SUMMARY TABLES OF GENETIC AND RELATED EFFECTS

Summary table of genetic and related effects of CI Acid Orange 3

Nor													Marr	malia	n syste	ems																								
Prol ryot				tes		Pla	nts		Ins	ects			In vii	70														In	vivo					<u></u>						-
													Anin	nal cel	ls					Hur	nan	cells						An	imal	s	•				Hu	mans				-
D	G	D	R	G	A	D	G	C	R	G	С	A	D	G S	М	С	4	T I	I	D	G	S	М	С	A	T	1	D	G	s	М	С	DL	A	D	s	М	С	A	
	+ 1																																	-4					L	-

A, aneuploidy; C, chromosomal aberrations; D, DNA damage; DL, dominant lethal mutation; G, gene mutation; I, inhibition of intercellular communication; M, micronuclei; R, mitotic recombination and gene conversion; S, sister chromatid exchange; T, cell transformation

In completing the tables, the following symbols indicate the consensus of the Working Group with regard to the results for each endpoint:

+ considered to be positive for the specific endpoint and level of biological complexity

+¹ considered to be positive, but only one valid study was available to the Working Group

considered to be negative

÷

-1 considered to be negative, but only one valid study was available to the Working Group

Summary table of genetic and related effects of HC Blue No. 1 (purified samples)

No													Mar	nma	lian	syster	ns																							
													In v	itro															In	vivo	1									
															cells						H	uman	cells	;	******				Ar	nima	ls					Н	umar	าร		
D	G	D	R	G	A	D	G	С	R	G	С	A	D	G	S	М	С	A	Т	I	D	G	s	М	С	A	Т	Ι	D	G	s	М	С	DI	. A	D	s	М	С	A
_1	-		~1	-1						1			+	+ ¹	+1		_1				-1									•••••		+1								

A, aneuploidy; C, chromosomal aberrations; D, DNA damage; DL, dominant lethal mutation; G, gene mutation; I, inhibition of intercellular communication; M, micronuclei; R, mitotic recombination and gene conversion; S, sister chromatid exchange; T, cell transformation

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- considered to be negative

-1 considered to be negative, but only one valid study was available to the Working Group

Nonmammalian systems Mammalian systems Proka-Lower Plants Insects In vitro In vivo eukaryotes ryotes Animal cells Human cells Animals Humans G D D R G A D G С G R C D Α G S М С Т D G S М С Т мС Α Ι Α D G S DL A D S М Ι С Α +1 + -1 + _1 +1 + + +

Summary table of genetic and related effects of HC Blue No. 1 (commercial samples)

A, aneuploidy; C, chromosomal aberrations; D, DNA damage; DL, dominant lethal mutation; G, gene mutation; I, inhibition of intercellular communication; M, micronuclei; R, mitotic recombination and gene conversion; S, sister chromatid exchange; T, cell transformation

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considered to be negative

- -1 considered to be negative, but only one valid study was available to the Working Group
- ? considered to be equivocal or inconclusive (e.g., there were contradictory results from different laboratories; there were confounding exposures; the results were equivocal)

Summary table of genetic and related effects of HC Blue No. 2

No	oka- Lower Plants Insects In														lian	syste	ms																							
Pro ryc			ver aryo	tes		Pla	nts		Ins	ects			In v	vitro														In	vivo											
													Ani	imal	cells						Humai	n cells	s					An	imals	5					F	Ium	ans			
D	G	D	R	G	A	D	G	С	R	G	С	A	D	G	s	м	С	A	Т	I	D G	S	М	С	A	Т	I	D	G	s	М	С	DL	. A	I		s	м	С	A
+													+	+	+		-			_1											-									-

A, aneuploidy; C, chromosomal aberrations; D, DNA damage; DL, dominant lethal mutation; G, gene mutation; I, inhibition of intercellular communication; M, micronuclei; R, mitotic recombination and gene conversion; S, sister chromatid exchange; T, cell transformation

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Summary table of genetic and related effects of HC Red No. 3

Non	mam	ımal	ian s	yster	ns								Mammalia	an system	ns						 												
Prok ryote		Lov euk	ver aryoi	tes		Pla	nts		Inse	ects			In vitro								 		1,	n vivc)								
_													Animal cel	lls		· / · · · · ·	H	Human	cells		 	· · · · ·	A	nima	ıls			·		Human	s		
D	G	D	R	G	A	D	G	C	R	G	С	A	D G S	М	C A	T T	I	G	s	М	4	T I	D	G	S	M	С	DL	A	DS	М	С	A
	+,																																

A, aneuploidy; C, chromosomal aberrations; D, DNA damage; DL, dominant lethal mutation; G, gene mutation; I, inhibition of intercellular communication; M, micronuclei; R, mitotic recombination and gene conversion; S, sister chromatid exchange; T, cell transformation

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considered to be negative

- -1 considered to be negative, but only one valid study was available to the Working Group
- ? considered to be equivocal or inconclusive (e.g., there were contradictory results from different laboratories; there were confounding exposures; the results were equivocal)

No	nmammalian systems ka- tes Lower eukaryotes Insects												Mamma	alian s	syste	ms																			******		
Pro ryo				tes		Pla	ints		Inse	ects			In vitro														In	vivo									
													Animal	cells					н	uman	cells	;					Ar	nima	ls					Hur	nans		
D	G	D	R	G	A	D	G	С	R	G	С	A	D G	s	М	C A	х Т	I	D	G	s	М	С	A	T	I	D	G	s	М	с	DL	A	D	S	м	C A
	+1									+,	-1			+1		?1																					

Summary table of genetic and related effects of HC Yellow No. 4

A, aneuploidy; C, chromosomal aberrations; D, DNA damage; DL, dominant lethal mutation; G, gene mutation; I, inhibition of intercellular communication; M, micronuclei; R, mitotic recombination and gene conversion; S, sister chromatid exchange; T, cell transformation

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- considered to be negative

-1 considered to be negative, but only one valid study was available to the Working Group

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Summary table of genetic and related effects of 2-amino-4-nitrophenol

Nor	ıman	nmal	lian s	yster	ns								Mammalian systems			
Pro ryot		Lov euk	wer aryo	tes		Pla	nts		Inse	ects			In vitro		In vivo	
													Animal cells	Human cells	Animals	Humans
D	G	D	R	G	Α	D	G	С	R	G	с	Α	D G S M C A T I	D G S M C A T I	D G S M C DL A	D S M C A
	+			+1									+1 +1 +1		_13	

A, aneuploidy; C, chromosomal aberrations; D, DNA damage; DL, dominant lethal mutation; G, gene mutation; I, inhibition of intercellular communication; M, micronuclei; R, mitotic recombination and gene conversion; S, sister chromatid exchange; T, cell transformation

In completing the tables, the following symbols indicate the consensus of the Working Group with regard to the results for each end-point:

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- considered to be negative

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Summary table of genetic and related effects of 2-amino-5-nitrophenol

No	nman												Mammalian systems			
Рго гуо		· · ·		es		Pla	nts		Inse	ects			In vitro		In vivo	
													Animal cells	Human cells	Animals	Humans
D	G	D	R	G	A	D	G	С	R	G	С	A	D G S M C A T I	D G S M C A T I	D G S M C DL A	D S M C A
	+												+1 +1 +1		_1	

A, aneuploidy; C, chromosomal aberrations; D, DNA damage; DL, dominant lethal mutation; G, gene mutation; I, inhibition of intercellular communication; M, micronuclei; R, mitotic recombination and gene conversion; S, sister chromatid exchange; T, cell transformation

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Summary table of genetic and related effects of 1,4-diamino-2-nitrobenzene

Nor	iman	mal	ian s	yster	ns								Mar	nma	lian	syste	ms																							
Proi ryot													In v	itro															In v	vivo								2		
													Ani	mal o	cells						Hu	man	cells						Ani	mals	6					Hu	iman	5		
D	G	D	R	G	A	D	G	С	R	G	с	A	D	G	S	м	С	A	Т	I	D	G	s	М	С	Α	Т	I	D	G	S	М	С	DL	A	D	s	М	С	A
	+		_ 1	~ 1									?	+	+,		÷		+		+ 1				+ ¹						-	-1	-	-						

A, aneuploidy; C, chromosomal aberrations; D, DNA damage; DL, dominant lethal mutation; G, gene mutation; I, inhibition of intercellular communication; M, micronuclei; R, mitotic recombination and gene conversion; S, sister chromatid exchange; T, cell transformation

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Nonmar	nma	lian	syste	ms								Ma	nmali	an s	syste	ms																							
Proka- ryotes	Lo euk		otes		Plai	nts		Ins	ects			In v	itro													· • • • • • • • • • • • • • • • • • • •	· · ·	In	vivo										
							:					Ani	mal ce	lls						Hu	man	cells						An	imal	s	- 				Hu	mar	ns .		
DG	D	R	G	A	D	G	с	R	G	С	A	D	GS	5	М	С	A	Т	1	D	G	s	м	С	A	Т	I	D	G	s	м	С	DL	A	D	s	М	С	Ā
-												_	- 1 -	.1		_1					•	.	*				d	_	•		1	- I							

Summary table of genetic and related effects of D&C Red No. 9

A, an euploidy; C, chromosomal aberrations; D, DNA damage; DL, dominant lethal mutation; G, gene mutation; I, inhibition of intercellular communication; M, micronuclei; R, mitotic recombination and gene conversion; S, sister chromatid exchange; T, cell transformation

In completing the tables, the following symbols indicate the consensus of the Working Group with regard to the results for each end-point:

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Summary table of genetic and related effects of CI Basic Red 9

Nor	man	nmal	lian s	syster	ns					_			Ma	mma	lian	syster	ns																						
Prol ryot		Lov euk	wer aryo	tes		Pla	nts		Ins	ects			In v	vitroª												A			In v	rivo ^b									
	G D R G A D G C R G C Animal c														œlls						Hu	ıman	cells						Ani	mals						Hum	ans		
D	G	D	R	G	A	D	G	С	R	G	С	A	D	G	S	м	С	Ą	Т	I	D	G	s	M	с	A	Т	I	D	G	S	М	С	DL	Α	DS	S	мс	`
+	?		_1										+		_1		_1		+										-			_1							

A, aneuploidy; C, chromosomal aberrations; D, DNA damage; DL, dominant lethal mutation; G, gene mutation; I, inhibition of intercellular communication; M, micronuclei; R, mitotic recombination and gene conversion; S, sister chromatid exchange; T, cell transformation

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" Mutagenic in a body fluid assay

^b Host-mediated assays in mouse

Summary table of genetic and related effects of CI Direct Blue 15

Nor													Ma	mmal	ian s	ysten	ns																						
														vitro															In	vivo									
			-				<u> </u>	Γ			Τ		Ani	mal c	ells						Hu	man	cells						An	imals						Huma	ns		
D	G	D	R	G	A	D	G	с	R	G	с	A	D	G	s	М	с	A	Т	I	D	G	s	М	С	A	Т	I	D	G	s	М	С	DL	A	D S	М	C	A
	+ ^a														_ ¹		_1																						

A, aneuploidy; C, chromosomal aberrations; D, DNA damage; DL, dominant lethal mutation; G, gene mutation; I, inhibition of intercellular communication; M, micronuclei; R, mitotic recombination and gene conversion; S, sister chromatid exchange; T, cell transformation

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-1 considered to be negative, but only one valid study was available to the Working Group

? considered to be equivocal or inconclusive (e.g., there were contradictory results from different laboratories; there were confounding exposures; the results were equivocal) "Positive with reduction, negative without

Summary table of genetic and related effects of CI Acid Red 114

Nonm	amm	alian	syste	ms								Ma	mma	alian	syste	ms																						
Proka ryotes		ower Ikaryo	otes		Pla	nts		Ins	ects			In v	ritro															Inv	vivo									
												Ani	mal	cells						Hu	man	cells						An	imal	s					Huma	ns		
DO		R	G	A	D	G	С	R	G	C	A	D	G	s	М	С	A	Т	I	D	G	s	М	С	A	Т	I	D	G	s	М	С	DL	A	D S	M	ı C	A
+	a					-								-1		_1																						

A, an euploidy; C, chromosomal aberrations; D, DNA damage; DL, dominant lethal mutation; G, gene mutation; I, inhibition of intercellular communication; M, micronuclei; R, mitotic recombination and gene conversion; S, sister chromatid exchange; T, cell transformation

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? considered to be equivocal or inconclusive (e.g., there were contradictory results from different laboratories; there were confounding exposures; the results were equivocal) ^a Positive with reduction, negative without

Summary table of genetic and related effects of CI Pigment Red No. 3

Nor	mar	nma	lian s	syster	ns		_						Mam	malian	syster	ns																						
Prol ryot		Lov euk	wer aryo	tes		Pla	nts		Inse	ects			In vit	70													Inv	vivo										
													Anin	nal cell	8					Huma	n cel	s				•	An	imals						Hu	mans	;		
D	G	D	R	G	A	D	G	c	R	G	С	Α	D	GS	М	С	A	T	I	DC	; S	М	С	Α	Т	Ι	D	G	s	М	С	DL	A	D	S	М	С	A
	-													-,		- 1																						

A, an euploidy; C, chromosomal aberrations; D, DNA damage; DL, dominant lethal mutation; G, gene mutation; I, inhibition of intercellular communication; M, micronuclei; R, mitotic recombination and gene conversion; S, sister chromatid exchange; T, cell transformation

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- ? considered to be equivocal or inconclusive (e.g., there were contradictory results from different laboratories; there were confounding exposures; the results were equivocal)

Nor	nman	nmal	lian s	yster	ns								Mammalian	systems																	
Pro ryo		Lov euk	wer aryo	tes		Pla	ints		Ins	ects			In vitro						<u></u>			In vi	ivo								
													Animal cells	3		Hu	man c	ells				Anii	mals				I	luma	ns		
	G	D	R	G	A	D	G	С	R	G	С	A	D G S	M C A	ТІ	D	G	S M	C	A T	I	D	G S	М	C 1	DL A	4 I) s	М	С	A
+	+		?	-1	+1					+			+ + +1	_1	+ +1	+1						+	+1	+1			4	.1 +	1		

Summary table of genetic and related effects of 4,4'-methylene bis(2-chloroaniline) (MOCA)

A, aneuploidy; C, chromosomal aberrations; D, DNA damage; DL, dominant lethal mutation; G, gene mutation; I, inhibition of intercellular communication; M, micronuclei; R, mitotic recombination and gene conversion; S, sister chromatid exchange; T, cell transformation

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- considered to be negative

?

- -1 considered to be negative, but only one valid study was available to the Working Group
- considered to be equivocal or inconclusive (e.g., there were contradictory results from different laboratories; there were confounding exposures; the results were equivocal)

Summary table of genetic and related effects of para-chloroaniline

No	nman	nmal	ian s	yster	ns	-							Mammalia	n syster	ns					-																	
Pro ryo		Lov euk		tes		Pla	nts		Ins	ects			In vitro													In v	ivo										
													Animal cel	s				Hu	man	ælls						Ani	mals						Hur	nans			
D	G	D	R	G	A	D	G	С	R	G	С	A	D G S	М	C A	х Т	I	D	G	s	М	с	A	т	I	D	GS	5	м	c 1	DL	A	D	s	М	с	A
+,1	?		1	+1									+			?				+		+1					2,	d									

A, an euploidy; C, chromosomal aberrations; D, DNA damage; DL, dominant lethal mutation; G, gene mutation; I, inhibition of intercellular communication; M, micronuclei; R, mitotic recombination and gene conversion; S, sister chromatid exchange; T, cell transformation

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- considered to be negative
- -1 considered to be negative, but only one valid study was available to the Working Group
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Summary table of genetic and related effects of 2,6-dimethylaniline

Nor	man	ımal	ian s	ysten	ns								Mammalian syste	ems																		
Prol ryot		Lov euk	ver aryo	tes		Pla	nts		Inse	ects			In vitro									In	vivo						,			
													Animal cells		1	Human	ælls	-				Ar	imals				•	Hur	mans			_
D	G	D	R	G	Α	D	G	Ċ	R	G	с	A	D G S M	C A T I	1	DG	s	м	c	A T	I	D	G S	M	(C	DL	A	D	s	м	2 A	
	?												+1	+1								+1		-								-

A, aneuploidy; C, chromosomal aberrations; D, DNA damage; DL, dominant lethal mutation; G, gene mutation; I, inhibition of intercellular communication; M, micronuclei; R, mitotic recombination and gene conversion; S, sister chromatid exchange; T, cell transformation

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-1 considered to be negative, but only one valid study was available to the Working Group

Summary table of genetic and related effects of N,N-dimethylaniline

Nor	ıman	nmal	lian s	yster	ns								Mammalian systems											*****
Prol ryot		Lov euk	ver aryo	tes		Pla	nts		Ins	ects			In vitro									In vivo		
													Animal cells		н	luman	ælls					Animals		Humans
D	G	D	R	G	A	D	G	С	R	G	С	A	D G S M C A	TI	D	G	s I	и с	A	Т	I	D G S M C I	DL A	D S M C A
	-												_1 +1 +1 +1											

A, aneuploidy; C, chromosomal aberrations; D, DNA damage; DL, dominant lethal mutation; G, gene mutation; I, inhibition of intercellular communication; M, micronuclei; R, mitotic recombination and gene conversion; S, sister chromatid exchange; T, cell transformation

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- considered to be negative
- -1 considered to be negative, but only one valid study was available to the Working Group
- ? considered to be equivocal or inconclusive (e.g., there were contradictory results from different laboratories; there were confounding exposures; the results were equivocal)