?
Benzidine-based dyes			+ -	? -	+ -
Beryllium and certain beryllium compounds	-		-	? -	+ -
<i>N,N</i> -Bis(2-chloroethyl)-2-naphthylamine (Chlornaphazine)			+ +		
Bischloroethyl nitrosourea (BCNU)	+		+ + +		+ -
Bis(chloromethyl)ether	+		+ -	+ -	+ -
Technical-grade chloromethyl methyl ether			+ -	+ + +	+ -
Bleomycins	+	+	- + +	+ + +	+ -
1,4-Butanediol dimethanesulphonate (Myleran)	+		+ + + +	+ + + +	+ +
Cadmium and certain cadmium compounds	?		? ? -	+ - ?	+ - -
Carbon tetrachloride			- ?	+ - + -	- -
Chlorambucil		+	+ +	+ - ?	- -
Chloramphenicol	-		-	-	-
Chlordane/Heptachlor			- - -	-	- -
<i>Chlordane</i>	-	-	- - -	-	- -
<i>Heptachlor</i>	-	-	- - -	-	- -
1-(2-Chloroethyl)-3-cyclohexyl-1-nitrosourea (CCNU)	+		+ + +	- +	-
Chlorinated toluenes			-	-	-
<i>Benzyl chloride</i>	+	+	+ + ? +	+ -	+ -
<i>Benzoyl chloride</i>	-		-	-	-
<i>Benzal chloride</i>	+		+ -	-	-
<i>Benzotrichloride</i>	+		+ -	-	-
Chloroform	-		- - -	- - ?	? + ?
Chloroprene			+ + + -	- ? +	+ ?
Chromium and certain chromium compounds			-	-	-
<i>Hexavalent chromium</i>	+		+ + + +	+ + +	+ ? +
<i>Trivalent chromium</i>			? ? ?	? + +	+ ? -
Cisplatin	+		+ + +	+ +	+ +
Clofibrate			-	-	-

APPENDIX 3

273

	DNA damage				Mutation				Chromosomal anomalies				Other								
	Prokaryotes	Fungi and plants	Insects	Mammalian cells (<i>in vitro</i>)	Mammals (<i>in vivo</i>)	Prokaryotes	Fungi and plants	Insects	Mammalian cells (<i>in vitro</i>)	Mammals (<i>in vivo</i>)	Humans (<i>in vivo</i>)	Fungi and plants	Insects	Mammalian cells (<i>in vitro</i>)	Mammals (<i>in vivo</i>)	Humans (<i>in vivo</i>)	Petite mutation	Domin.lethal (insect)	Cell transformation	Domin.lethal (mamm.)	Sperm anomalies
Cyclamates																		-	-	-	-
Cyclophosphamide	+																	-	-	-	-
2,4-D and esters																		-	-	-	-
Dacarbazine																		-	-	-	-
Dapsone																		-	-	-	-
DDT		-																-	-	-	-
<i>ortho</i> -Dichlorobenzene																		-	-	-	-
<i>para</i> -Dichlorobenzene																		-	-	-	-
3,3'-Dichlorobenzidine																		-	-	-	-
Dichloromethane																		-	-	-	-
Dieldrin		-																-	-	-	-
Diethyl sulphate		+																-	-	-	-
3,3'-Dimethoxybenzidine (<i>ortho</i> -Dianisidine)	-																	-	-	-	-
Dimethylcarbamoyl chloride	+	+	+															-	-	-	-
Dimethyl sulphate	+	+																-	-	-	-
1,4-Dioxane		+	+															-	-	-	-
Epichlorohydrin																		-	-	-	-
Ethylene dibromide																		-	-	-	-
Ethylene oxide																		-	-	-	-
Ethylene thiourea	?	?																-	-	-	-
5-Fluorouracil	-																	-	-	-	-
Formaldehyde (gas)	+	+																-	-	-	-
Hexachlorocyclohexane	-																	-	-	-	-
Hydralazine	+																	-	-	-	-
Hydrazine	+																	-	-	-	-
Iron dextran complex	+																	-	-	-	-

Isonicotinic acid hydrazide	+	-	?	+	+	+	-	-	-	-
Lead and certain lead compounds	?			-	?	?	?	?	+	-
Magenta	+		-	+	?	+	+	+	-	-
Melphalan	+			+	+	+	+	+	-	?
6-Mercaptopurine	+			+	+	+	+	+	+	+
Methotrexate	-			?	+	+	+	+	-	+
Methoxsalen with ultra-violet A therapy (PUVA)	+		+	+	+	+	+	+	+	
Metronidazole	+			+	+	-	-	?	-	
Mustard gas	+		+	+	+	+	+	+	-	+
1-Naphthylamine	+	+	+	+	+	-	+	-	-	-
2-Naphthylamine	+	+	+	+	+	+	+	?	-	-
Nickel and certain nickel compounds	-			-		?	?	-	+	-
Nitrogen mustard	+	+	+	+	+	+	+	+	+	+
Oestrogens and progestins:										
<i>Combined oral contraceptives</i>										
<i>Conjugated oestrogens</i>										
<i>Oestrogens: Dienoestrol</i>				-			-	?		
<i>Diethylstilboestrol</i>	-			-	?	-	?	?	+	+
<i>Ethinylestradiol</i>				-	-	-	-	-	+	
<i>Mestranol</i>				-	-	-	-	-		
<i>Oestradiol-17β</i>				-	-	-	-	-		
<i>Oestrone</i>								+		
<i>Chlormadinone acetate</i>							-	-		
<i>Progestins: Dimethisterone</i>							-	-		
<i>Ethyndiol diacetate</i>							-	-		
<i>Lynoestrenol</i>							-	-	+	
<i>Medroxyprogesterone acetate</i>							-	-		
<i>Megestrol acetate</i>							-	-		
<i>Norethisterone</i>							-	-		
<i>Norethynodrel</i>							-	-		
<i>Progesterone</i>							?	+		
Pentachlorophenol		-	+	-	?			-		

	DNA damage					Mutation					Chromosomal anomalies		Other			
	Prokaryotes	Fungi and plants	Insects	Mammalian cells (<i>in vitro</i>)	Mammals (<i>in vivo</i>)	Prokaryotes	Fungi and plants	Insects	Mammalian cells (<i>in vitro</i>)	Mammals (<i>in vivo</i>)	Humans (<i>in vivo</i>)	Fungi and plants	Insects	Mammalian cells (<i>in vitro</i>)	Mammals (<i>in vivo</i>)	Humans (<i>in vivo</i>)
Phenelzine	+				-	-	-	-	-	?						Petite mutation
Phenobarbital				-												Domin lethal (insect)
Phenylbutazone																Cell transformation
<i>N</i> -Phenyl-2-naphthylamine																Domin lethal (mamm.)
Phenytoin																Sperm anomalies
Polychlorinated biphenyls						?	-									
Prednisone						-										
Procarbazine	-	+				-	+	+	+	+	+					+
Reserpine	-					-	+	-	?	?						+
Saccharin	-				-	-	+	-	?	?						?
Soots, tars and oils and benzo[a]pyrene																-
<i>Benzo[a]pyrene</i>	+		+	+		+	+	+	+	+	+					+
Styrene and styrene oxide						+	?	+	-							
<i>Styrene</i>						+	+	+	-							
<i>Styrene oxide</i>						+	+	+	+							?
Sulfamethoxazole						-	?	+								
2,4,5-T and esters																-
Tetrachlorodibenzo-para-dioxin (TCDD)						-	+									-
Tetrachloroethylene						-	+									
<i>ortho</i> -Toluidine	+	+		+	-	?	?									+
Treosulphan																
Trichloroethylene				?	?	?	+		?							+
Tris(aziridinyl)-para- benzoquinone (Triaziquone)	+					+	+	+	+							+

APPENDIX 3

Tris(1-aziridinyl)phosphine sulphide (Thiotepa)		+ + +	+ +	+ + +
Underground haematite mining <i>Haematite</i>				-
Uracil mustard	+	+ + +	+ ? ?	- ?
Vinblastine		- -	? ?	-
Vincristine		- ?	? ?	-
Vinyl chloride	+	+ + + + -	+ +	-
Vinylidene chloride	+	+ + -		-