Annex II

Comparative LLNA, Guinea Pig, and Human Data Used in the Performance Evaluation

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Annex II-1

LLNA Data for 196 Substances Used for the Evaluation of Skin Sensitization Potency (Alphabetical Order)

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Chemical Name	LLNA Vehicle	Conc. (%)	SI	EC3 (%)	EC3 (μg/cm^2)	Nonstd. LLNA Protocol	Mouse Strain	Mouse Source	LLNA Reference
Abietic acid	AOO	5.0 10.0 25.0	1.5 2 5.2	15.0	3750	N	CBA	NA	(Ashby et al. 1995)
Abietic acid	AOO	NA	NA	11.0	2750	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Basketter et al. 2003b)
Abietic acid	AOO	NA	NA	14.7	3675	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Basketter et al. 2007)
Abietic acid	AOO	NA	NA	8.3	2075	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Basketter et al. 2007)
Abietic acid	AOO	NA	NA	10.6	2650	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Basketter et al. 2007)
Acetyl isovaleryl[1]	AOO	25 50 100	2.9 6 14.3	25.8	6450	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Ryan et al. 2000)
AE F016382 00 TK71 A101	Pluronic L92	3.6 7.1 17.9 35.7	1.0 0.8 1.0 1.1	NC	NC	N	CBA/J	R. Janvier, Le Genest St Isle, France	(Debruyne 2007)
Aluminum chloride	Pet.	5 10 25	0.8 0.8 0.7	NC	NC	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Basketter et al. 1999b)
p-Aminobenzoic acid	AOO	0.5 1 2.5 5 10	1.2 1.2 1.1 1.6 1.4	NC	NC	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Loveless et al. 1996)

[1] The reference refers to this substance as 5-methyl-2,3-hexanedione.

Chemical Name	LLNA Vehicle	Conc. (%)	SI	EC3 (%)	EC3 (μg/cm^2)	Nonstd. LLNA Protocol	Mouse Strain	Mouse Source	LLNA Reference
3-Aminophenol	AOO	2.5 5.0 10.0	2.8 3.5 5.7	3.2	800	Y[2]	CBA/Ca	NA	(Basketter and Scholes 1992)
3-Aminophenol	DMF	NA	NA	0.2	60	N	NA	NA	(SCCP 2007)
Amylcinnamic aldehyde	NA	NA	NA	12.1	3013	NA	NA	NA	(Estrada et al. 2003)
Amylcinnamic aldehyde	AOO	NA	NA	13.5	3375	N	CBA	NA	(Basketter and Cadby 2004)
Amylcinnamic aldehyde	AOO	1.0 2.5 5.0 10.0 25.0	1.5 1.7 2.2 2.8 8.2	10.6	2650	N	NA	NA	(Patlewicz et al. 2001)[EC3] (Gerberick et al. 2005)[Dose-response data]
Amylcinnamic aldehyde	EtOH/DEP (1:3)	NA	NA	7.6	1900	N	NA	NA	(RIFM 2007)
Amylcinnamic aldehyde	AOO	NA	NA	11.2	2800	NA	NA	NA	(Smith and Hotchkiss 2001)
alpha-Amylcinnamyl alcohol	EtOH/DEP (1:3)	NA	NA	NC	NC	N	NA	NA	(RIFM 2007)
alpha-Amylcinnamyl alcohol	EtOH/DEP (1:3)	NA	NA	NC	NC	N	NA	NA	(RIFM 2007)
Aniline	AOO	NA	NA	37.0	9250	NA			(Griem et al. 2003) (Smith and Hotchkiss 2001)
Aniline	AOO	5.0 10.0 25.0 50.0 100.0	1.1 0.9 2.0 1.9 3.3	89	22250	N	CBA	NA	(Gerberick et al. 2005)

[2] Protocol used both sexes, and the test duration was 4 or 5 days.

Chemical Name	LLNA Vehicle	Conc. (%)	SI	EC3 (%)	EC3 (μg/cm^2)	Nonstd. LLNA Protocol	Mouse Strain	Mouse Source	LLNA Reference
Aniline	AOO	10 25 50	1.4 1.8 2.9	NC	NC	Y[3]	CBA/Ca	Animal Breeding Unit, Unilever Environmental Safety Laboratory	(Basketter et al. 1991) (Basketter and Scholes 1992)
Aniline	MEKOO	10 25 50	1.2 1.5 1.7	NC	NC	Y[4]	CBA/Ca	Animal Breeding Unit, Unilever Environmental Safety Laboratory	(Basketter et al. 1991)
Aniline	MEK	10 25 50	1.5 1.7 3	50.0	12500	Y[5]	CBA/Ca	Animal Breeding Unit, Unilever Environmental Safety Laboratory	(Basketter et al. 1991)
Aniline	AOO	10 25 50 100	1.9 4.4 3.6 1.7	16.6	4150	Y[6]	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Basketter et al. 1991)
Aniline	MEK	10 25 50 100	1.7 7.7 7.5 1.5	13.3	3325	Y[7]	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Basketter et al. 1991)
Anisyl alcohol	EtOH/DEP (1:3)	NA	NA	5.9	1475	N	NA	NA	(RIFM 2007)
A SC600	Pluronic L92	10 25 50 100	1.4 1.8 2.3 1.6	NC	NC	N	CBA/J	R. Janvier, Le Genest St Isle, France	(Debruyne 2007)

[3] Protocol used both sexes, and the test duration was 4 or 5 days.
[4] Protocol used both sexes, and the test duration was 5 days.
[5] Protocol used both sexes, and the test duration was 5 days.
[6] Protocol used both sexes, and the test duration was 5 days.
[7] Protocol used both sexes, and the test duration was 5 days.

Chemical Name	LLNA Vehicle	Conc. (%)	SI	EC3 (%)	EC3 (μg/cm^2)	Nonstd. LLNA Protocol	Mouse Strain	Mouse Source	LLNA Reference
Atrazine	ACE	10.0 20.0 30.0	1.3 1.4 0.8	NC	NC	Y[8]	B6C3F1	Taconic Farms	(NTP 1994)
Atrazine	Pluronic L92	12.5 25.0 50.0 75.0 100.0	1.8 2.8 3.6 7.1 7.3	31.3	7813	N	CBA/J	Jackson Laboratories, Bar Harbor, ME	(ECPA 2006c)
Atrazine	Pluronic L92	7.0 33.0 100.0	0.8 2.9 3.7	41.4	10344	N	CBA/J	Jackson Laboratories, Bar Harbor, ME	(ECPA 2006c)
Basil oil	EtOH/DEP (1:3)	2.5 5 10 25 50	3 3 8 17.6 25.2	6.2	1550	N	CBA/Ca	Harlan Interfauna UK, Shaw's Farm, Blackthorne, Bicester, Oxon, UK	(Lalko and Api 2006)
Benzalkonium chloride	ACE	0.5 1 2	9.0 11.1 7.6	0.1	17	Y[9]	CBA/J	Jackson Laboratories, Bar Harbor, ME	(Gerberick et al. 1992)
Benzocaine	AOO	NA	NA	37	9250	NA	NA	NA	(Griem et al. 2003) (Smith and Hotchkiss 2001)
Benzocaine	DMF	NA	NA	18	4500	NA	NA	NA	(Griem et al. 2003) (Smith and Hotchkiss 2001)
Benzocaine	AOO	1 5 25	1.3 1.8 2.9	NC	NC	N	CBA/Ca	B&K Universal, Sollentuna, Sweden	(Montelius et al. 1994)

[8] Mouse strain was not CBA.
[9] LLNA protocol modifications included daily treatment for 4, rather than 3, consecutive days and injection of ^{3}H-methyl thymidine on the fifth day.

Chemical Name	LLNA Vehicle	Conc. (%)	SI	EC3 (%)	EC3 (μg/cm^2)	Nonstd. LLNA Protocol	Mouse Strain	Mouse Source	LLNA Reference
Benzocaine	AOO	NA	NA	22	5500	Y[10]	BALB/c	National Institute of Public Health and the Environment Breeding Colony (RIVM), The Netherlands	(Van Och et al. 2000)
Benzocaine	AOO	5.0 10.0 20.0	4.5 7.2 7.6	3.1	775	Y[11]	CBA/Ca	NA	(Kimber et al. 1989)
Benzocaine	ACE	10 25 50	1.9 1.5 1.2	NC	NC	Y[12]	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Basketter et al. 1995)
Benzocaine	DMF	2.5 5 10	1.4 2.3 2.1	NC	NC	Y[13]	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Basketter et al. 1993)
Benzocaine	DMF	1 5 25	1.9 7.4 3	1.8	450	N	CBA/Ca	B&K Universal, Sollentuna, Sweden	(Basketter et al. 1995)
Benzocaine	DMF	1 5 12.5 25	1.7 3.1 2.4 1.4	4.7	1175	N	CBA/Ca	B&K Universal, Sollentuna, Sweden	(Basketter et al. 1995)
Benzocaine	DMF	1 5 12.5 25	1.4 1.4 2.2 1.5	NC	NC	N	CBA/Ca	B&K Universal, Sollentuna, Sweden	(Basketter et al. 1995)

[10] Mice were pretreated with SDS. Mouse strain was not CBA.
[11] LLNA study length was 3 days.
[12] Protocol used both sexes.
[13] Protocol used both sexes.

Chemical Name	LLNA Vehicle	Conc. (%)	SI	EC3 (%)	EC3 (μg/cm^2)	Nonstd. LLNA Protocol	Mouse Strain	Mouse Source	LLNA Reference
Benzocaine	DMF	1 5 12.5 25	1.6 1.5 2.4 1	NC	NC	N	CBA/Ca	B&K Universal, Sollentuna, Sweden	(Basketter et al. 1995)
Benzocaine	DMF	5 10 12.5 15 25	3.2 2.4 3.6 1.8 2.4	4.54[14]	1135	N	CBA/Ca	B&K Universal, Sollentuna, Sweden	(Basketter et al. 1995)
Benzoic acid	ACE	5 10 20	0.8 0.9 0.8	NC	NC	Y[15]	CBA/J	Jackson Laboratories, Bar Harbor, ME	(Gerberick et al. 1992)
Benzoisothiazolione	DMF	10 30 50	3.8 4.4 4.9	2.3	575	N	CBA	NA	(Ashby et al. 1995)
Benzoisothiazolione	NA	NA	NA	10.4	2600	N	CBA/Ca	NA	(Basketter et al. 1999d)
Benzoisothiazolione	DMF	3 10 30 50	1.56 1.22 2.79 4.53	32.4	8103	Y[16]	CBA/Ca	NA	(Botham et al. 1991)
Benzoisothiazolione	DMF	3 10 30 50	2.72 3.84 4.45 4.97	4.8	1188	Y[17]	CBA/Ca	NA	(Botham et al. 1991)

[14] Interpolation of the EC3 was linear (per Ryan et al. 2007) and used concentration = 0% and SI = 1 as the lowest point.
[15] LLNA protocol modifications included daily treatment for 4, rather than 3, consecutive days and injection of ^{3}H-methyl thymidine on the fifth day.
[16] Does not specify sex of mice used.
[17] Does not specify sex of mice used.

Chemical Name	LLNA Vehicle	Conc. (%)	SI	EC3 (%)	EC3 (μg/cm^2)	Nonstd. LLNA Protocol	Mouse Strain	Mouse Source	LLNA Reference
Benzoquinone	AOO	0.5 1 2.5	36.4 42.3 52.3	0.0099	2.5	Y[18]	CBA/Ca	NA	(Basketter and Scholes 1992)
Benzoyl peroxide	NA	NA	NA	0.30	75	NA	NA	NA	(Basketter and Kimber 2006)
Benzoyl peroxide	ACE	0.5 1 2.5 5 10	18.7 21 24.9 24.8 18.6	0.074	18	N	CBA/JHsd	Harlan Sprague-Dawley, Indianapolis, IN or Jackson Labs, Bar Harbor, ME	(Kimber et al. 1998)
Benzoyl peroxide	ACE	0.5 1 2.5 5 10	14.6 17.2 18.1 20.2 21.8	0.023	5.8	Y[19]	CBA/Ca	Harlan Seralab, Bicester, Oxfordshire, UK	(Kimber et al. 1998)
Benzoyl peroxide	ACE	0.5 1 2.5 5 10	23.4 22.8 21.8 22.5 16.1	0.056	14	Y[20]	CBA/Ca	Harlan Seralab, Bicester, Oxfordshire, UK	(Kimber et al. 1998)
Benzoyl peroxide	ACE	0.5 1 2.5 5 10	14.7 7.9 10.9 20.5 17.3	0.073	18	N	CBA/JHsd	Harlan Sprague-Dawley, Indianapolis, IN or Jackson Labs, Bar Harbor, ME	(Kimber et al. 1998)

[18] Protocol used both sexes, and the test duration was 4 or 5 days.
[19] Protocol used both sexes of mice.
[20] Protocol used both sexes of mice.

Chemical Name	LLNA Vehicle	Conc. (%)	SI	EC3 (%)	EC3 (μg/cm^2)	Nonstd. LLNA Protocol	Mouse Strain	Mouse Source	LLNA Reference
Benzoyl peroxide	ACE	0.5 1 2.5 5 10	24.4 22.1 33.7 31.4 26.5	0.043	11	N	CBA/JHsd	Harlan Sprague-Dawley, Indianapolis, IN or Jackson Labs, Bar Harbor, ME	(Kimber et al. 1998)
Benzyl alcohol	EtOH/DEP (1:3)	NA	NA	NC	NC	N	NA	NA	(RIFM 2007)
Benzylbenzoate	AOO	5 25	2.3 3.5	17.0	4250	NA	NA	NA	(Smith and Hotchkiss 2001)
Benzylbenzoate	EtOH/DEP (1:3)	NA	NA	NC	NC	N	NA	NA	(RIFM 2007)
Benzyl cinnamate	EtOH/DEP (1:3)	NA	NA	18.4	4600	N	NA	NA	(RIFM 2007)
Benzylidene acetone	AOO	10 25 50	8.5 13.6 12.8	3.7	925	N	CBA/J	Harlan Sprague-Dawley, Indianapolis, IN or Jackson Labs, Bar Harbor, ME	(Ryan et al. 2000)
Benzyl salicylate	EtOH/DEP (1:3)	NA	NA	2.9	725	N	NA	NA	(RIFM 2007)
Beryllium sulfate[21]	DMSO	0.25 1 4	1.03 1.17 1.28	NC	NC	Y[22]	BALB/c	Charles River, Germany	(Mandervelt et al. 1997)
Beryllium sulfate	DMF	2.5 5 10	8.4 7.1 9.4	0.68	170	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Basketter et al. 1994)
Bourgeonal	EtOH/DEP (1:3)	NA	NA	4.30	1075	N	NA	NA	(RIFM 2007)

[21] Data are for metal cation.
[22] Mouse strain was not CBA.

Chemical Name	LLNA Vehicle	Conc. (%)	SI	EC3 (%)	EC3 (μg/cm^2)	Nonstd. LLNA Protocol	Mouse Strain	Mouse Source	LLNA Reference
1-Butanol	Water	5 10 20	1.6 1.2 1.4	NC	NC	N	CBA/J	Harlan Sprague-Dawley, Inc., Indianapolis, IN or Jackson Laboratories, Bar Harbor, ME	(Ryan et al. 2000)
Butyl acrylate	AOO	1 2.5 5 10 25	0.7 1.3 1.5 2.5 8.7	11	2750	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Dearman et al. 2007)
Butyl glycidyl ether	AOO	10 25 50	1.4 2.2 5.6	30.9	7725	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Basketter et al. 1994)
Carvone	AOO	6 12 20	1.3 2.6 6.2	12.9	3225	N	CBA/Ca	Harlan, Horst, Netherlands	(Nilsson et al. 2005)
Carvone	AOO	NA	NA	13	3250	N	NA	NA	(RIFM 2007)
Carvone	EtOH/DEP (1:3)	NA	NA	10.7	2675	N	NA	NA	(RIFM 2007)
Carvone	EtOH/DEP (1:3)	NA	NA	5.7	1425	N	NA	NA	(RIFM 2007)
Chloroamine T	NA	NA	NA	0.4	100	NA	NA	NA	(Basketter and Kimber 2006)
4-Chloroaniline	NA	NA	NA	6.5	1625	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Basketter et al. 2003b)
4-Chloroaniline	AOO	2.5 5 10	1.1 1.8 3.3	9	2250	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Scholes et al. 1992)
4-Chloroaniline	AOO	2.5 5 10	2.1 1.6 2.5	NC	NC	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Scholes et al. 1992)

Chemical Name	LLNA Vehicle	Conc. (%)	SI	EC3 (%)	EC3 (μg/cm^2)	Nonstd. LLNA Protocol	Mouse Strain	Mouse Source	LLNA Reference
4-Chloroaniline	AOO	2.5 5 10	1 1.5 1.8	NC	NC	N	CBA/Ca	Barriered Animal Breeding Unit, Alderley Park, UK	(Scholes et al. 1992)
4-Chloroaniline	AOO	2.5 5 10	1 1.5 1.8	NC	NC	Y[23]	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Basketter and Scholes 1992) (Scholes et al. 1992)
(Chloro)methylisothiazolinone	AOO	0.00375 0.0075 0.015 0.0375 0.075	1.3 2.6 7 10.9 14	0.0082	2.1	N	CBA	NA	(Ashby et al. 1995)
(Chloro)methylisothiazolinone	AOO	NA	NA	0.05	13	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Basketter et al. 2003a)
(Chloro)methylisothiazolinone	AOO	0.00075 0.0015 0.0075 0.015 0.0375	0.9 1.2 4.4 9.1 8.5	0.0049	1.2	N	CBA/Ca	Harlan Seralab, Oxon, UK	(Warbrick et al. 1999a)
(Chloro)methylisothiazolinone	AOO	0.0075 0.015 0.038 0.075 0.15	1.5 4.4 7.8 10.8 9.5	0.01	2.5	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Basketter et al. 1999c)
(Chloro)methylisothiazolinone	DMF	0.001 0.003 0.01 0.03 0.1	1.02 0.89 3.57 12.31 27.73	0.008	2.0	N	CBA/Ca	NA	(Botham et al. 1991)

[23] Protocol used both sexes, and the test duration was 4 or 5 days.

Chemical Name	LLNA Vehicle	Conc. (%)	SI	EC3 (%)	EC3 (μg/cm^2)	Nonstd. LLNA Protocol	Mouse Strain	Mouse Source	LLNA Reference
(Chloro)methylisothiazolinone	DMF	0.0015 0.0075 0.015 0.0375 0.075	1.5 3 4.7 10.3 28	0.008	1.9	N	CBA/Ca	Harlan Seralab, Oxon, UK	(Warbrick et al. 1999a)
(Chloro)methylisothiazolinone	DMF	0.01 0.03 0.1	3.5 12.3 22.7	0.009	2.3	N	CBA	NA	(Ashby et al. 1995)
(Chloro)methylisothiazolinone	MEK	0.0015 0.0075 0.015 0.0375 0.075	0.9 3.3 8.4 14 17.6	0.007	1.7	N	CBA/Ca	Harlan Seralab, Oxon, UK	(Warbrick et al. 1999a)
(Chloro)methylisothiazolinone	DMSO	0.0015 0.0075 0.015 0.0375 0.075	1 3 9.5 6.4 10.3	0.008	1.9	N	CBA/Ca	Harlan Seralab, Oxon, UK	(Warbrick et al. 1999a)
(Chloro)methylisothiazolinone	PG	0.0015 0.0075 0.015 0.0375 0.075	2 0.8 2.1 2.3 4.7	0.048	12	N	CBA/Ca	Harlan Seralab, Oxon, UK	(Warbrick et al. 1999a)
(Chloro)methylisothiazolinone	PG	0.00375 0.0075 0.015 0.0375 0.075	0.8 0.8 0.8 1.5 3.7	0.063	16	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Basketter et al. 2003a)

Chemical Name	LLNA Vehicle	Conc. (%)	SI	EC3 (%)	EC3 (μg/cm^2)	Nonstd. LLNA Protocol	Mouse Strain	Mouse Source	LLNA Reference
(Chloro)methylisothiazolinone	ACE	0.005 0.05 0.1	8.1 27.8 48.2	0.003	0.69	Y[24]	CBA/J	Jackson Laboratories, Bar Harbor, ME	(Gerberick et al. 1992)
(Chloro)methylisothiazolinone	ACE	0.0015 0.0075 0.015 0.0375 0.075	1.2 2.9 9.3 17.7 23.5	0.008	1.9	N	CBA/Ca	Harlan Seralab, Oxon, UK	(Warbrick et al. 1999a)
Chlorpromazine	DMF	0.25 2.5 25	1.02 1.75 3.53	18.3	4575	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Basketter et al. 1994)
Chlorpromazine	DMF	10 25 50	11.8 13.7 8.9	1.85[25]	463[26]	N	CBA/Ca	NA	(Basketter et al. 1994)
Cinnamic aldehyde	AOO	NA	NA	1.4	350	NA	NA	NA	(Smith and Hotchkiss 2001)
Cinnamic aldehyde	AOO	5 10 25	12.5 18.4 15.4	2.00	500	Y[27]	CBA/Ca	NA	(Basketter and Scholes 1992)
Cinnamic aldehyde	AOO	1 2.5 5	4.8 7.4 9.8	0.53	133	Y[28]	CBA/Ca	NA	(Kimber et al. 1989)

[24] LLNA protocol modifications included daily treatment for 4, rather than 3, consecutive days and injection of ^{3}H-methyl thymidine on the fifth day.
[25] Interpolation of the EC3 was linear (per Ryan et al. 2007) and used concentration = 0% and SI = 1 as the lowest point.
[26] Schneider and Akkan (2004) report an EC3 of 463 μg/cm^2 from these data.
[27] Protocol used both sexes, and the test duration was 4 or 5 days.
[28] Does not specify sex of mice used.

Chemical Name	LLNA Vehicle	Conc. (%)	SI	EC3 (%)	EC3 (μg/cm^2)	Nonstd. LLNA Protocol	Mouse Strain	Mouse Source	LLNA Reference
Cinnamic aldehyde	AOO	0.5 1 2.5 5 10	1.4 0.9 1.9 7.1 15.8	3.1	775	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Basketter et al. 2001)
Cinnamic aldehyde	AOO	NA	NA	1.7	425	N	NA	NA	(Basketter et al. 2007)
Cinnamic aldehyde	AOO	NA	NA	2.7	675	N	NA	NA	(Basketter et al. 2007)
Cinnamic aldehyde	AOO	NA	NA	1.3	325	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Elahi et al. 2004)
Cinnamic aldehyde	AOO	NA	NA	2.2	550	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Elahi et al. 2004)
Cinnamic aldehyde	EtOH/DEP (3:1) + AO Mix	NA	NA	1.3	325	N	NA	NA	(RIFM 2007)
Cinnamic aldehyde	EtOH/DEP (3:1) + 0.1% TrlC	NA	NA	1.3	325	N	NA	NA	(RIFM 2007)
Cinnamic aldehyde	EtOH/DEP (3:1)	NA	NA	0.9	225	N	NA	NA	(RIFM 2007)
Cinnamic aldehyde	EtOH/DEP (3:1) + 0.1% Toc	NA	NA	1.1	275	N	NA	NA	(RIFM 2007)
Cinnamic aldehyde	DMSO	NA	NA	0.9	225	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Wright et al. 2001)
Cinnamic aldehyde	EtOH/DEP (3:1) + 2% Toc	NA	NA	0.8	200	N	NA	NA	(RIFM 2007)
Cinnamic aldehyde	EtOH/DEP (3:1) + 0.1% TrlC	NA	NA	0.7	175	N	NA	NA	(RIFM 2007)

Chemical Name	LLNA Vehicle	Conc. (%)	SI	EC3 (%)	EC3 (μg/cm^2)	Nonstd. LLNA Protocol	Mouse Strain	Mouse Source	LLNA Reference
Cinnamic aldehyde	EtOH/DEP (3:1) + AO Mix	NA	NA	0.7	175	N	NA	NA	(RIFM 2007)
Cinnamic aldehyde	EtOH/DEP (3:1) + 2% Toc	NA	NA	0.6	150	N	NA	NA	(RIFM 2007)
Cinnamic aldehyde	EtOH/DEP (3:1) + 0.1% Toc	NA	NA	0.2	50	N	NA	NA	(RIFM 2007)
Cinnamic aldehyde	EtOH/DEP (3:1)	NA	NA	0.2	50	N	NA	NA	(RIFM 2007)
Cinnamic aldehyde	AOO	1 2.5 5 10 25	2.2 3.9 4.6 7.6 5.4	1.7	426	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Wright et al. 2001)
Cinnamic aldehyde	DMF	1 5 25	4.3 9.8 12.8	0.7	171	N	CBA/Ca	B&K Universal, Sollentuna, Sweden	(Montelius et al. 1994)
Cinnamic aldehyde	DMF	0.25 0.5 1 2.5 5	1.5 3.1 4.5 8.3 8.6	0.5	116	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Wright et al. 2001)
Cinnamic aldehyde	MEK	1 2.5 5 10 25	2.8 6.2 8.5 14.6 13.2	1.1	272	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Wright et al. 2001)

Chemical Name	LLNA Vehicle	Conc. (%)	SI	EC3 (%)	EC3 (μg/cm^2)	Nonstd. LLNA Protocol	Mouse Strain	Mouse Source	LLNA Reference
Cinnamic aldehyde	PG	1 2.5 5 10 25	2.1 5.8 8.2 16.3 17	1.4	341	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Wright et al. 2001)
Cinnamic aldehyde	DMSO	0.25 0.5 1 2.5 5	1.7 2.3 4.4 7.6 7.6	1.3	313	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Wright et al. 2001)
Cinnamic aldehyde	EtOH (10%)	1 2.5 5 10 25	2.7 3.5 4.8 5.2 5.8	1.6	391	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Wright et al. 2001)
Cinnamic aldehyde	EtOH (50%)	1 2.5 5 10 25	2.1 9.5 10.3 13.6 21.9	1.2	296	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Wright et al. 2001)
Cinnamyl alcohol	AOO	10 25 50 90.0	1.8 3.5 3.9 5.7	21	5250	N	NA	NA	(Gerberick et al. 2005)
Cinnamyl alcohol	AOO	NA	NA	19.1	4775	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Elahi et al. 2004)
Cinnamyl nitrile	EtOH/DEP (1:3)	NA	NA	NC	NC	N	NA	NA	(RIFM 2007)

Chemical Name	LLNA Vehicle	Conc. (%)	SI	EC3 (%)	EC3 (μg/cm^2)	Nonstd. LLNA Protocol	Mouse Strain	Mouse Source	LLNA Reference
C.I. Reactive Red 231	AOO	1 3 9 15	4.8 3.4 4.4 4.6	0.6	150	N	CBA	NA	(Haist et al. 2007)
C.I. Reactive Yellow 174	AOO	1 3 9 15	4.2 5.3 5.5 7.8	0.3	75	N	CBA	NA	(Haist et al. 2007)
Citral	EtOH/DEP (3:1) + 0.1% Toc	NA	NA	6.8	1700	N	NA	NA	(RIFM 2007)
Citral	AOO	5 10 20	2.1 5 9.3	6.6	1638	Y[29]	CBA/Ca	Animal Breeding Unit, Environmental Safety Laboratory, Unilever Research	(Basketter et al. 1991; Basketter and Scholes 1992)
Citral	AOO	5 10 20	0.9 2.2 6.2	12.0	3000	Y[30]	CBA/Ca	Harlan Olac, Ltd., Oxon, UK	(Basketter et al. 1991)
Citral	AOO	5 10 20	2.2 8.1 20.5	5.7	1419	Y[31]	CBA/Ca	Barriered Animal Breeding Unit, Alderley Park, UK	(Basketter et al. 1991)
Citral	AOO	5 10 20	0.9 2.4 4.7	12.6	3152	Y[32]	CBA/Ca	Harlan Olac, Ltd., Oxon, UK	(Basketter et al. 1991)
Citral[33]	AOO	5 10 25	2.9 6.4 12.9	5.1	1275	N	CBA	NA	(Ashby et al. 1995)

[29] Protocol used both sexes.
[30] Protocol used both sexes.
[31] Protocol used both sexes.
[32] Protocol used both sexes.
[33] Referred to as citral PQ in Ashby et al. (1995).

Chemical Name	LLNA Vehicle	Conc. (%)	SI	EC3 (%)	EC3 (μg/cm^2)	Nonstd. LLNA Protocol	Mouse Strain	Mouse Source	LLNA Reference
Citral	AOO	5 10 25	1.2 2.1 6.3	13	3250	Y[34]	NA	NA	(Gerberick et al. 2005)
Citral	EtOH/DEP (3:1)	NA	NA	5.3	1325	N	NA	NA	(RIFM 2007)
Citral	EtOH/DEP (1:3)	NA	NA	1.2	300	N	NA	NA	(RIFM 2007)
Citral	EtOH/DEP (1:3)	2.5 5 10 25 50	2.8 2.3 5.1 11.4 22.1	6.3	1575	N	CBA/Ca	Harlan Interfauna UK, Shaw's Farm, Blackthorne, Bicester, Oxon, UK	(Lalko and Api 2006)
Citral	EtOH/DEP (3:1)	NA	NA	4.6	1150	N	NA	NA	(RIFM 2007)
Citral	EtOH/DEP (3:1) + 0.1% TrlC	NA	NA	5.8	1450	N	NA	NA	(RIFM 2007)
Citral	EtOH/DEP (3:1) + AO Mix	NA	NA	4.6	1150	N	NA	NA	(RIFM 2007)
Citral	EtOH/DEP (3:1) + 0.1% TrlC	NA	NA	3.7	925	N	NA	NA	(RIFM 2007)
Citral	EtOH/DEP (3:1) + AO Mix	NA	NA	2.1	525	N	NA	NA	(RIFM 2007)
Citral	EtOH/DEP (3:1) + 0.1% Toc	NA	NA	1.5	375	N	NA	NA	(RIFM 2007)

[34] Protocol used a 4-day exposure period and both sexes.

Chemical Name	LLNA Vehicle	Conc. (%)	SI	EC3 (%)	EC3 (μg/cm^2)	Nonstd. LLNA Protocol	Mouse Strain	Mouse Source	LLNA Reference
Citronella oil	EtOH/DEP (1:3)	2.5 5 10 25 50	1.4 0.9 1.2 1.2 2.7	NC	NC	N	CBA/Ca	Harlan Interfauna UK, Shaw's Farm, Blackthorne, Bicester, Oxon, UK	(Lalko and Api 2006)
dl-Citronellol	EtOH/DEP (1:3)	NA	NA	43.5	10875	N	NA	NA	(RIFM 2007)
Clove oil (bud)	EtOH/DEP (1:3)	1.0 2.5 5.0 10.0 25.0	1.1 1.8 2.5 3.7 5.9	7.1	1775	N	NA	NA	(RIFM 2007)
Clove oil (leaf)	EtOH/DEP (1:3)	2.5 5 10 25 50	1.6 1.5 4.0 9.5 11.4	7.1	1775	N	CBA/Ca	Harlan Interfauna UK, Shaw's Farm, Blackthorne, Bicester, Oxon, UK	(Lalko and Api 2006)
Clove oil (stem)	EtOH/DEP (1:3)	1.0 2.5 5.0 10.0 25.0	1.6 1.7 2.2 4.2 8.9	7	1750	N	NA	NA	(RIFM 2007)
Cobalt (II) salts (cobalt chloride)	Water	0.5 1 2.5 5	2.08 3.51 3.77 7.21	0.8	200	Y[35]	CBA/N	Japan SLC Inc. Shizuoka, Japan	(Ikarashi et al. 1992)

[35] Test was terminated 24 hours after the last topical exposure.

Chemical Name	LLNA Vehicle	Conc. (%)	SI	EC3 (%)	EC3 (μg/cm^2)	Nonstd. LLNA Protocol	Mouse Strain	Mouse Source	LLNA Reference
Cobalt (II) salts (cobalt chloride)	DMSO	0.5 1 2.5	3.2 3.7 2.8	0.4	100	Y[36]	CBA/Ca	NA	(Basketter and Scholes 1992)
Cobalt (II) salts (cobalt chloride)	DMSO	1 2.5 5	1.5 1.6 2.7	NC	NC	Y	BALB/c	Charles River, Germany	(Mandervelt et al. 1997)
Copper (II) chloride	DMSO	1 2.5 5	8.1 13.8 13.6	0.4	100	Y[37]	CBA/Ca	NA	(Basketter and Scholes 1992; Basketter et al. 1999b)
Coumarin	AOO	5.0 10.0 25.0	2.7 2.9 2.3	NC	NC	N	NA	NA	(Gerberick et al. 2005)
Coumarin	DMF	10 25 50	0.9 2.05 3.2	45.7	11413	Y[38]	NA	Charles River, L'Arbresl, France	(Vocanson et al. 2006)
Coumarin	DMF	10 25 50	1.9 3.7 4	19.2	4792	Y[39]	NA	Charles River, L'Arbresl, France	(Vocanson et al. 2006)
Coumarin	DMF	NA	NA	NC	NC	N	NA	NA	(RIFM 2007)
Cyclamen aldehyde	AOO	1 2.5 10 25	1.4 1.34 1.84 3.26	22.3	5575	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Basketter et al. 2001)
Damascone	AOO	NA	NA	1.24	310	N	NA	NA	(RIFM 2007)
Damascone	AOO	NA	NA	1.22	305	N	NA	NA	(RIFM 2007)
t-alpha Damascone	AOO	NA	NA	3.30	825	N	NA	NA	(RIFM 2007)

[36] Protocol used both sexes, and the test duration was 4 or 5 days.
[37] Protocol used both sexes, and the test duration was 4 or 5 days.
[38] Protocol used CBA/J or Balb/c mice.
[39] Protocol used CBA/J or Balb/c mice.

Chemical Name	LLNA Vehicle	Conc. (%)	SI	EC3 (%)	EC3 (μg/cm^2)	Nonstd. LLNA Protocol	Mouse Strain	Mouse Source	LLNA Reference
trans beta Damascone	AOO	NA	NA	2.40	600	N	NA	NA	(RIFM 2007)
D EC 25	Pluronic L92	0.5 1 2.5	0.56 0.63 0.59	NC	NC	N	CBA/J	R. Janvier, Le Genest St Isle, France	(Debruyne 2007)
delta Damascone	AOO	NA	NA	0.866	217	N	NA	NA	(RIFM 2007)
delta Damascone	AOO	NA	NA	5.19	1298	N	NA	NA	(RIFM 2007)
delta Damascone	EtOH/DEP (1:3)	NA	NA	9.6	2400	N	NA	NA	(RIFM 2007)
D EW 15	Pluronic L92	2.5 5 10 25	1.9 1.5 2.5 2.5	NC	NC	N	CBA/J	R. Janvier, Le Genest St Isle, France	(Debruyne 2007)
Dextran	AOO	NA	NA	NC	NC	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Basketter et al. 2003b)
1,2 Dibromo-2,4-dicyanobutane	AOO	0.5 1 2.5 5	1.4 3.4 3.5 5.4	0.9	225	N	NA	NA	(Gerberick et al. 2005)
1,2 Dibromo-2,4-dicyanobutane	AOO	NA	NA	1.3	325	N	NA	NA	(Basketter et al. 2007)
1,2 Dibromo-2,4-dicyanobutane	AOO	NA	NA	1.8	450	N	NA	NA	(Basketter et al. 2007)
1,2 Dibromo-2,4-dicyanobutane	AOO	NA	NA	5.2	1300	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Basketter et al. 2003b)
1,2 Dibromo-2,4-dicyanobutane	NA	NA	NA	2.0	500	N	CBA/Ca	B&K Universal AB, Sollentuna, Sweden	(Basketter et al. 2005)
1,2 Dibromo-2,4-dicyanobutane	NA	NA	NA	2.3	575	NA	NA	NA	(Estrada et al. 2003)
Diethylenetriamine	AOO	5 10	6.4 12.1	3.3	825	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Basketter et al. 1994)
Diethylmaleate	AOO	25 50 100	16.3 22.6 13.1	5.8	1450	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Ryan et al. 2000)

Chemical Name	LLNA Vehicle	Conc. (%)	SI	EC3 (%)	EC3 (μg/cm^2)	Nonstd. LLNA Protocol	Mouse Strain	Mouse Source	LLNA Reference
Diethylmaleate	AOO	NA	NA	2.1	525	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Basketter et al. 2003b)
Diethylmaleate	NA	1 2.5 5 10 25	2.1 3.3 3.5 7.5 16	2	500	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Basketter et al. 1999c)
Diethylmaleate	NA	NA	NA	4.7	1175	NA	NA	NA	(Estrada et al. 2003)
Diethyl phthalate	AOO	25 50 100	1.0 1.3 1.5	NC	NC	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Ryan et al. 2000)
Dihydrocoumarin	AOO	2.5 5 10	1.6 2.5 6.6	5.6	1400	N	CBA	NA	(Ashby et al. 1995)
Dihydrocoumarin	DMF	2.5 5 10	2.1 5.1 7	3.3	813	Y[40]	CBA/J or Balb/c	Charles River, L'Arbresl, France	(Vocanson et al. 2006)
1,4-Dihydroquinone	AOO	0.05 0.1 0.25 0.5 1.0	1.3 2.7 9.2 17.2 25.8	0.11	28	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Lea et al. 1999)
1,4-Dihydroquinone	AOO	0.05 0.1 0.25 0.5 1	1.3 1.2 4.3 11.2 12.1	0.19	48	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Lea et al. 1999)

[40] Protocol used CBA/J or Balb/c mice.

Chemical Name	LLNA Vehicle	Conc. (%)	SI	EC3 (%)	EC3 (μg/cm^2)	Nonstd. LLNA Protocol	Mouse Strain	Mouse Source	LLNA Reference
1,4-Dihydroquinone	AOO	0.1 0.25 0.50 0.1 2.5	2.8 5.8 13.7 15.2 13.1	0.11	28	Y[41]	CBA/Ca	Harlan Seralab, Bicester, Oxfordshire, UK	(Kimber et al. 1998)
1,4-Dihydroquinone	DMF	0.05 0.1 0.25 0.5 1.0	1.6 1.8 3.2 7.7 10.9	0.23	58	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Lea et al. 1999)
1,4-Dihydroquinone	DMF	0.05 0.1 0.25 0.5 1	0.8 1.8 3.7 7.3 8	0.19	48	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Lea et al. 1999)
1,4-Dihydroquinone	MEK	0.05 0.1 0.25 0.5 1	1.9 2.9 13.9 23 24.5	0.10	25	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Lea et al. 1999)
1,4-Dihydroquinone	MEK	0.05 0.1 0.25 0.5 1.0	2.2 3.6 14.0 19.8 30.9	0.08	20	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Lea et al. 1999)

[41] Protocol used both sexes of mice.

Chemical Name	LLNA Vehicle	Conc. (%)	SI	EC3 (%)	EC3 (μg/cm^2)	Nonstd. LLNA Protocol	Mouse Strain	Mouse Source	LLNA Reference
1,4-Dihydroquinone	PG	0.05 0.1 0.25 0.5 1.0	0.7 0.9 1.2 1.9 2.0	NC	NC	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Lea et al. 1999)
1,4-Dihydroquinone	AOO	0.1 0.25 0.50 0.1 2.5	2.5 5.8 6.0 8.4 12.2	0.12	30	Y[42]	CBA/Ca	Harlan Seralab, Bicester, Oxfordshire, UK	(Kimber et al. 1998)
1,4-Dihydroquinone	AOO	0.1 0.25 0.50 0.1 2.5	2.4 7.0 11.1 15.9 15.0	0.12	30	N	CBA/JHsd	Harlan Sprague-Dawley, Indianapolis, IN or Jackson Labs, Bar Harbor, ME	(Kimber et al. 1998)
1,4-Dihydroquinone	AOO	0.1 0.25 0.50 0.1 2.5	3.6 4.8 12.0 15.3 23.2	0.063	16	N	CBA/JHsd	Harlan Sprague-Dawley, Indianapolis, IN or Jackson Labs, Bar Harbor, ME	(Kimber et al. 1998)
1,4-Dihydroquinone	AOO	0.1 0.25 0.50 0.1 2.5	3.2 14.9 23.7 25.3 33.4	0.091	23	N	CBA/JHsd	Harlan Sprague Dawley, Indianapolis, IN or Jackson Labs, Bar Harbor, ME	(Kimber et al. 1998)
5,5-Dimethyl-3-methylenedihydro-2(3H)-furanone	AOO	2 4 8	3 7.4 9.2	1.8	450	N	CBA	NA	(Ashby et al. 1995)

[42] Protocol used both sexes of mice.

Chemical Name	LLNA Vehicle	Conc. (%)	SI	EC3 (%)	EC3 (μg/cm^2)	Nonstd. LLNA Protocol	Mouse Strain	Mouse Source	LLNA Reference
Dimethyl sulfoxide	AOO	25 50 100	2.7 2.3 3.9	72	18000	NA	NA	NA	(Estrada et al. 2003)
2,4-Dinitrochlorobenzene	NA	NA	NA	0.10	25	N	NA	NA	(Estrada et al. 2003)
2,4-Dinitrochlorobenzene	AOO	0.01 0.025 0.05 0.1 0.25	1.5 1.8 2.4 8.9 38.0	0.048	12	Y[43]	CBA/JHsd	Harlan Sprague Dawley, Inc., Frederick, MD	(Loveless et al. 1996)
2,4-Dinitrochlorobenzene	AOO	0.01 0.05 0.10	6.2 15.7 24.0	0.0058	1.5	Y[44]	CBA/Ca	NA	(Basketter and Scholes 1992)
2,4-Dinitrochlorobenzene	DMSO	0.01 0.025 0.05 0.1 0.25	2.4 4.2 7.3 14.7 14.7	0.015	3.8	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Betts et al. 2006)
2,4-Dinitrochlorobenzene	AOO	0.01 0.025 0.05 0.1 0.25	1.4 2.20 4.00 9.8 16.2	0.036	9.0	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Betts et al. 2006)
2,4-Dinitrochlorobenzene	AOO	0.1 0.25 0.5	5.9 19.9 36.7	0.083	21	Y[45]	CBA/Ca	Animal Breeding Unit, Alderley Park, UK	(Kimber et al. 1991)

[43] LLNA protocol modifications included daily treatment for 4, rather than 3, consecutive days and injection of ^{3}H-methyl thymidine on the fifth day.
[44] Protocol used both sexes, and the test duration was 4 or 5 days.
[45] Protocol did not specify sex, and the test duration was 4 days.

Chemical Name	LLNA Vehicle	Conc. (%)	SI	EC3 (%)	EC3 (μg/cm^2)	Nonstd. LLNA Protocol	Mouse Strain	Mouse Source	LLNA Reference
2,4-Dinitrochlorobenzene	AOO	0.1 0.25 0.5	6.2 15.7 24.0	0.073	18	Y[46]	CBA/Ca	Animal Breeding Unit, Unilever Environmental Safety Laboratory	(Kimber et al. 1991)
2,4-Dinitrochlorobenzene	AOO	0.1 0.25 0.5	10.3 29.7 49.6	0.071	18	Y[47]	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Kimber et al. 1991)
2,4-Dinitrochlorobenzene	AOO	0.1 0.25 0.5	4.7 15.8 26.8	0.087	22	Y[48]	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Kimber et al. 1991)
2,4-Dinitrochlorobenzene	AOO	0.01 0.025 0.05 0.10 0.25	2.0 2.3 5.3 10.5 35.5	0.027	6.8	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Kimber et al. 1995)
2,4-Dinitrochlorobenzene	AOO	0.01 0.025 0.05 0.10 0.25	0.8 1.8 3.3 8.7 40.9	0.046	12	N	CBA/J	Harlan Sprague Dawley Inc., Indianapolis, IN	(Kimber et al. 1995)
2,4-Dinitrochlorobenzene	AOO	0.01 0.025 0.05 0.10 0.25	1.1 1.4 2.5 4.6 11.5	0.062	16	Y[49]	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Kimber et al. 1995)

[46] Protocol did not specify sex, and the test duration was 4 days.
[47] Protocol did not specify sex, and the test duration was 4 days.
[48] Protocol did not specify sex, and the test duration was 4 days.
[49] LLNA protocol modifications included daily treatment for 4, rather than 3, consecutive days and injection of ^{3}H- methyl thymidine on the fifth day.

Chemical Name	LLNA Vehicle	Conc. (%)	SI	EC3 (%)	EC3 (μg/cm^2)	Nonstd. LLNA Protocol	Mouse Strain	Mouse Source	LLNA Reference
2,4-Dinitrochlorobenzene	AOO	0.01 0.025 0.05 0.1 0.25	0.8 1.2 1.7 3.1 22.5	0.094	24	N	CBA/J	Harlan Sprague Dawley Inc., Indianapolis, IN	(Kimber et al. 1995)
2,4-Dinitrochlorobenzene	AOO	0.01 0.025 0.05 0.1 0.25	1.3 1.5 2.1 7.7 43.9	0.057	14	Y[50]	CBA/J	Harlan Sprague Dawley Inc., Indianapolis, IN	(Kimber et al. 1995)
2,4-Dinitrochlorobenzene	AOO	0.01 0.025 0.05 0.1 0.25	1.5 1.9 3.1 6.5 25	0.05	13	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Loveless et al. 1996)
2,4-Dinitrochlorobenzene	AOO	0.01 0.025 0.05 0.1 0.25	1.2 0.9 2.9 4.5 13	0.06	15	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Loveless et al. 1996)
2,4-Dinitrochlorobenzene	AOO	0.01 0.025 0.05 0.1 0.25	2.5 2.9 3.2 7.1 25	0.033	8.3	Y[51]	CBA/JHsd	Harlan Sprague Dawley, Inc., Frederick, MD	(Loveless et al. 1996)

[50] LLNA protocol modifications included daily treatment for 4, rather than 3, consecutive days and injection of ^{3}H- methyl thymidine on the fifth day.
[51] LLNA protocol modifications included daily treatment for 4, rather than 3, consecutive days and injection of ^{3}H-methyl thymidine on the fifth day.

Chemical Name	LLNA Vehicle	Conc. (%)	SI	EC3 (%)	EC3 (μg/cm^2)	Nonstd. LLNA Protocol	Mouse Strain	Mouse Source	LLNA Reference
2,4-Dinitrochlorobenzene	AOO	0.01 0.025 0.05 0.10 0.25	1.17 1.12 1.93 1.95 7.10	0.131	33	Y[52]	BALB/c	Charles River Laboratories	(NTP 1997a)
2,4-Dinitrochlorobenzene	ACE	0.001 0.05 0.1 0.25 0.5	0.8 10.7 21.1 2.2 1.8	0.012	3.0	Y[53]	CBA/J	Jackson Laboratories, Bar Harbor, ME	(Gerberick et al. 1992)
2,4-Dinitrochlorobenzene	AOO	NA	NA	0.02	5.0	N	NA	NA	(Basketter et al. 2007)
2,4-Dinitrochlorobenzene	AOO	NA	NA	0.03	7.5	N	NA	NA	(Basketter et al. 2007)
2,4-Dinitrochlorobenzene	AOO	0.02 0.1 0.5	2 10.5 23	0.029	7.4	N	CBA/Ca	B&K Universal, Sollentuna, Sweden	(Montelius et al. 1994)
2,4-Dinitrochlorobenzene	AOO	NA	NA	0.044	11	Y[54]	Balb/c	National Institute of Public Health and the Environment Breeding Colony (RIVM), The Netherlands)	(Van Och et al. 2000)
2,4-Dinitrochlorobenzene	AOO	NA	NA	0.08	19	Y[55]	Balb/c	Harlan Olac Ltd., Bicester, Oxon, UK	(Basketter et al. 1997)
Dinocap EC	Pluronic L92	0.8 4 21	2 14.2 26.7	1.1	266	N	CBA/J	Jackson Laboratories, Bar Harbor, ME	(ECPA 2006c)

[52] Mouse strain was not CBA.
[53] LLNA protocol modifications included daily treatment for 4, rather than 3, consecutive days and injection of ^{3}H-methyl thymidine on the fifth day.
[54] Mice were pretreated with SDS. Mouse strain was not CBA.
[55] Mouse strain was not CBA.

Chemical Name	LLNA Vehicle	Conc. (%)	SI	EC3 (%)	EC3 (μg/cm^2)	Nonstd. LLNA Protocol	Mouse Strain	Mouse Source	LLNA Reference
Dinocap EC	Pluronic L92	0.8 4 21	2.23 25.77 14.38	0.9	226	N	CBA/Ca	NA	(ECPA 2007e)
Dinocap EC	Pluronic L92	0.8 4 20	1.3 11.5 15.6	1.3	333	N	CBA/J	R. Janvier, Le Genest St Isle, France	(ECPA 2007i)
Dinocap EC	Pluronic L92	0.8 4 10	1.3 4.08 10.94	2.8	689	N	CBA/JHsd	NA	(ECPA 2007g)
Dinocap EC	Pluronic L92	0.8 4 10	2.7 22.9 40.5	0.8	212	N	CBA/CaOlaHsd	NA	(ECPA 2006a)
Ethyl acrylate	AOO	NA	NA	28.7	7175	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Warbrick et al. 2001)
Ethyl acrylate	AOO	2.5 5 10 25 50	1.25 1.54 1.42 2.07 3.98	36.8	9200	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Dearman et al. 2007)
Ethylenediamine	AOO	0.5 1 2.5 5 10	1.6 1.9 3.3 6.1 17.4	2.20	550	Y[56]	NA	NA	(Kimber et al. 1998)
Ethylenediamine	ACE	1 5 10	1.1 1.1 2.2	NC	NC	Y[57]	CBA/J	Jackson Laboratories, Bar Harbor, ME	(Gerberick et al. 1992)
Ethylenediamine	DMF	10	6.8	3.4	850	NA	NA	NA	(Akkan et al. 2003)

[56] The LLNA protocol used both sexes of mice.
[57] LLNA protocol modifications included daily treatment for 4, rather than 3, consecutive days and injection of ^{3}H-methyl thymidine on the fifth day.

Chemical Name	LLNA Vehicle	Conc. (%)	SI	EC3 (%)	EC3 (μg/cm^2)	Nonstd. LLNA Protocol	Mouse Strain	Mouse Source	LLNA Reference
Ethylenediamine	ACE/Water (3:1)	0.1 0.25 0.5 1 2.5	0.8 1.7 1.1 1.2 1	NC	NC	Y[58]	NA	NA	(Kimber et al. 1998)
Ethylene glycol dimethacrylate	NA	NA	NA	35.0	8750	NA	NA	NA	(Basketter and Kimber 2001)
Ethylene glycol dimethacrylate	NA	NA	NA	36.5	9125	NA	NA	NA	(Estrada et al. 2003)
Ethylene glycol dimethacrylate	MEK	10 25 50	1.2 2.4 7	28.0	7000	NA	NA	NA	(Gerberick et al. 2005)
Ethyl vanillin	AOO	2.5 5 10 25 50	0.65 1.05 0.74 0.36 0.29	NC	NC	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Basketter et al. 2001)
Eugenol	AOO	2.5 5 10 25 50	1.6 1.5 2.4 5.5 16	11.9	2975	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Loveless et al. 1996)
Eugenol	AOO	2.5 5 10 25 50	1.1 1.7 1.8 9.1 12.4	8.9	2225	Y[59]	CBA/JHsd	Harlan Sprague Dawley, Inc., Frederick, MD	(Loveless et al. 1996)

[58] The LLNA protocol used both sexes of mice.
[59] LLNA protocol modifications included daily treatment for 4, rather than 3, consecutive days and injection of ^{3}H-methyl thymidine on the fifth day.

Chemical Name	LLNA Vehicle	Conc. (%)	SI	EC3 (%)	EC3 (μg/cm^2)	Nonstd. LLNA Protocol	Mouse Strain	Mouse Source	LLNA Reference
Eugenol	AOO	2.5 5 10 25 50	1.6 1.5 2.4 5.5 16	14.5	3625	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Loveless et al. 1996)
Eugenol	AOO	25 50 100	4.8 9.3 7.6	18.9	4737	Y[60]	CBA/Ca	Animal Breeding Unit, Unilever Environmental Safety Laboratory	(Basketter and Scholes 1992); (Kimber et al. 1991)
Eugenol	AOO	25 50 100	7.2 10.2 8.2	9.5	2368	Y[61]	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Kimber et al. 1991)
Eugenol	AOO	25 50	5.5 14.1	20.4	5109	Y[62]	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Kimber et al. 1991)
Eugenol	AOO	25 50 100	44.7 70.3 68.1	8.1	2021	Y[63]	CBA/Ca	Animal Breeding Unit, Alderley Park, UK	(Kimber et al. 1991)
Eugenol	AOO	25 50	1.2 4	40.9	10225	Y[64]	CBA/Ca	Barriered Animal Breeding Unit, Alderley Park, UK	(Kimber and Weisenberger 1991)
Eugenol	AOO	2.5 5 10 25 50	2 2.8 3.2 13 17	5.8	1450	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Loveless et al. 1996)

[60] Protocol did not specify sex, and the test duration was 4 days.
[61] Protocol did not specify sex, and the test duration was 4 days.
[62] Protocol did not specify sex, and the test duration was 4 days.
[63] Protocol did not specify sex, and the test duration was 4 days.
[64] Mice were exposed on flank by occluded patch prior to topical exposure on ears.

Chemical Name	LLNA Vehicle	Conc. (%)	SI	EC3 (%)	EC3 (μg/cm^2)	Nonstd. LLNA Protocol	Mouse Strain	Mouse Source	LLNA Reference
Eugenol	AOO	2.5 5 10 25 50	2.4 2.1 1.2 5.3 9.6	13.8	3450	Y[65]	CBA/JHsd	Harlan Sprague Dawley, Inc., Frederick, MD	(Loveless et al. 1996)
Eugenol	AOO	2.5 5 10 25 50	1.5 4.3 4.6 14 6.1	6.0	1500	N	CBA/JHsd	Harlan Sprague Dawley, Inc., Frederick, MD	(Loveless et al. 1996)
Eugenol	AOO	NA	NA	15.0	3750	N	NA	NA	(Basketter et al. 2007)
Eugenol	AOO	10 25 50	2.4 5.5 16.1	12.9	3225	N	CBA/Ca	NA	(Bertrand et al. 1997)
Eugenol	AOO	NA	NA	4.9	1225	N	NA	NA	(Basketter et al. 2007)
Eugenol	AOO	NA	NA	7.5	1875	N	NA	NA	(Basketter et al. 2007)
Eugenol	NA	NA	NA	13	3250	NA	NA	NA	(Basketter and Kimber 2001)
Eugenol	NA	NA	NA	11.6	2900	NA	NA	NA	(Kimber and Basketter 1997)
Eugenol	EtOH/DEP (1:3)	2.5 5 10 25 50	1.2 2.7 6 14.3 19.4	5.4	1350	N	CBA/Ca	Harlan Interfauna UK, Shaw's Farm, Blackthorne, Bicester, Oxon, UK	(Lalko and Api 2006)
Eugenol	ACE	25 50 75	5.4 10.6 10.5	18.2	4539	Y[66]	CBA/J	Jackson Laboratories, Bar Harbor, ME	(Gerberick et al. 1992)

[65] LLNA protocol modifications included daily treatment for 4, rather than 3, consecutive days and injection of ^{3}H-methyl thymidine on the fifth day.
[66] LLNA protocol modifications included daily treatment for 4, rather than 3, consecutive days and injection of ^{3}H-methyl thymidine on the fifth day.

Chemical Name	LLNA Vehicle	Conc. (%)	SI	EC3 (%)	EC3 ($\mu g/cm^2$)	Nonstd. LLNA Protocol	Mouse Strain	Mouse Source	LLNA Reference
Eugenol	EtOH/DEP (3:1)	NA	NA	5.3	1325	N	NA	NA	(Isola and Lalko 2001)
Eugenol	EtOH/DEP (1:3)	NA	NA	10.5	2625	N	NA	NA	(Isola and Lalko 2001)
Eugenol	EtOH	NA	NA	10.7	2675	N	NA	NA	(Isola and Lalko 2001)
Eugenol	DEP	NA	NA	15.1	3775	N	NA	NA	(Isola and Lalko 2001)
EXP 10810 A	Pluronic L92	10 25 50	6.4 8.4 9.2	2.1	527	N	CBA/J	R. Janvier, Le Genest St Isle, France	(Debruyne 2007)
EXP 11120 A	Pluronic L92	10 25 50 100	0.96 0.66 1.6 6.3	64.9	16223	N	CBA/J	R. Janvier, Le Genest St Isle, France	(Debruyne 2007)
FAR01042-00	Pluronic L92	10 25 50 100	1.4 2.1 1.4 2.5	NC	NC	N	CBA/J	R. Janvier, Le Genest St Isle, France	(Debruyne 2007)
FAR01060-00	Pluronic L92	10 25 50 100	0.4 0.8 1 3.6	88.5	22115	N	CBA/J	R. Janvier, Le Genest St Isle, France	(Debruyne 2007)
Farnesol	AOO	NA	NA	4.1	1025	N	NA	NA	(RIFM 2007)
Farnesol	AOO	NA	NA	5.5	1375	N	NA	NA	(RIFM 2007)
Fatty acid glutamate	NA	5 25 50 100	1.5 1.8 1.2 4.8	75.0	18750	N	NA	NA	(TNO 2006)

Chemical Name	LLNA Vehicle	Conc. (%)	SI	EC3 (%)	EC3 (μg/cm^2)	Nonstd. LLNA Protocol	Mouse Strain	Mouse Source	LLNA Reference
Fatty alcohol #1	NA	10 25 50	4.2 8.2 16.2	7.6	1899	N	NA	NA	(TNO 2006)
Fatty alcohol #2	NA	10 25 50	4 9.9 16	8.6	2140	N	NA	NA	(TNO 2006)
F & Fo WG 50 + 25	Pluronic L92	2.5 5 10 25	11.7 12.6 14.1 15.2	0.003	0.77	N	CBA/J	R. Janvier, Le Genest St Isle, France	(Debruyne 2007)
Formaldehyde	ACE	0.25 0.5 1 2.5 5	NC NC NC NC 4	0.54[67]	135	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Hilton et al. 1998)
Formaldehyde	ACE	0.093 0.185 0.37 0.925 1.85	1.1 2.3 2.3 3.9 4	0.61	153	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Hilton et al. 1998) [EC3]; (Gerberick et al. 2005) [Dose-response data]
Formaldehyde	ACE	NA	NA	0.65	163	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Basketter et al. 2005)
Formaldehyde	AOO	0.1 0.5 1 5 10	0.97 1.91 3.17 5.23 8.59	0.35	88	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Basketter et al. 2001)

[67] Hilton et al. (1998) report this EC3 as 0.18M.

Chemical Name	LLNA Vehicle	Conc. (%)	SI	EC3 (%)	EC3 (μg/cm^2)	Nonstd. LLNA Protocol	Mouse Strain	Mouse Source	LLNA Reference
Formaldehyde	AOO	5 10 25	9 10.6 11.9	0.37	93	Y[68]	CBA/Ca	Animal Breeding Unit, Alderley Park, UK	(Kimber et al. 1991)
Formaldehyde	AOO	NA	NA	0.40	100	NA	NA	NA	(Basketter and Kimber 2001)
Formaldehyde	AOO	0.093 0.185 0.37 0.925 1.85	1.1 2.3 2.3 3.9 4	0.70	175	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Hilton et al. 1998)
Formaldehyde	AOO	5 10 25	3.7 4 5.8	0.99	248	Y[69]	CBA/Ca	Animal Breeding Unit, Unilever Environmental Safety Laboratory	(Basketter and Scholes 1992; Kimber et al. 1991)
Formaldehyde	AOO	NA	NA	1.20	300	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Estrada et al. 2003)
Formaldehyde	DMF	1 10 20	6.7 13.2 17.7	0.27	67	N	CBA/Ca	Jackson Laboratories, Bar Harbor, ME	(Ryan et al. 2002)
Formaldehyde	DMF	0.25 0.5 1 2.5 5	NC NC NC NC >7	0.33[70]	83	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Hilton et al. 1998)
Formaldehyde	AOO	5 10 25	6.8 6.1 6.6	1.72	430	Y[71]	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Kimber et al. 1991)

[68] Protocol did not specify sex, and the test duration was 4 days.
[69] Protocol did not specify sex, and the test duration was 4 days.
[70] Hilton et al. (1998) report this EC3 as 0.11M.
[71] Protocol did not specify sex, and the test duration was 4 days.

Chemical Name	LLNA Vehicle	Conc. (%)	SI	EC3 (%)	EC3 (μg/cm^2)	Nonstd. LLNA Protocol	Mouse Strain	Mouse Source	LLNA Reference
Formaldehyde	AOO	5 10 25	4.6 4.7 4.2	2.78[72]	695	Y[73]	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Kimber et al. 1991)
Formaldehyde	DMSO	1 10 20	7.5 16 17.6	0.30[74]	74	N	CBA/Ca	Jackson Laboratories, Bar Harbor, ME	(Ryan et al. 2002)
Formaldehyde	Water	1 10 20	1.2 2.5 3.6	14.5	3636	N	CBA/Ca	Jackson Laboratories, Bar Harbor, ME	(Ryan et al. 2002)
Formaldehyde	PG	0.38 0.95 1.9 3.8 9.5	1.1 1.6 1.5 3.2 8.5	2.8	700	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Basketter et al. 2003a)
Formaldehyde	Pluronic L92	1 5 20	1.1 3.8 10.6	3.8	950	N	CBA/Ca	NA	(ECPA 2007d)
Formaldehyde	Pluronic L92	1 5 20	1.6 2.6 12	5.6	1400	N	CBA/J	Jackson Laboratories, Bar Harbor, ME	(ECPA 2006c)
Formaldehyde	Pluronic L92	1 5 20	0.99 2.16 6.15	8	2000	N	CBA/J	R. Janvier, Le Genest St Isle, France	(ECPA 2007i)
Formaldehyde	Pluronic L92	1 5 20	1.1 2.5 4.8	8.2	2050	N	CBA/JHsd	NA	(ECPA 2007j)

[72] Interpolation of the EC3 was linear (per Ryan et al. 2007) and used concentration = 0% and SI = 1 as the lowest point.
[73] Protocol did not specify sex, and the test duration was 4 days.
[74] Interpolation of the EC3 was linear (per Ryan et al. 2007) and used concentration = 0% and SI = 1 as the lowest point.

Chemical Name	LLNA Vehicle	Conc. (%)	SI	EC3 (%)	EC3 (μg/cm^2)	Nonstd. LLNA Protocol	Mouse Strain	Mouse Source	LLNA Reference
Formaldehyde	Pluronic L92	1 5 20	0.8 1.3 4.8	12.3	3075	N	CBA/CaOla Hsd	NA	(ECPA 2006b)
Fumaric acid	DMSO	5 10 25	1.3 2.3 1.4	NC	NC	N	CBA/CaOla Hsd	Harlan Winkelmann GmbH, D-33178 Borchen	(EFfCI 2006)
Fx + Me EW 69	Pluronic L92	5 10 25 50	0.83 1.55 2.95 8.55	25.2	6306	N	CBA/J	R. Janvier, Le Genest St Isle, France	(Debruyne 2007)
Geraniol	EtOH/DEP (3:1)	1 3 10 30 50	1 1 1.3 3.4 3.9	25.8	6450	Y[75]	CBA/Ca	Harlan Interfauna UK, Shaw's Farm, Blackthorne, Bicester, Oxon, UK	(Lalko et al. 2004)
Geraniol	EtOH/DEP (1:3)	NA	NA	20.4	5100	Y[76]	CBA/Ca	Harlan Interfauna UK, Shaw's Farm, Blackthorne, Bicester, Oxon, UK	(Lalko et al. 2004)
Geraniol	EtOH/DEP (1:3)	2.5 5 10 25 50	1.7 2.4 2.8 4.8 6	11.4	2850	N	CBA/Ca	Harlan Interfauna UK, Shaw's Farm, Blackthorne, Bicester, Oxon, UK	(Lalko and Api 2006)
Geraniol	AOO	NA	NA	57	14250	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon UK	(Griem et al. 2003)
Geraniol	AOO	12.5 25 50	0.9 1.2 2.6	NC	NC	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Basketter et al. 1994)

[75] Protocol used male mice.
[76] Protocol used male mice.

Chemical Name	LLNA Vehicle	Conc. (%)	SI	EC3 (%)	EC3 (μg/cm^2)	Nonstd. LLNA Protocol	Mouse Strain	Mouse Source	LLNA Reference
Geraniol	AOO	NA	NA	26	6500	N	NA	NA	(Roberts et al. 2007)
Geraniol	EtOH	NA	NA	5.6	1400	N	NA	NA	(Isola and Lalko 2001)
Geraniol	DEP	NA	NA	11.8	2950	N	NA	NA	(Isola and Lalko 2001)
Geranium oil	EtOH/DEP (1:3)	2.5 5 10 25 50	1.2 0.7 1.7 1.8 2.8	NC	NC	N	CBA/Ca	Harlan Interfauna UK, Shaw's Farm, Blackthorne, Bicester, Oxon, UK	(Lalko and Api 2006)
Glutaraldehyde	AOO	NA	NA	0.2	50	NA	NA	NA	(Basketter et al. 2000)
Glutaraldehyde	AOO	0.039 0.052 0.13 0.26 0.52	1.6 2.4 4.9 5.1 11.3	0.07	18	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Basketter et al. 2003a)
Glutaraldehyde	ACE	0.05 0.125 0.25 0.5 1.25	1.3 4.3 7.6 11.6 17.7	0.10	26	N	CBA/Ca	NA	(Gerberick et al. 2004)
Glutaraldehyde	ACE	NA	NA	0.09	23	NA	NA	NA	(Gerberick et al. 2001)
Glutaraldehyde	ACE	NA	NA	0.06	15	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Hilton et al. 1998)
Glutaraldehyde	DMF/Water	3.1 6.2 12.5	9.8 21.4 22.9	2.1	516	Y[77]	CBA/J	Jackson Laboratories, Bar Harbor, ME	(Gerberick et al. 1992)

[77] LLNA protocol modifications included daily treatment for 4, rather than 3, consecutive days and injection of ^{3}H-methyl thymidine on the fifth day.

Chemical Name	LLNA Vehicle	Conc. (%)	SI	EC3 (%)	EC3 (μg/cm^2)	Nonstd. LLNA Protocol	Mouse Strain	Mouse Source	LLNA Reference
Glutaraldehyde	DMF	0.25 0.5 1 2.5 5	>3 >3 >3 >3 >19	0.02	5.0	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Hilton et al. 1998)
Glutaraldehyde	PG	0.26 0.52 1.3 2.6	1 1.3 2.4 6.9	1.5	375	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Basketter et al. 2003a)
Glycerol	DMF	25 50 100	1.1 0.7 0.5	NC	NC	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon UK	(Ryan et al. 2000)
Glyceryl thioglycollate	AOO	10 25 50	8 14 31	4.7	1165	N	NA	NA	(TNO 2006)
Glyoxal	DMF	5 10 25	18.1 13.5 12.2	0.6	150	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Basketter et al. 1994)
Glyoxal	AOO	1 2.5 5 10 25	2.5 4.2 5.2 10.3 15.8	1.4	350	NA	NA	NA	(Patlewicz et al. 2002)[EC3]; (Gerberick et al. 2005) (Dose-response data)
Glyoxal	NA	NA	NA	0.5	125	NA	NA	NA	(Basketter and Kimber 2006)
Gold chloride	DMSO	5 10 25	21.8 10.9 17.2	0.48[78]	120	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Basketter et al. 1999b)

[78] Interpolation of the EC3 was linear (per Ryan et al. 2007) and used concentration = 0% and SI = 1 as the lowest point.

Chemical Name	LLNA Vehicle	Conc. (%)	SI	EC3 (%)	EC3 (μg/cm^2)	Nonstd. LLNA Protocol	Mouse Strain	Mouse Source	LLNA Reference
Hexane	AOO	25 50 100	0.8 0.8 2.2	NC	NC	NA	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Basketter et al. 1996)
trans-2-Hexenal	AOO	0.5 1 2.5 5.0 10.0	1.2 1.2 2.3 2.6 6.4	5.5	1375	NA	NA	NA	(Patlewicz et al. 2002)[EC3]; (Gerberick et al. 2005) [Dose-response data]
trans-2-Hexenal	EtOH/DEP (1:3)	NA	NA	2.6	650	N	NA	NA	(RIFM 2007)
Hexyl cinnamic aldehyde	AOO	2.5 5 10 25 50	2.2 3.2 7.1 13.9 17.6	4.4	1100	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Basketter et al. 1999c)
Hexyl cinnamic aldehyde	AOO	2.5 5 10 25 50	1.7 2.1 4.4 8.1 14.5	7.0	1750	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Dearman et al. 2001)
Hexyl cinnamic aldehyde	AOO	2.5 5 10 25 50	1.1 2.2 4.4 9.8 20.0	7.00	1750	Y[79]	CBA/JHsd	Harlan Sprague Dawley, Inc., Frederick, MD	(Loveless et al. 1996)

[79] LLNA protocol modifications included daily treatment for 4, rather than 3, consecutive days and injection of ^{3}H-methyl thymidine on the fifth day.

Chemical Name	LLNA Vehicle	Conc. (%)	SI	EC3 (%)	EC3 (μg/cm^2)	Nonstd. LLNA Protocol	Mouse Strain	Mouse Source	LLNA Reference
Hexyl cinnamic aldehyde	AOO	2.5 5 10 25 50	1.3 1.5 4.4 8.8 16.0	7.60	1900	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Loveless et al. 1996)
Hexyl cinnamic aldehyde	AOO	2.5 5 10 25 50	1.4 2.1 3.3 8.3 14.0	7.90	1975	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Loveless et al. 1996)
Hexyl cinnamic aldehyde	AOO	NA	NA	8	2000	NA	NA	NA	(Basketter and Kimber 2001)
Hexyl cinnamic aldehyde	AOO	2.5 5 10 25 50	1.3 1.3 4.2 8.8 17.0	8.10	2025	N	CBA/JHsd	Harlan Sprague Dawley, Inc., Frederick, MD	(Loveless et al. 1996)
Hexyl cinnamic aldehyde	AOO	2.5 5 10 25 50	1.3 1.1 2.5 10.0 17.0	8.40	2100	Y[80]	CBA/JHsd	Harlan Sprague Dawley, Inc., Frederick, MD	(Loveless et al. 1996)
Hexyl cinnamic aldehyde	AOO	2.5 5 10 25 50	1.4 2.1 3.3 8.4 14.0	8.8	2200	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Dearman et al. 2001)

[80] LLNA protocol modifications included daily treatment for 4, rather than 3, consecutive days and injection of ^{3}H-methyl thymidine on the fifth day.

Chemical Name	LLNA Vehicle	Conc. (%)	SI	EC3 (%)	EC3 (μg/cm^2)	Nonstd. LLNA Protocol	Mouse Strain	Mouse Source	LLNA Reference
Hexyl cinnamic aldehyde	AOO	10 25 50.0	3.2 6.0 10.0	9.40	2350	N	CBA	NA	(Ashby et al. 1995)
Hexyl cinnamic aldehyde	AOO	1 2.5 5 10 25	1.5 1.7 2.2 2.8 8.2	10.6	2650	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Dearman et al. 2001)
Hexyl cinnamic aldehyde	AOO	2.5 5 10 25 50	1.30 1.10 2.50 10.40 17.0	11	2750	Y[81]	CBA/Ca	Harlan Sprague-Dawley, Frederick, MD	(Dearman et al. 2001)
Hexyl cinnamic aldehyde	AOO	2.5 5 10 25 50	1.7 2.1 2.4 7.2 14.1	11.9	2975	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Dearman et al. 2001)
Hexyl cinnamic aldehyde	AOO	2.5 5 10 25 50	1 1.4 2 8.7 11.6	11.5	2875	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Basketter et al. 1999c)
Hexyl cinnamic aldehyde	AOO	5 10 25	1.6 2.5 6.8	11.70	2925	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Dearman et al. 2001)
Hexyl cinnamic aldehyde	AOO	5 10 25	1.4 2.7 5.3	11.70	2925	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Dearman et al. 2001)

[81] LLNA protocol modifications included daily treatment for 4, rather than 3, consecutive days and injection of ^{3}H-methyl thymidine on the fifth day.

Chemical Name	LLNA Vehicle	Conc. (%)	SI	EC3 (%)	EC3 (μg/cm^2)	Nonstd. LLNA Protocol	Mouse Strain	Mouse Source	LLNA Reference
Hexyl cinnamic aldehyde	AOO	NA	NA	12.02	3005	NA	NA	NA	(Patlewicz et al. 2001)
Hexyl cinnamic aldehyde	AOO	2.5 5 10 25 50	1.0 1.4 2.0 8.7 11.6	12.20	3050	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Dearman et al. 2001)
Hexyl cinnamic aldehyde	AOO	2.5 5 10 25 50	1.0 1.4 2.0 8.7 11.6	12.20	3050	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Dearman et al. 2001)
Hexyl cinnamic aldehyde	AOO	2.5 5 10 25 50	1.3 2.1 2.7 7.8 13.4	10.90	2725	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Dearman et al. 2001)
Hexyl cinnamic aldehyde	AOO	1 2.5 5 10 25	0.98 1 1.48 1.78 5.65	14.7	3682	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Basketter et al. 2001)
Hexyl cinnamic aldehyde	ACE	3 10 30	4.56 6.63 9.86	1.2	303	N	CBA/CaOla Hsd	Harlan Winkelmann GmbH, D-33178 Borchen	(Gamer et al. 2008)
Hexyl cinnamic aldehyde	Pluronic L92	3 10 30	1.2 4.6 18	6.7	1675	N	CBA/Ca	NA	(ECPA 2007a)
Hexyl cinnamic aldehyde	Pluronic L92	3 10 30	1.9 4.2 9.2	7	1750	N	CBA/J	R. Janvier, Le Genest St Isle, France	(ECPA 2007i)

Chemical Name	LLNA Vehicle	Conc. (%)	SI	EC3 (%)	EC3 (μg/cm^2)	Nonstd. LLNA Protocol	Mouse Strain	Mouse Source	LLNA Reference
Hexyl cinnamic aldehyde	Pluronic L92	3 10 30	1.9 2.2 10.3	12	3000	N	CBA/J	Jackson Laboratories, Bar Harbor, ME	(ECPA 2006c)
Hexyl cinnamic aldehyde	Pluronic L92	3 10 30	1.1 2.5 15.6	10.8	2700	N	CBA/JHsd	NA	(ECPA 2007j)
Hexyl cinnamic aldehyde	Pluronic L92	3 10 30	1.3 2.2 4.3	17.6	4400	N	CBA/CaHsdRcc(SPF)	RCC Ltd, Laboratory Animal Service, CH-4414 Füllinsdorf / Switzerland	(ECPA 2007b)
2-Hexylidene cyclopentanone	EtOH/DEP (1:3)	NA	NA	2.40	600	N	NA	NA	(RIFM 2007)
Hexyl salicylate	EtOH/DEP (1:3)	NA	NA	0.18	45	N	NA	NA	(RIFM 2007)
Hydrocortisone	NA	2.5 5 10	0.3 0.1 0.06	NC	NC	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Basketter et al. 1999a)
4-Hydroxybenzoic acid	DMSO	5 10 25	1.4 1.5 1.3	NC	NC	Y[82]	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Basketter and Scholes 1992); (Scholes et al. 1992)
4-Hydroxybenzoic acid	AOO	2.5 5 10	0.4 0.8 0.6	NC	NC	N	CBA/Ca	Barriered Animal Breeding Unit, Alderley Park. UK	(Scholes et al. 1992)
4-Hydroxybenzoic acid	AOO	5 10 25	0.9 1 0.9	NC	NC	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Scholes et al. 1992)
4-Hydroxybenzoic acid	AOO	5 10 25	1.4 1.5 1.3	NC	NC	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Scholes et al. 1992)

[82] Protocol used both sexes, and the test duration was 4 or 5 days.

Chemical Name	LLNA Vehicle	Conc. (%)	SI	EC3 (%)	EC3 (μg/cm^2)	Nonstd. LLNA Protocol	Mouse Strain	Mouse Source	LLNA Reference
Hydroxycitronellal	AOO	2.5 5 10 25 50	2.2 1 0.8 1.1 7.1	33.0	8250	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Basketter et al. 2001)
Hydroxycitronellal	AOO	NA	NA	20.0	5000	NA	NA	NA	(Basketter and Kimber 2001)
Hydroxycitronellal	AOO	NA	NA	25.0	6250	NA	NA	NA	(Estrada et al. 2003)
Hydroxycitronellal	AOO	25 50 100	3.6 5.9 8.5	21.0	5250	Y[83]	CBA/Ca	NA	(Basketter and Scholes 1992)
Hydroxycitronellal	AOO	10 25 50	1.7 3.2 6.7	23.0	5750	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Basketter et al. 1994)
Hydroxycitronellal	AOO	NA	NA	27.5	6875	N	NA	NA	(Basketter et al. 2007)
Hydroxycitronellal	AOO	NA	NA	22.4	5600	NA	NA	NA	(RIFM 2007)
Hydroxycitronellal	NA	NA	NA	25.3	6313	NA	NA	NA	(Patlewicz et al. 2002)
Hydroxycitronellal	DMF	1 5 25	1.3 2.1 3.4	18.8	4712	N	CBA/Ca	B&K Universal, Sollentuna, Sweden	(Montelius et al. 1994)
Hydroxycitronellal	EtOH/DEP (1:3)	NA	NA	19.3	4825	N	NA	NA	(Isola and Lalko 2001)
Hydroxycitronellal	DEP	NA	NA	19.7	4925	N	NA	NA	(Isola and Lalko 2001)
Hydroxycitronellal	EtOH/DEP (3:1)	NA	NA	22.2	5550	N	NA	NA	(Isola and Lalko 2001)
Hydroxycitronellal	EtOH	NA	NA	26.4	6600	N	NA	NA	(Isola and Lalko 2001)

[83] Protocol used both sexes, and the test duration was 4 or 5 days.

Chemical Name	LLNA Vehicle	Conc. (%)	SI	EC3 (%)	EC3 (μg/cm^2)	Nonstd. LLNA Protocol	Mouse Strain	Mouse Source	LLNA Reference
2-Hydroxyethyl acrylate	AOO	5 10 25	10.7 14.8 18.1	1.4	350	N	CBA/Ca	Barriered Animal Breeding Unit, Alderley Park, UK	(Scholes et al. 1992)
2-Hydroxyethyl acrylate	AOO	10 25	9 8.2	6.25	1563	Y[84]	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Basketter and Scholes 1992) (Scholes et al. 1992)
2-Hydroxyethyl acrylate	DMF	10 25 50	13.8 11 11.7	1.56[85]	390	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Scholes et al. 1992)
2-Hydroxypropyl methacrylate	AOO	10 25 50	1.1 1.2 1.3	NC	NC	Y[86]	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Basketter and Scholes 1992) (Scholes et al. 1992)
2-Hydroxypropyl methacrylate	AOO	10 25 50	0.8 1 0.9	NC	NC	N	CBA/Ca	Barriered Animal Breeding Unit, Alderley Park, UK	(Scholes et al. 1992)
2-Hydroxypropyl methacrylate	AOO	10 25 50	1 1.9 0.8	NC	NC	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Scholes et al. 1992)
2-Hydroxypropyl methacrylate	DMF	10 25 50	1.4 0.7 0.9	NC	NC	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Scholes et al. 1992)
Imidazolidinyl urea	DMF	10 25 50	1.7 3.1 5.5	24	6000	Y[87]	CBA/Ca	NA	(Basketter and Scholes 1992)
Isocyclemone E	EtOH/DEP (1:3)	NA	NA	25.14	6285	N	NA	NA	(RIFM 2007)

[84] Protocol used both sexes, and the test duration was 4 or 5 days.
[85] Interpolation of the EC3 was linear (per Ryan et al. 2007) and used concentration = 0% and SI = 1 as the lowest point.
[86] Protocol used both sexes, and the test duration was 4 or 5 days.
[87] Protocol used both sexes, and the test duration was 4 or 5 days.

Chemical Name	LLNA Vehicle	Conc. (%)	SI	EC3 (%)	EC3 (μg/cm^2)	Nonstd. LLNA Protocol	Mouse Strain	Mouse Source	LLNA Reference
Isocyclocitral	EtOH/DEP (1:3)	NA	NA	7.35	1838	N	NA	NA	(RIFM 2007)
Isocyclogeraniol	EtOH/DEP (1:3)	NA	NA	NC	NC	N	NA	NA	(RIFM 2007)
Isoeugenol	AOO	0.5 1 5	0.9 6.3 31.0	0.5	125	N	CBA/Ca	NA	(Basketter and Cadby 2004)
Isoeugenol	AOO	0.5 1 5	1.5 2.5 29.8	0.6	150	N	CBA/Ca	NA	(Basketter and Cadby 2004)
Isoeugenol	AOO	0.5 1 5	1.6 4.3 24.4	0.6	150	N	CBA/Ca	NA	(Basketter and Cadby 2004)
Isoeugenol	AOO	0.5 1 5	1.8 2.9 23.2	0.6	150	N	CBA/Ca	NA	(Basketter and Cadby 2004)
Isoeugenol	AOO	0.5 1 5	2.3 1.6 23.6	0.6	150	N	CBA/Ca	NA	(Basketter and Cadby 2004)
Isoeugenol	AOO	NA	NA	0.6	150	N	NA	NA	(RIFM 2007)
Isoeugenol	AOO	NA	NA	0.6	150	N	NA	NA	(RIFM 2007)
Isoeugenol	AOO	NA	NA	0.7	175	N	NA	NA	(RIFM 2007)
Isoeugenol	AOO	0.5 1 5	1.2 4.2 18.4	0.7	175	N	CBA/Ca	NA	(Basketter and Cadby 2004)
Isoeugenol	AOO	NA	NA	0.7	175	N	NA	NA	(Basketter et al. 2007)
Isoeugenol	AOO	0.5 1 5	1.1 1.8 23.2	0.8	200	N	CBA/Ca	NA	(Basketter and Cadby 2004)

Chemical Name	LLNA Vehicle	Conc. (%)	SI	EC3 (%)	EC3 (μg/cm^2)	Nonstd. LLNA Protocol	Mouse Strain	Mouse Source	LLNA Reference
Isoeugenol	AOO	0.5 1 5	1.5 2.6 19.2	0.8	200	N	CBA/Ca	NA	(Basketter and Cadby 2004)
Isoeugenol	AOO	0.5 1 5	1.6 2.2 19.0	0.8	200	N	CBA/Ca	NA	(Basketter and Cadby 2004)
Isoeugenol	AOO	NA	NA	0.8	200	N	NA	NA	(RIFM 2007)
Isoeugenol	AOO	NA	NA	0.9	225	N	NA	NA	(Basketter et al. 2007)
Isoeugenol	AOO	0.5 1 5	0.7 2.3 13.8	1	250	N	CBA/Ca	NA	(Basketter and Cadby 2004)
Isoeugenol	AOO	0.5 1 5	1.3 2.2 13.1	1	250	N	CBA/Ca	NA	(Basketter and Cadby 2004)
Isoeugenol	AOO	0.5 1 5	0.8 1.6 14.1	1.1	275	N	CBA/Ca	NA	(Basketter and Cadby 2004)
Isoeugenol	AOO	0.5 1 5	1 1.1 12.4	1.2	300	N	NA	NA	(Gerberick et al. 2005)
Isoeugenol	AOO	NA	NA	1.2	300	N	NA	NA	(Basketter et al. 2007)
Isoeugenol	AOO	NA	NA	1.2	300	N	NA	NA	(Basketter et al. 2007)
Isoeugenol	AOO	NA	NA	1.2	300	N	NA	NA	(RIFM 2007)
Isoeugenol	AOO	NA	NA	1.3	325	N	NA	NA	(RIFM 2007)
Isoeugenol	AOO	2.5 5 10.0	9.9 17.0 29.5	1.3	319	Y[88]	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Kimber et al. 1991)

[88] Protocol did not specify sex, and the test duration was 4 days.

Chemical Name	LLNA Vehicle	Conc. (%)	SI	EC3 (%)	EC3 (μg/cm^2)	Nonstd. LLNA Protocol	Mouse Strain	Mouse Source	LLNA Reference
Isoeugenol	AOO	0.5 1 5	1.2 3.2 8.7	1.3	325	N	CBA/Ca	NA	(Basketter and Cadby 2004)
Isoeugenol	AOO	0.25 0.50 1 2.5 5	1.5 2.2 2.5 4.9 10.0	1.3	325	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Loveless et al. 1996)
Isoeugenol	AOO	NA	NA	1.3	325	N	NA	NA	(Basketter et al. 2007)
Isoeugenol	AOO	NA	NA	1.3	325	N	NA	NA	(Basketter et al. 2007)
Isoeugenol	AOO	0.5	1.1	1.3	332	N	CBA/Ca	NA	(Basketter and Cadby 2004)
Isoeugenol	AOO	2.5 5 10.0	7.8 13.1 14.6	1.3	334	Y[89]	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Kimber et al. 1991)
Isoeugenol	AOO	NA	NA	1.4	350	N	NA	NA	(Basketter et al. 2007)
Isoeugenol	AOO	0.5 1 5	1.6 1.6 14.7	1.4	357	N	CBA/Ca	NA	(Basketter and Cadby 2004)
Isoeugenol	AOO	2.5 5 10.0	7.5 13.1 25.3	1.4	358	Y[90]	CBA/Ca	Animal Breeding Unit, Unilever Environmental Safety Laboratory	(Basketter and Scholes 1992); (Kimber et al. 1991)
Isoeugenol	AOO	NA	NA	1.5	375	N	NA	NA	(RIFM 2007)
Isoeugenol	AOO	0.5 1 5	1.3 3.3 14.7	1.5	375	N	CBA/Ca	NA	(Basketter and Cadby 2004)

[89] Protocol did not specify sex, and the test duration was 4 days.
[90] Protocol did not specify sex, and the test duration was 4 days.

Chemical Name	LLNA Vehicle	Conc. (%)	SI	EC3 (%)	EC3 (μg/cm^2)	Nonstd. LLNA Protocol	Mouse Strain	Mouse Source	LLNA Reference
Isoeugenol	AOO	0.5 1 5	1.6 2.2 7.5	1.6	400	N	CBA/Ca	NA	(Basketter and Cadby 2004)
Isoeugenol	AOO	0.5 1 5	2.0 1.4 7.6	1.6	400	N	CBA/Ca	NA	(Basketter and Cadby 2004)
Isoeugenol	AOO	0.25 0.50 1 2.5 5	1.2 1.7 2.6 4.3 11.0	1.6	400	N	CBA/JHsd	Harlan Sprague Dawley, Inc., Frederick, MD	(Loveless et al. 1996)
Isoeugenol	AOO	NA	NA	1.7	425	N	NA	NA	(Basketter et al. 2007)
Isoeugenol	AOO	NA	NA	1.7	425	N	NA	NA	(Basketter et al. 2007)
Isoeugenol	AOO	0.5 1 5	1.0 1.3 7.5	1.8	450	N	CBA/Ca	NA	(Basketter and Cadby 2004)
Isoeugenol	AOO	0.5 1 5	1.2 1.4 19.3	1.8	450	N	CBA/Ca	NA	(Basketter and Cadby 2004)
Isoeugenol	AOO	0.25 0.50 1 2.5 5	2.9 1.7 2.3 3.8 6.8	1.8	450	Y[91]	CBA/JHsd	Harlan Sprague Dawley, Inc., Frederick, MD	(Loveless et al. 1996)
Isoeugenol	AOO	NA	NA	1.9	475	N	NA	NA	(RIFM 2007)
Isoeugenol	AOO	0.5 1 5	0.9 1.0 7.2	1.9	475	N	CBA/Ca	NA	(Basketter and Cadby 2004)

[91] LLNA protocol modifications included daily treatment for 4, rather than 3, consecutive days and injection of ^{3}H-methyl thymidine on the fifth day.

Chemical Name	LLNA Vehicle	Conc. (%)	SI	EC3 (%)	EC3 (μg/cm^2)	Nonstd. LLNA Protocol	Mouse Strain	Mouse Source	LLNA Reference
Isoeugenol	AOO	0.5 1 5	1.4 1.2 6.7	2	500	N	CBA/Ca	NA	(Basketter and Cadby 2004)
Isoeugenol	AOO	0.5 1 5	0.8 2.8 5.6	2.1	525	N	CBA/Ca	NA	(Basketter and Cadby 2004)
Isoeugenol	AOO	2.5 5 10.0	4.2 11.8 21.3	2.2	560	Y[92]	CBA/Ca	Animal Breeding Unit, Alderley Park, UK	(Kimber et al. 1991)
Isoeugenol	AOO	NA	NA	2.3	575	N	NA	NA	(Basketter et al. 2007)
Isoeugenol	AOO	NA	NA	2.3	575	N	NA	NA	(Basketter et al. 2007)
Isoeugenol	AOO	0.5 1 5	1.4 1.5 4.9	2.6	650	N	CBA/Ca	NA	(Basketter and Cadby 2004)
Isoeugenol	AOO	0.5 1 5	1.7 1.2 5.0	2.6	650	N	CBA/Ca	NA	(Basketter and Cadby 2004)
Isoeugenol	AOO	NA	NA	2.7	675	N	NA	NA	(Basketter et al. 2007)
Isoeugenol	AOO	NA	NA	2.8	700	N	NA	NA	(Basketter et al. 2007)
Isoeugenol	AOO	NA	NA	2.9	725	N	NA	NA	(Basketter et al. 2007)
Isoeugenol	AOO	0.25 0.50 1 2.5 5	0.7 0.7 0.9 2.1 7.2	3.1	775	Y[93]	CBA/JHsd	Harlan Sprague Dawley, Inc., Frederick, MD	(Loveless et al. 1996)

[92] Protocol did not specify sex, and the test duration was 4 days.
[93] LLNA protocol modifications included daily treatment for 4, rather than 3, consecutive days and injection of ^{3}H-methyl thymidine on the fifth day.

Chemical Name	LLNA Vehicle	Conc. (%)	SI	EC3 (%)	EC3 (μg/cm^2)	Nonstd. LLNA Protocol	Mouse Strain	Mouse Source	LLNA Reference
Isoeugenol	AOO	0.25 0.50 1 2.5 5	1.0 1.3 2.1 2.3 4.1	3.3	825	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Loveless et al. 1996)
Isoeugenol	AOO	0.5 1 2.5 5 10	1.8 2.9 7.7 11.1 11.7	1.0	258	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Wright et al. 2001)
Isoeugenol	DMF	0.5 1 2.5 5 10	2.6 2.7 3.7 7.5 11.6	1.45	363	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Wright et al. 2001)
Isoeugenol	DMSO	0.5 1 2.5 5 10	1.9 3.2 7.4 20 17.1	0.9	231	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Wright et al. 2001)
Isoeugenol	EtOH (10%)	0.5 1 2.5 5 10	1.8 2 3.8 5.8 12.6	1.8	458	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Wright et al. 2001)
Isoeugenol	EtOH (50%)	0.5 1 2.5 5 10	1 1.2 2 3 5.4	5.0	1250	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Wright et al. 2001)

Chemical Name	LLNA Vehicle	Conc. (%)	SI	EC3 (%)	EC3 (μg/cm^2)	Nonstd. LLNA Protocol	Mouse Strain	Mouse Source	LLNA Reference
Isoeugenol	MEK	0.5 1 2.5 5 10	0.9 3.2 5 4.9 8.1	1.0	239	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Wright et al. 2001)
Isoeugenol	NA	NA	NA	1.40	350	NA	NA	NA	(Kimber and Basketter 1997)
Isoeugenol	NA	NA	NA	3.50	875	Y[94]	NA	NA	(Estrada et al. 2003)
Isoeugenol	PG	0.5 1 2.5 5 10	0.8 1.6 3 5.3 8.5	2.5	625	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Wright et al. 2001)
Isomethyl ionone	EtOH/DEP (1:3)	NA	NA	21.8	5450	N	NA	NA	(RIFM 2007)
Isopropanol	AOO	10 25 50	1.7 1.1 1.0	NC	NC	N	CBA	NA	(Basketter 1998)
Isopropyl myristate	AOO	25 50 100	2.1 3.3 3.4	44	11000	N	CBA/J	Harlan Sprague Dawley Inc., Indianapolis, IN	(Ryan et al. 2000)
Jasmine absolute (grandiflorum)	EtOH/DEP (1:3)	NA	NA	5.90	1475	N	NA	NA	(RIFM 2007)
Jasmine absolute (sambac)	EtOH/DEP (1:3)	NA	NA	36.40	9100	N	NA	NA	(RIFM 2007)
Kanamycin	AOO	5 10 25	2.2 0.8 1	NC	NC	NA	NA	NA	(Basketter et al. 1996)

[94] Protocol used both sexes of mice.

Chemical Name	LLNA Vehicle	Conc. (%)	SI	EC3 (%)	EC3 (μg/cm^2)	Nonstd. LLNA Protocol	Mouse Strain	Mouse Source	LLNA Reference
Lead acetate	DMSO	2.5 5 10	0.7 0.8 1	NC	NC	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Basketter et al. 1999b)
Lemongrass oil	EtOH/DEP (1:3)	2.5 5 10 25 50	0.9 2.1 5.1 10.3 13.1	6.5	1625	N	CBA/Ca	Harlan Interfauna UK, Shaw's Farm, Blackthorne, Bicester, Oxon, UK	(Lalko and Api 2006)
Lilial	AOO	1 2.5 5 10 25	1.3 2.47 NA 2.02 3.71	18.7	4675	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Basketter et al. 2001)
Lilial	AOO	NA	NA	16.8	4200	N	NA	NA	(RIFM 2007)
Lilial	EtOH	NA	NA	2.9	725	N	NA	NA	(RIFM 2007)
Lilial	DEP	NA	NA	4.1	1025	N	NA	NA	(RIFM 2007)
Lilial	EtOH/DEP (1:3)	NA	NA	13.9	3475	N	NA	NA	(RIFM 2007)
Lilial	EtOH/DEP (3:1)	NA	NA	8.8	2200	N	NA	NA	(RIFM 2007)
d-Limonene	DEP	NA	NA	31	7750	N	NA	NA	(RIFM 2007)
d-Limonene	DEP	NA	NA	63	15750	N	NA	NA	(RIFM 2007)
d-Limonene	AOO	25 50 100	1.8 2.4 4.0	69	17250	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Gerberick et al. 2005) [EC3]; (Warbrick et al. 2001)[Dose-response data]
d-Limonene	EtOH	NA	NA	10	2500	N	NA	NA	(RIFM 2007)
d-Limonene	EtOH/DEP (3:1)	NA	NA	22	5500	N	NA	NA	(RIFM 2007)
d-Limonene	EtOH/DEP (1:3)	NA	NA	38	9500	N	NA	NA	(RIFM 2007)

Chemical Name	LLNA Vehicle	Conc. (%)	SI	EC3 (%)	EC3 (μg/cm^2)	Nonstd. LLNA Protocol	Mouse Strain	Mouse Source	LLNA Reference
Linalool	AOO	NA	NA	55	13750	N	NA	NA	(RIFM 2007)
Linoleic acid	AOO	10	1.5	14.1	3523	N	CBA/CaOla Hsd	Harlan Winkelmann GmbH, D-33178 Borchen	(EFfCI 2006)
Linolenic acid	AOO	10 25 50	3.1 9.3 10.3	9.9	2463	N	CBA/CaOla Hsd	Harlan Winkelmann GmbH, D-33178 Borchen	(EFfCI 2006)
Litsea cubeba oil	EtOH/DEP (1:3)	2.5 5 10 25 50	2 2.3 3.3 7.9 16	8.4	2100	N	CBA/Ca	Harlan Interfauna UK, Shaw's Farm, Blackthorne, Bicester, Oxon, UK	(Lalko and Api 2006)
Lyral HMPCC	AOO	1 2.5 5 10 25	0.6 0.7 0.6 1.3 4.9	17	4250	NA	NA	NA	(Patlewicz et al. 2002)[EC3] ; (Gerberick et al. 2005) [Dose-response data]
Lyral HMPCC	AOO	NA	NA	17.1	4275	N	NA	NA	(RIFM 2007)
Majantal	AOO	NA	NA	NC	NC	N	NA	NA	(RIFM 2007)
Maleic acid	DMSO	10 25 50	6.7 16.1 16.1	7.0	1743	N	CBA/CaOla Hsd	Harlan Winkelmann GmbH, D-33178 Borchen	(EFfCI 2006)
Manganese chloride	Petrolatum	5 10 25	1.10 0.60 1.00	NC	NC	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Basketter et al. 1999b)
Menthadiene-7-methyl formate	EtOH/DEP (1:3)	NA	NA	NC	NC	N	NA	NA	(RIFM 2007)
Menthadiene-7-methyl formate	EtOH/DEP (1:3)	NA	NA	NC	NC	N	NA	NA	(RIFM 2007)

Chemical Name	LLNA Vehicle	Conc. (%)	SI	EC3 (%)	EC3 (μg/cm^2)	Nonstd. LLNA Protocol	Mouse Strain	Mouse Source	LLNA Reference
2-Mercaptobenzothiazole	DMF	1 3 10	2.3 4.4 8.6	1.7	425	Y[95]	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Gerberick et al. 2005) [EC3]; (Basketter et al. 1993) [Dose-response data]
2-Mercaptobenzothiazole	DMF	10 25 50	4.5 4.6 5.5	5.7[96]	1428	Y[97]	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Basketter and Scholes 1992); (Scholes et al. 1992)
2-Mercaptobenzothiazole	DMF	10 25 50	5.2 9.1 4.8	6.0	1500	N	CBA/Ca	Barriered Animal Breeding Unit, Alderley Park, UK	(Scholes et al. 1992)
2-Mercaptobenzothiazole	DMF	10 25 50	9.8 9.5 8.9	2.3	570	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Scholes et al. 1992)
2-Mercaptobenzothiazole	DMF	10 25 50	10 10.8 8.1	2.2	555	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Scholes et al. 1992)
2-Mercaptobenzothiazole	DMF	1 5 25	3 9.9 17.1	1	250	N	CBA/Ca	B&K Universal, Sollentuna, Sweden	(Montelius et al. 1994)
Mercuric (II) chloride	AOO	5 10	19.9 11.8	0.4	98	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Basketter et al. 1994)
4-Methoxyacetophenone	AOO	10 25 50	1.3 1.0 1.0	NC	NC	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Gerberick et al. 2005) [EC3]; (Ryan et al. 2000) [Dose-response data]
Methoxy dicyclopentadiene carboxaldehyde	AOO	NA	NA	NC	NC	N	NA	NA	(RIFM 2007)
2-Methoxy-4-methylphenol	AOO	NA	NA	5.80	1450	N	NA	NA	(RIFM 2007)

[95] Protocol used both sexes of mice.
[96] Interpolation of the EC3 was linear (per Ryan et al. 2007) and used concentration = 0% and SI = 1 as the lowest point.
[97] Protocol used both sexes, and the test duration was 4 or 5 days.

Chemical Name	LLNA Vehicle	Conc. (%)	SI	EC3 (%)	EC3 (μg/cm^2)	Nonstd. LLNA Protocol	Mouse Strain	Mouse Source	LLNA Reference
4-Methylaminophenol sulfate	DMF	0.5 1 2.5	2.5 3.4 6.7	0.8	200	Y[98]	CBA/Ca	NA	(Gerberick et al. 2005) [EC3]; (Basketter and Scholes 1992) [Dose-response data]
Methylanisylidene acetone	AOO	10 25 50	3.5 10 26.1	9.3	2325	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Ryan et al. 2000)
alpha-Methyl cinnamic aldehyde	AOO	NA	NA	4.5	1125	N	NA	NA	(RIFM 2007)
6-Methylcoumarin	ACE	5 10 25	1.0 1.0 1.1	NC	NC	N	CBA	NA	(Ashby et al. 1995)
6-Methylcoumarin	ACE	5 10 25	1.2 0.9 0.8	NC	NC	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Scholes et al. 1991)
Methyl dodecanesulfonate	AOO	1 2.5 5	21.6 39.9 48.6	0.4	98	Y[99]	CBA/Ca	NA	(Gerberick et al. 2005) [EC3] (Basketter and Scholes 1992) [Dose-response data]
Methylhexanedione	AOO	25 50 100	2.9 6 14.3	26.0	6500	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Gerberick et al. 2005) [EC3]; (Ryan et al. 2000) [Dose-response data]
Methylhydrocinnamal	AOO	2.5 5 10 25 50	1.22 1.36 2.61 4.21 10.69	13.7	3425	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Basketter et al. 2001)
Methylhydrocinnamal	AOO	NA	NA	22.0	5500	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Griem et al. 2003)

[98] Protocol used both sexes, and the test duration was 4 or 5 days.
[99] Protocol used both sexes, and the test duration was 4 or 5 days.

Chemical Name	LLNA Vehicle	Conc. (%)	SI	EC3 (%)	EC3 (μg/cm^2)	Nonstd. LLNA Protocol	Mouse Strain	Mouse Source	LLNA Reference
Methylhydrocinnamal	DMF	25 50 100	3.6 9 16.4	23.1	5775	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Ryan et al. 2000)
Methylhydrocinnamal	NA	NA	NA	14	3500	NA	NA	NA	(Basketter and Kimber 2001)
Methylisothiazolinone	AOO	0.25 0.5 1.0 2.5 5.0	1.5 1.5 1.8 3.8 2.5	1.9	475	NA	NA	NA	(Estrada et al. 2003) [EC3]; (Gerberick et al. 2005) [Dose-response data]
Methylisothiazolinone	AOO	0.049 0.099 0.197 0.493 0.985	1.5 1.5 1.8 3.8 2.5	0.4	100	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Basketter et al. 2003a)
Methyl methacrylate	ACE	10 30 50 75 100	1.5 2.3 2 4.4 7.3	60	15000	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Betts et al. 2006)
Methyl methacrylate	AOO	10 30 50 75 100	1.4 1.5 1.5 2.1 3.6	90	22500	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Betts et al. 2006)
Methyl 2-nonynoate	EtOH (80%)	5 10 20	10.4 17.7 24.4	2.5	625	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Ryan et al. 2000)
Methyl 2-octynoate	EtOH/DEP (1:3)	NA	NA	0.5	125	N	NA	NA	(RIFM 2007)

Chemical Name	LLNA Vehicle	Conc. (%)	SI	EC3 (%)	EC3 (μg/cm^2)	Nonstd. LLNA Protocol	Mouse Strain	Mouse Source	LLNA Reference
Methyl salicylate	DMF	5 10 25	2.3 2.5 3	25.0	6250	N	CBA/Ca	B&K Universal, Sollentuna, Sweden	(Montelius et al. 1994)
Methyl salicylate	MEK	5 10 25	2.5 2.5 7.5	11.5	2875	N	CBA/Ca	B&K Universal, Sollentuna, Sweden	(Montelius et al. 1994)
Methyl salicylate	AOO	1 2.5 5 10 20	1.2 1.5 1.2 1.8 2.9	NC	NC	Y[100]	CBA/J	Harlan Sprague Dawley Inc., Indianapolis, IN	(Kimber et al. 1995)
Methyl salicylate	ACE	1 2.5 5	0.8 0.8 0.8	NC	NC	Y[101]	CBA/J	NA	(Gerberick et al. 1992)
Methyl salicylate	AOO	1 2.5 5 10 20	1.1 1.4 1.4 1.4 2	NC	NC	Y[102]	CBA/Ca	Harlan Seralab, Bicester, Oxfordshire, UK	(Kimber et al. 1998)
Methyl salicylate	AOO	1 2.5 5 10 20	1.8 2 1.5 2.2 1.8	NC	NC	Y[103]	CBA/Ca	Harlan Seralab, Bicester, Oxfordshire, UK	(Kimber et al. 1998)

[100] LLNA protocol modifications included daily treatment for 4, rather than 3, consecutive days and injection of ^{3}H-methyl thymidine on the fifth day.
[101] LLNA protocol modifications included daily treatment for 4, rather than 3, consecutive days and injection of ^{3}H-methyl thymidine on the fifth day.
[102] The LLNA protocol used both sexes of mice.
[103] The LLNA protocol used both sexes of mice.

Chemical Name	LLNA Vehicle	Conc. (%)	SI	EC3 (%)	EC3 (μg/cm^2)	Nonstd. LLNA Protocol	Mouse Strain	Mouse Source	LLNA Reference
Methyl salicylate	AOO	1 2.5 5 10 20	1 1.1 1.6 1.4 0.9	NC	NC	N	CBA/JHsd	Harlan Sprague-Dawley, Indianapolis, IN or Jackson Labs, Bar Harbor, ME	(Kimber et al. 1998)
Methyl salicylate	AOO	1 2.5 5 10 20	1.2 1.1 1.3 1.9 1.2	NC	NC	N	CBA/JHsd	Harlan Sprague-Dawley, Indianapolis, IN or Jackson Labs, Bar Harbor, ME	(Kimber et al. 1998)
Methyl salicylate	AOO	1 2.5 5 10 20	1.1 1.4 1.2 1.2 0.9	NC	NC	N	CBA/JHsd	Harlan Sprague-Dawley, Indianapolis, IN or Jackson Labs, Bar Harbor, ME	(Kimber et al. 1998)
NAVY 14 08 723	AOO	1 3 9 15	5.1 4.8 5.7 5.2	0.49	123	N	CBA	NA	(Haist et al. 2007)
Neomycin sulfate	EtOH (25%)	0.5 1 2	0.9 0.9 0.9	NC	NC	Y[104]	CBA/J	Jackson Laboratories, Bar Harbor, ME	(Gerberick et al. 1992)
Neomycin sulfate	DMSO	5 10 25	1 0.9 1	NC	NC	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Basketter et al. 1994)

[104] LLNA protocol modifications included daily treatment for 4, rather than 3, consecutive days and injection of ^{3}H-methyl thymidine on the fifth day.

Chemical Name	LLNA Vehicle	Conc. (%)	SI	EC3 (%)	EC3 (μg/cm^2)	Nonstd. LLNA Protocol	Mouse Strain	Mouse Source	LLNA Reference
Nickel (II) salts (nickel chloride)	DMF	0.25 0.9 1 2.5 5	2 2.4 1.6 1.6 2.2	NC	NC	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Ryan et al. 2002)
Nickel (II) salts (nickel sulfate)	DMSO	0.25 0.5 1 2.5 5	1.3 1.4 1.4 1.8 3.1	4.8	1202	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Ryan et al. 2002)
Nickel (II) salts (nickel chloride)	DMSO	1 2.5 5	1.5 2.2 2.4	NC	NC	Y[105]	CBA/Ca	NA	(Basketter and Scholes 1992)
Nickel (II) salts (nickel sulfate)	DMSO/ Water (9:1)	2.5 5	2.19 2.46	NC	NC	Y[106]	CBA/N	Japan SLC Inc., Shizuoka, Japan	(Ikarashi et al. 1992)
Nickel (II) salts (nickel sulfate)	EtOH (30%)	2.5 5 10	1.3 2.6 6.6	5.5	1375	Y[107]	CBA/J	Jackson Laboratories, Bar Harbor, ME	(Gerberick et al. 1992)
Nickel (II) salts (nickel sulfate)	Hydroxy-propyl cellulose in MeOH	2.5 5 10	0.8 1 2	NC	NC	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Scholes et al. 1992)
Nickel (II) salts (nickel sulfate)	Pluronic L92	0.25 0.5 1 2.5 5	2 2.4 2.8 3 2.3	NC	NC	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Ryan et al. 2002)

[105] Protocol used both sexes, and the test duration was 4 or 5 days.
[106] Test was terminated 24 hours after the last topical exposure.
[107] LLNA protocol modifications included daily treatment for 4, rather than 3, consecutive days and injection of ^{3}H-methyl thymidine on the fifth day.

Chemical Name	LLNA Vehicle	Conc. (%)	SI	EC3 (%)	EC3 (μg/cm^2)	Nonstd. LLNA Protocol	Mouse Strain	Mouse Source	LLNA Reference
Nickel (II) salts (nickel sulfate)	Hydroxyprop-yl cellulose in MeOH	2.5 5 10	1.4 1.2 1.2	NC	NC	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Scholes et al. 1992)
Nickel (II) salts (nickel sulfate)	Hydroxy-propyl cellulose in MeOH	2.5 5 10	0.6 0.7 0.5	NC	NC	N	CBA/Ca	Barriered Animal Breeding Unit, Alderley Park, UK	(Scholes et al. 1992)
Nickel (II) salts (nickel sulfate)	Hydroxy-propyl cellulose in MeOH	2.5 5 10	0.8 0.6 0.6	NC	NC	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Scholes et al. 1992)
Nickel (II) salts (nickel sulfate)	DMSO	0.5 1 2.5	1.1 1.5 1.5	NC	NC	Y[108]	CBA/Ca	NA	(Basketter and Scholes 1992)
Oakmoss	EtOH/DEP (1:3)	NA	NA	3.8	950	N	NA	NA	(RIFM 2007)
Octanoic acid	AOO	10 25 50	0.7 1 1.6	NC	NC	N	CBA	NA	(Basketter 1998)
1-Octen-3-yl acetate	EtOH/DEP (1:3)	NA	NA	NC	NC	N	NA	NA	(RIFM 2007)
Octinol	AOO	10 25 50	5.6 8.8 11.2	4.7	1187	N	CBA/CaOla Hsd	Harlan Winkelmann GmbH, D-33178 Borchen	(EFfCI 2006)
Oleic acid	NA	10 25 50	2.6 14.9 6.9	10.5	2622	N	CBA/CaOla Hsd	Harlan Winkelmann GmbH, D-33178 Borchen	(EFfCI 2006)
Oxalic acid	DMF	4 10 25	2.1 4.5 4.2	6.3	1563	N	CBA/Ca	B&K Universal, Sollentuna, Sweden	(Montelius et al. 1994)

[108] Protocol used both sexes, and the test duration was 4 or 5 days.

Chemical Name	LLNA Vehicle	Conc. (%)	SI	EC3 (%)	EC3 (μg/cm^2)	Nonstd. LLNA Protocol	Mouse Strain	Mouse Source	LLNA Reference
Oxalic acid	DMF	4 10 25	4.4 4.5 5	2.4	588	N	CBA/Ca	B&K Universal, Sollentuna, Sweden	(Montelius et al. 1994)
Oxazolone	ACE	0.0001 0.005 0.05	1.6 8.7 55.2	0.001	0.27	Y[109]	CBA/J	Jackson Laboratories, Bar Harbor, ME	(Gerberick et al. 1992)
Oxazolone	AOO	0.0025 0.005 0.01 0.025 0.5	3.8 6.2 7.7 15 23	0.0007	0.18	N	CBA/JHsd	Harlan Sprague Dawley, Inc., Frederick, MD	(Loveless et al. 1996)
Oxazolone	AOO	0.0025 0.005 0.01 0.025 0.5	3.9 4.8 6 12 13	0.0014	0.35	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Loveless et al. 1996)
Oxazolone	AOO	0.0025 0.005 0.01 0.025 0.05	3.4 4.4 4 5.9 8.9	0.002	0.50	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Loveless et al. 1996)
Oxazolone	AOO	0.0025 0.005 0.01 0.025 0.5	4 6.9 16 40 59	0.0025	0.63	Y[110]	CBA/JHsd	Harlan Sprague Dawley, Inc., Frederick, MD	(Loveless et al. 1996)

[109] LLNA protocol modifications included daily treatment for 4, rather than 3, consecutive days and injection of ^{3}H-methyl thymidine on the fifth day.
[110] LLNA protocol modifications included daily treatment for 4, rather than 3, consecutive days and injection of ^{3}H-methyl thymidine on the fifth day.

Chemical Name	LLNA Vehicle	Conc. (%)	SI	EC3 (%)	EC3 (μg/cm^2)	Nonstd. LLNA Protocol	Mouse Strain	Mouse Source	LLNA Reference
Oxazolone	AOO	0.0025 0.005 0.01 0.025 0.05	2.9 4.9 12 22 33	0.003	0.75	Y[111]	CBA/JHsd	Harlan Sprague Dawley, Inc., Frederick, MD	(Gerberick et al. 2005) [EC3]; (Loveless et al. 1996) [Dose-response data]
Oxazolone	AOO	0.1 0.25 0.5	19.4 24.2 32	0.0044	1.1	N	CBA/Ca	B&K Universal, Sollentuna, Sweden	(Montelius et al. 1994)
Oxazolone	Not specified	NA	NA	0.013	3.3	NA	NA	NA	(Estrada et al. 2003)
Oxyfluorfen EC	Pluronic L92	NA	NA	NC	NC	N	CBA/Ca	NA	(ECPA 2007f)
Oxyfluorfen EC	Pluronic L92	1 7 33	0.81 1.42 4.91	18.8	4700	N	CBA/J	R. Janvier, Le Genest St Isle, France	(ECPA 2007i)
Oxyfluorfen EC	Pluronic L92	1 7 33	1.13 1.49 3.14	30.8	7700	N	CBA/JHsd	NA	(ECPA 2007g)
Oxyfluorfen EC	Pluronic L92	1 7 33	1.2 1.2 5.4	18.1	4525	N	CBA/CaOlaHsd	NA	(ECPA 2007h)
Palmarosa oil	EtOH/DEP (1:3)	2.5 5 10 25 50	1.1 2.1 3.1 3.6 5	9.6	2400	N	CBA/Ca	Harlan Interfauna UK, Shaw's Farm, Blackthorne, Bicester, Oxon, UK	(Lalko and Api 2006)
Penicillin G	DMF	10 25 50	5.6 6.9 17	1.6	400	N	CBA/Ca	Barriered Animal Breeding Unit, Alderley Park, UK	(Scholes et al. 1992)

[111] LLNA protocol modifications included daily treatment for 4, rather than 3, consecutive days and injection of ^{3}H-methyl thymidine on the fifth day.

Chemical Name	LLNA Vehicle	Conc. (%)	SI	EC3 (%)	EC3 (μg/cm^2)	Nonstd. LLNA Protocol	Mouse Strain	Mouse Source	LLNA Reference
Penicillin G	DMF	5 10 25 50	1.1 2.7 6.3 6.5	11.7	2933	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Scholes et al. 1992)
Penicillin G	DMF	5 10 25	1 3.8 8.9	8.7	2165	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Scholes et al. 1992)
Penicillin G	DMSO	2.5 5.0 10.0 25.0 50.0	1.0 1.0 1.4 2.1 6.6	31.3	7825	N	CBA/Ca	Harlan Seralab, Bicester, Oxfordshire, UK	(Gerberick et al. 2005) [EC3]; (Kimber et al. 1998)
Penicillin G	DMSO	10 25 50	1.5 3.8 8.9	19.8	4946	Y[112]	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Basketter and Scholes 1992); (Scholes et al. 1992)
Penicillin G	DMSO	2.5 5.0 10.0 25.0 50.0	1.3 1.7 1.9 4.0 4.6	16.1	4025	N	CBA/Ca	Harlan Seralab, Bicester, Oxfordshire, UK	(Kimber et al. 1998)
Penicillin G	DMSO	2.5 5.0 10.0 25.0 50.0	0.8 0.7 0.8 1.3 3.4	46.4	11600	N	CBA/JHsd	Harlan Sprague-Dawley, Indianapolis, IN or Jackson Labs, Bar Harbor, ME	(Kimber et al. 1998)

[112] Protocol used both sexes, and the test duration was 4 or 5 days.

Chemical Name	LLNA Vehicle	Conc. (%)	SI	EC3 (%)	EC3 (μg/cm^2)	Nonstd. LLNA Protocol	Mouse Strain	Mouse Source	LLNA Reference
Penicillin G	DMSO	2.5 5.0 10.0 25.0 50.0	0.9 1.0 0.8 1.3 3.4	46.5	11625	N	CBA/JHsd	Harlan Sprague-Dawley, Indianapolis, IN or Jackson Labs, Bar Harbor, ME	(Kimber et al. 1998)
Penicillin G	DMSO	2.5 5.0 10.0 25.0 50.0	0.6 0.8 1.3 1.9 3.6	41.1	10275	N	CBA/JHsd	Harlan Sprague-Dawley, Indianapolis, IN or Jackson Labs, Bar Harbor, ME	(Kimber et al. 1998)
Penicillin G	DMSO	NA	NA	16.7	4175	NA	NA	NA	(Basketter et al. 2007)
Penicillin G	DMSO	NA	NA	17.9	4475	NA	NA	NA	(Basketter et al. 2007)
Pentachlorophenol	DMSO	10 25 50	2.1 3.5 5.4	20.0	5000	NA	NA	NA	(Gerberick et al. 2005) [EC3]; (Basketter et al. 1996) [Dose-response data]
Pentaerythritol triacrylate	ACE	0.005 0.01 0.05 0.1	1.19 0.92 1.68 2.43	NC	NC	Y[113]	BALB/c	Charles River, Laboratories	(NTP 1997b)
Perillaldehyde	AOO	0.5 1.0 2.5 5.0	1.2 1.1 0.9 4.3	8.1	2025	NA	NA	NA	(Gerberick et al. 2005)
Perillaldehyde	AOO	NA	NA	7.8	1950	NA	NA	NA	(Basketter et al. 2007)

[113] Mouse strain was not CBA.

Chemical Name	LLNA Vehicle	Conc. (%)	SI	EC3 (%)	EC3 (μg/cm^2)	Nonstd. LLNA Protocol	Mouse Strain	Mouse Source	LLNA Reference
Perillaldehyde	NA	NA	NA	7.95	1988	NA	NA	NA	(Estrada et al. 2003)
Peru balsam absolute	EtOH/DEP (1:3)	NA	NA	2.50	625	N	NA	NA	(RIFM 2007)
Phenyl benzoate	AOO	NA	NA	19.6	4900	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Basketter et al. 2005)
Phenyl benzoate	AOO	NA	NA	17.1	4263	NA	NA	NA	(Estrada et al. 2003)
Phenyl benzoate	AOO	1 2.5 5 10 25	2 6.4 9.3 8.7 11.1	1.2	300	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Basketter et al. 1999c)
Phenyl benzoate	AOO	5 10.0 25	2.3 2.1 3.5	20	5000	N	NA	NA	(Gerberick et al. 2005)
Phenylacetaldehyde	AOO	1 2.5 5 10.0 25	0.7 1.8 7.8 8.8 19	3.0	750	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Gerberick et al. 2005) [EC3]; (Basketter et al. 2001) [Dose-response data]
Phenylacetaldehyde	AOO	NA	NA	4.7	1175	NA	NA	NA	(Basketter et al. 2002)
Phenylacetaldehyde	AOO	25 50 100	15.5 23.8 24.1	8.8	2200	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Ryan et al. 2000)
4-Phenylenediamine	AOO	2.5 5 10	18.6 20 37.4	0.001	0.28	Y[114]	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Kimber et al. 1991)
4-Phenylenediamine	AOO	0.4 2	10.4 16.3	0.05	13	N	CBA/Ca	B&K Universal, Sollentuna, Sweden	(Montelius et al. 1994)

[114] Protocol did not specify sex, and the test duration was 4 days.

Chemical Name	LLNA Vehicle	Conc. (%)	SI	EC3 (%)	EC3 (μg/cm^2)	Nonstd. LLNA Protocol	Mouse Strain	Mouse Source	LLNA Reference
4-Phenylenediamine	AOO	0.05 0.1 0.25 0.5 1	2.6 4.7 10.3 15.5 14.2	0.06	15	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Warbrick et al. 1999b)
4-Phenylenediamine	AOO	0.05 0.1 0.25 0.5 1	2.2 4.2 13.73 20.77 25.28	0.07	18	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Warbrick et al. 1999b)
4-Phenylenediamine	AOO	NA	NA	0.08	20	N	CBA/Ca	NA	(Basketter et al. 2007)
4-Phenylenediamine	AOO	0.05 0.1 0.25 0.5 1	2 3.3 10.2 20.5 26.4	0.10	25	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Warbrick et al. 1999b)
4-Phenylenediamine	AOO	NA	NA	0.12	30	NA	NA	NA	(Basketter et al. 2007)
4-Phenylenediamine	AOO	0.01 0.025 0.05 0.1 0.25	0.9 1.5 1.3 1.9 7.1	0.13	33	Y[115]	CBA/Ca	RCC Basel, Itingen, Switzerland	(White et al. 2006)
4-Phenylenediamine	AOO	NA	NA	0.14	35	NA	NA	NA	(Basketter et al. 2007)

[115] Protocol used both sexes of mice.

Chemical Name	LLNA Vehicle	Conc. (%)	SI	EC3 (%)	EC3 (μg/cm^2)	Nonstd. LLNA Protocol	Mouse Strain	Mouse Source	LLNA Reference
4-Phenylenediamine	AOO	0.05 0.1 0.25 0.5 1	1.59 2.62 5.64 9.51 9.44	0.15	38	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Warbrick et al. 1999b)
4-Phenylenediamine	AOO	0.05 0.1 0.25 0.5 1	1.9 2.3 4 5.7 6.6	0.16	40	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Gerberick et al. 2005) [EC3]; (Warbrick et al. 1999b) [Dose-response data]
4-Phenylenediamine	AOO	NA	NA	0.18	45	NA	NA	NA	(Basketter et al. 2007)
4-Phenylenediamine	AOO	0.05 0.1 0.25 0.5 1	1.1 2.2 3.5 7.6 4.6	0.20	50	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Warbrick et al. 1999b)
4-Phenylenediamine	AOO	2.5 5 10	21 26 75.3	0.2	52	Y[116]	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Kimber et al. 1991)
4-Phenylenediamine	AOO	2.5 5 10	12.8 16.5 23.3	0.4	100	Y[117]	CBA/Ca	Animal Breeding Unit, Unilever Environmental Safety Laboratory	(Kimber et al. 1991); (Basketter and Scholes 1992)
4-Phenylenediamine	AOO	2.5 5	6.5 23.7	2.2	543	Y[118]	CBA/Ca	Animal Breeding Unit, Alderley Park, UK	(Kimber et al. 1991)
4-Phenylenediamine	NA	NA	NA	0.29	73	NA	NA	NA	(Estrada et al. 2003)

[116] Protocol did not specify sex, and the test duration was 4 days.
[117] Protocol did not specify sex, and the test duration was 4 days.
[118] Protocol did not specify sex, and the test duration was 4 days.

Chemical Name	LLNA Vehicle	Conc. (%)	SI	EC3 (%)	EC3 (μg/cm^2)	Nonstd. LLNA Protocol	Mouse Strain	Mouse Source	LLNA Reference
Phenylpropionaldehyde	AOO	NA	NA	6.3	1575	NA	NA	NA	(Schneider and Akkan 2004)
Phthalic anhydride	AOO	NA	NA	0.36	90	NA	NA	NA	(Basketter and Kimber 2006)
Potassium dichromate	DMF	0.025 0.05 0.1 0.25 0.5	2.9 4.3 9.1 15.1 22.6	0.33	83	N	CBA/J	Jackson Laboratories, Bar Harbor, ME	(Ryan et al. 2002)
Potassium dichromate	DMSO	0.25 0.5	8.8 10.1	0.01	2.8	Y[119]	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Kimber et al. 1991)
Potassium dichromate	DMSO	0.1 0.25 0.5	3.5 10.2 10.4	0.03	7.5	Y[120]	CBA/Ca	NA	(Basketter and Scholes 1992)
Potassium dichromate	DMSO	0.025 0.05 0.1 0.25 0.5	1.4 2.5 9.5 25.9 10.1	0.05	13	N	CBA/J	Jackson Laboratories, Bar Harbor, ME	(Ryan et al. 2002)
Potassium dichromate	DMSO	0.025 0.05 0.1 0.25 0.5	1.7 2.9 4.5 10.4 19.1	0.058	15	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Kimber et al. 1995)
Potassium dichromate	DMSO	0.1 0.25 0.5	7.9 22.6 33.6	0.07	18	Y[121]	CBA/Ca	Animal Breeding Unit, Alderley Park, UK	(Kimber et al. 1991)

[119] Protocol did not specify sex, and the test duration was 4 days.
[120] Protocol used both sexes, and the test duration was 4 or 5 days.
[121] Protocol did not specify sex, and the test duration was 4 days.

Chemical Name	LLNA Vehicle	Conc. (%)	SI	EC3 (%)	EC3 (μg/cm^2)	Nonstd. LLNA Protocol	Mouse Strain	Mouse Source	LLNA Reference
Potassium dichromate	DMSO	0.025 0.05 0.1 0.25 0.5	1.6 1.4 3.8 5.3 16.1	0.08	20	Y[122]	CBA/J	Harlan Sprague Dawley Inc., Indianapolis, IN	(Gerberick et al. 2005) [EC3] ; (Kimber et al. 1995) [Dose-response data]
Potassium dichromate	DMSO	0.025 0.05 0.1 0.25 0.5	1.9 1.7 2.2 5.9 13	0.122	31	N	CBA/J	Harlan Sprague Dawley Inc., Indianapolis, IN	(Kimber et al. 1995)
Potassium dichromate	DMSO	0.025 0.05 0.1 0.25 0.5	1.2 2.1 3.4 4.5 11.2	0.132	33	Y[123]	CBA/J	Harlan Sprague Dawley Inc., Indianapolis, IN	(Kimber et al. 1995)
Potassium dichromate	DMSO	0.025 0.05 0.1 0.25 0.5	1.1 1.3 2.3 5.1 13.1	0.15	38	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Kimber et al. 1995)
Potassium dichromate	DMSO	0.1 0.25 0.5	1.8 5.1 6.9	0.15	39	Y[124]	CBA/Ca	Animal Breeding Unit, Unilever Environmental Safety Laboratory	(Kimber et al. 1991)
Potassium dichromate	DMSO	0.1 0.25 0.5	2.0 4.1 5.4	0.17	43	Y[125]	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Kimber et al. 1991)

[122] LLNA protocol modifications included daily treatment for 4, rather than 3, consecutive days and injection of ^{3}H-methyl thymidine on the fifth day.
[123] LLNA protocol modifications included daily treatment for 4, rather than 3, consecutive days and injection of ^{3}H-methyl thymidine on the fifth day.
[124] Protocol did not specify sex, and the test duration was 4 days.
[125] Protocol did not specify sex, and the test duration was 4 days.

Chemical Name	LLNA Vehicle	Conc. (%)	SI	EC3 (%)	EC3 (μg/cm^2)	Nonstd. LLNA Protocol	Mouse Strain	Mouse Source	LLNA Reference
Potassium dichromate	DMSO	0.5 1 2.5 5	2.12 3.07 4.01 3.8	0.96	240	Y[126]	CBA/N	Japan SLC Inc., Shizuoka, Japan	(Ikarashi et al. 1992)
Potassium dichromate	NA	NA	NA	0.1	25	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Basketter et al. 1999c)
Potassium dichromate	Pluronic L92	0.02 0.1 0.5	2.4 2.9 7.9	0.11	28	N	CBA/J	Jackson Laboratories, Bar Harbor, ME	(ECPA 2006c)
Potassium dichromate	Pluronic L92	0.025 0.05 0.1 0.25 0.5	1.1 1.1 1.4 4.9 5.4	0.17	42	N	CBA/J	Jackson Laboratories, Bar Harbor, ME	(Ryan et al. 2002)
Potassium dichromate	Pluronic L92	0.02 0.1 0.5	1.4 1.8 7.8	0.18	45	N	CBA/JHsd	NA	(ECPA 2007j)
Potassium dichromate	Pluronic L92	0.02 0.1 0.5	1.06 1.04 5.55	0.3	75	N	CBA/J	R. Janvier, Le Genest St Isle, France	(ECPA 2007i)
Potassium dichromate	Pluronic L92	0.02 0.1 0.5	1.7 1.5 4.1	0.33	83	N	CBA/CaHsdRCC (SPF)	NA	(ECPA 2006d)
Produkt P-4G	AOO	1 3 9 15	2.4 2.5 1.9 2.5	NC	NC	N	CBA	NA	(Haist et al. 2007)
Propylene glycol	Water	50.0 100.0	1.2 1.6	NC	NC	N	CBA	NA	(Basketter 1998)

[126] Test was terminated 24 hours after the last topical exposure.

Chemical Name	LLNA Vehicle	Conc. (%)	SI	EC3 (%)	EC3 (μg/cm^2)	Nonstd. LLNA Protocol	Mouse Strain	Mouse Source	LLNA Reference
Propyl gallate	AOO	5 10 25	22.3 18.3 33.6	0.32	80	Y[127]	CBA/Ca	NA	(Basketter and Scholes 1992)
Propylidene phthalate	AOO	5 10.0 25	4.9 9.1 15.1	3.7	925	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Ryan et al. 2000)
Propylparaben	AOO	5 10.0 25	1.4 1.6 1.3	NC	NC	Y[128]	CBA/Ca	NA	(Basketter and Scholes 1992)
Pyridine	AOO	25 50 100	1.1 2.3 3.9	71.9	17975	NA	NA	NA	(Basketter et al. 1996)
Quinoxyfen/cyproconazole	Pluronic L92	7 33 100	2.09 10.66 20.3	9.8	2440	N	CBA/Ca	NA	(ECPA 2007g)
Quinoxyfen/cyproconazole	Pluronic L92	7 33 100	1.2 7.2 12.4	14.8	3700	N	CBA/J	R. Janvier, Le Genest St Isle, France	(ECPA 2007i)
Quinoxyfen/cyproconazole	Pluronic L92	12.5 25 50 75 100	2 2.3 8.6 15.8 30.1	27.8	6944	N	CBA/J	Jackson Laboratories, Bar Harbor, ME	(ECPA 2006c)
Quinoxyfen/cyproconazole	Pluronic L92	7 33 100	0.4 3.8 2.0	26.9	6721	N	CBA/J	Jackson Laboratories, Bar Harbor, ME	(ECPA 2006c)

[127] Protocol used both sexes, and the test duration was 4 or 5 days.
[128] Protocol used both sexes, and the test duration was 4 or 5 days.

Chemical Name	LLNA Vehicle	Conc. (%)	SI	EC3 (%)	EC3 (μg/cm^2)	Nonstd. LLNA Protocol	Mouse Strain	Mouse Source	LLNA Reference
Quinoxyfen/cyproconazole	Pluronic L92	7 33 100	1.35 1.95 6.2	49.8	12438	N	CBA/JHsd	NA	(ECPA 2007g)
Quinoxyfen/cyproconazole	Pluronic L92	7 33 100	1.3 6.5 13.6	15.5	3875	N	CBA/CaOla Hsd	NA	(ECPA 2007g)
Quinoxyfen SC	Pluronic L92	7 33 100	1.1 1.7 0.8	NC	NC	N	CBA/J	Jackson Laboratories, Bar Harbor, ME	(ECPA 2006c)
Resorcinol	AOO	1 2.5 5 10 25	1.8 2.3 2.6 6.3 10.1	5.5	1385	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Basketter et al. 2007)
Resorcinol	AOO	1 5 10 25 50	0.7 2.2 5.2 8.4 10.4	6.3	1583	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Basketter et al. 2007)
Resorcinol	AOO	0.1 0.25 0.5 1 2.5	0.4 0.2 0.5 0.8 1	NC	NC	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Basketter et al. 2007)
Resorcinol	DMF	5 10 25	2.2 2.2 2.7	NC	NC	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Basketter et al. 1994)

Chemical Name	LLNA Vehicle	Conc. (%)	SI	EC3 (%)	EC3 (μg/cm^2)	Nonstd. LLNA Protocol	Mouse Strain	Mouse Source	LLNA Reference
Salicylic acid	ACE	1 10 20	0.9 1.8 7.2	12.2	3056	Y[129]	CBA/J	Jackson Laboratories, Bar Harbor, ME	(Gerberick et al. 1992)
Salicylic acid	AOO	5 10.0 25	0.8 1.5 2.5	NC	NC	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Basketter et al. 1994)
Sodium lauryl sulfate	DMF	1 2.5 5 10 20	2.7 4.2 4.6 8.9 8.6	1.5	375	Y[130]	CBA/JHsd	Harlan Sprague Dawley Inc., Frederick, MD	(Loveless et al. 1996)
Sodium lauryl sulfate	DMF	4 10 25	4.1 5.1 6.7	1.7	435	N	CBA/Ca	B&K Universal, Sollentuna, Sweden	(Montelius et al. 1994)
Sodium lauryl sulfate	DMF	5 10 25	4 5.1 7.6	2.7	665	N	CBA/Ca	B&K Universal, Sollentuna, Sweden	(Montelius et al. 1994)
Sodium lauryl sulfate	DMF	1 2.5 5 10 20	1.2 1.7 4.3 5.4 8	4.0	1000	N	CBA/JHsd	Harlan Sprague Dawley Inc., Frederick, MD	(Loveless et al. 1996)
Sodium lauryl sulfate	Pluronic L92	5 10 25	3.05 4.78 8.46	4.9	1225	N	CBA/CaOla Hsd	Harlan Winkelmann GmbH, D-33178 Borchen	(Gamer et al. 2008)

[129] LLNA protocol modifications included daily treatment for 4, rather than 3, consecutive days and injection of ^{3}H-methyl thymidine on the fifth day.
[130] LLNA protocol modifications included daily treatment for 4, rather than 3, consecutive days and injection of ^{3}H-methyl thymidine on the fifth day.

Chemical Name	LLNA Vehicle	Conc. (%)	SI	EC3 (%)	EC3 (μg/cm^2)	Nonstd. LLNA Protocol	Mouse Strain	Mouse Source	LLNA Reference
Sodium lauryl sulfate	DMF	1 2.5 5 10 20	1.5 2.3 3.8 4.1 5.3	4.4	1100	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Loveless et al. 1996)
Sodium lauryl sulfate	DMF	1 2.5 5 10 20	0.9 1.1 1.7 2.6 3.5	13.4	3350	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Loveless et al. 1996)
Sodium lauryl sulfate	DMF	1 2.5 5 10 20	1.6 2.1 2.8 1.6 3.6	17.1	4275	Y[131]	CBA/JHsd	Harlan Sprague Dawley Inc., Frederick, MD	(Loveless et al. 1996)
Sodium lauryl sulfate	DMSO	5 10 25	3.5 4 4.2	2.5	625	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Basketter et al. 1994)
Sodium lauryl sulfate	DMSO	5 10 25	3.2 4 4.2	3.1	773	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Gerberick et al. 2005) [EC3] (Basketter et al. 1996) [Dose-response data]
Spearmint oil	EtOH/DEP (1:3)	0.5 1 2.5 5 10	1.2 1.1 1.2 1.9 3.6	8.2	2050	N	CBA/Ca	Harlan Interfauna UK, Shaw's Farm, Blackthorne, Bicester, Oxon, UK	(Lalko and Api 2006)

[131] LLNA protocol modifications included daily treatment for 4, rather than 3, consecutive days and injection of ^{3}H-methyl thymidine on the fifth day.

Chemical Name	LLNA Vehicle	Conc. (%)	SI	EC3 (%)	EC3 (μg/cm^2)	Nonstd. LLNA Protocol	Mouse Strain	Mouse Source	LLNA Reference
Squalene	AOO	10 25 50	3.8 6.9 8.2	7.9	1975	N	CBA/CaOla Hsd	Harlan Winkelmann GmbH, D-33178 Borchen	(EFfCI 2006)
Streptomycin	DMF	2.5 5 10.0 25 50	1.4 1.6 2.1 2.9 3.2	33	8250	Y[132]	CBA/Ca	Harlan Seralab, Bicester, Oxfordshire, UK	(Kimber et al. 1998)
Streptomycin	DMF	2.5 5 10.0 25 50	1.2 1.4 1.3 2 1.9	NC	NC	N	CBA/JHsd	Harlan Sprague-Dawley, Indianapolis, IN or Jackson Labs, Bar Harbor, ME	(Kimber et al. 1998)
Streptomycin	DMF	2.5 5.0 10.0 25.0 50.0	1.3 1.2 1 1.2 1.3	NC	NC	Y[133]	CBA/Ca	Harlan Seralab, Bicester, Oxfordshire, UK	(Kimber et al. 1998)
Streptomycin	DMF	2.5 5.0 10.0 25.0 50.0	1.7 0.8 0.6 1.1 1.2	NC	NC	N	CBA/JHsd	Harlan Sprague-Dawley, Indianapolis, IN or Jackson Labs, Bar Harbor, ME	(Kimber et al. 1998)
Streptomycin	DMF	2.5 5.0 10.0 25.0 50.0	1 0.8 0.9 1.1 1.3	NC	NC	N	CBA/JHsd	Harlan Sprague-Dawley, Indianapolis, IN or Jackson Labs, Bar Harbor, ME	(Kimber et al. 1998)

[132] The LLNA protocol used both sexes of mice.
[133] The LLNA protocol used both sexes of mice.

Chemical Name	LLNA Vehicle	Conc. (%)	SI	EC3 (%)	EC3 (μg/cm^2)	Nonstd. LLNA Protocol	Mouse Strain	Mouse Source	LLNA Reference
Succinic acid	DMSO	5 10 25	1.2 1.2 1.3	NC	NC	N	CBA/CaOla Hsd	Harlan Winkelmann GmbH, D-33178 Borchen	(EFfCI 2006)
Sulfanilamide	DMF	10.0 25.0 50.0	1.0 1 0.9	NC	NC	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Basketter et al. 1994)
Sulfanilic acid	DMF	5 10 25	1.5 1.9 2.2	NC	NC	Y[134]	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Basketter et al. 1992)
Sulfanilic acid	DMF	5 10 25	1.1 1.2 1.3	NC	NC	Y[135]	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Basketter et al. 1992)
Sulfanilic acid	DMF	5 10 25	1.9 1.2 1.8	NC	NC	Y[136]	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Basketter et al. 1992)
Sulfanilic acid	DMSO	2.5 5 10	1.3 1.3 1.5	NC	NC	Y[137]	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Basketter et al. 1992)
Tartaric acid	DMF	5 10 25	1 0.9 1.5	NC	NC	N	NA	NA	(Gerberick et al. 2005)
Tea leaf absolute	DMF	NA	NA	NC	NC	N	NA	NA	(RIFM 2007)
Tetrachlorosalicylanilide	ACE	0.25 0.5 1	11.2 14.4 18	0.04	10	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Basketter et al. 1994)

[134] Protocol used both sexes.
[135] Protocol used both sexes.
[136] Protocol used both sexes.
[137] Protocol used both sexes, and the test duration was 4 days.

Chemical Name	LLNA Vehicle	Conc. (%)	SI	EC3 (%)	EC3 (μg/cm^2)	Nonstd. LLNA Protocol	Mouse Strain	Mouse Source	LLNA Reference
Tetrachlorosalicylanilide	ACE	0.1 0.25 0.5	16 27.8 40.5	0.03	7.8	N	CBA/Ca	Harlan Olac Ltd.	(Scholes et al. 1991)
Tetramethylthiruamdisulphide	AOO	2.5 5 10.0	2.4 2.9 5.1	5.2	1300	NA	NA	NA	(Basketter et al. 1996)
Tetramethylthiruamdisulphide	AOO	NA	NA	6.0	1500	NA	NA	NA	(Basketter and Kimber 2001)
Thioglycerol	DMF	10 25 50	6.7 10 10	3.6	895	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Basketter et al. 1994)
Toluene 2,4-diisocyanate	AOO	NA	NA	0.1	28	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Basketter et al. 2003b)
Treemoss	EtOH/DEP (1:3)	NA	NA	NC	NC	N	NA	NA	(RIFM 2007)
Trifluralin EC	Pluronic L92	7 33 100	5.96 30.04 75.24	5.8	1446	N	CBA/Ca	NA	(ECPA 2007c)
Trifluralin EC	Pluronic L92	7 33 100	1.9 8.7 25.7	11.2	2801	N	CBA/J	R. Janvier, Le Genest St Isle, France	(ECPA 2007i)
Trifluralin EC	Pluronic L92	7 33 100	3.1 26.3 61.5	7.0	1738	N	CBA/J	Jackson Laboratories, Bar Harbor, ME	(ECPA 2006c)
Trifluralin EC	Pluronic L92	7 33 100	1.03 6.98 16.12	15.6	3902	N	CBA/JHsd	NA	(ECPA 2007g)
Trifluralin EC	Pluronic L92	7 33 100	1.8 8.2 20.5	11.9	2969	N	CBA/CaOlaHsd	NA	(ECPA 2007k)

Chemical Name	LLNA Vehicle	Conc. (%)	SI	EC3 (%)	EC3 (μg/cm^2)	Nonstd. LLNA Protocol	Mouse Strain	Mouse Source	LLNA Reference
Trimellitic anhydride	NA	NA	NA	0.22	55	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Basketter et al. 2003b)
Tween 80	AOO	NA	NA	NC	NC	NA	NA	NA	(Basketter et al. 2000)
Undec-10-enal	AOO	5.0 10.0 25.0 50.0 75.0	1.7 5.3 7.5 8.7 8.8	6.8	1700	NA	NA	NA	(Patlewicz et al. 2002)
Undecylenic acid	AOO	10 25 50	2.5 3.3 4.4	19.4	4844	N	CBA/CaOla Hsd	Harlan Winkelmann GmbH, D-33178 Borchen	(EFfCI 2006)
Vanillin	AOO	2.5 5 10.0 25 50	0.9 1.4 1.5 1.2 1.4	NC	NC	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Basketter et al. 2001)
Xylene	AOO	NA	NA	95.8	23950	NA	NA	NA	(Estrada et al. 2003)
YELLOW E-JD 3442	AOO	1 3 9 15	1 0.8 0.9 0.9	NC	NC	N	CBA	NA	(Haist et al. 2007)
Ylang Ylang	EtOH/DEP (1:3)	NA	NA	6.80	1700	N	NA	NA	(RIFM 2007)
Zinc sulfate	DMSO	5 10 25	1.3 2 2.3	NC	NC	N	CBA/Ca	Harlan Olac Ltd., Bicester, Oxon, UK	(Basketter et al. 1999b)

Abbreviations: ACE = acetone; AO Mix = antioxidant mixture of 0.3% butylated hydroxytoluene/tocopherol/eugenol (0.1% each); AOO = acetone: olive oil (1:4 by volume); Conc. = concentration; DEP = diethylphthalate; DMF = dimethylformamide; DMSO = dimethylsulfoxide; EtOH = ethanol; EC3 = estimated concentration of a substance expected to produce a stimulation index of 3, the threshold value for a substance to be considered a sensitizer in the LLNA; LLNA = murine local lymph node assay; MEK = methyl ethyl ketone; N = no; NA = not available; NC = not calculated because SI < 3; Nonstd. = nonstandard; Pet. = petrolatum; PG = propylene glycol; SI = stimulation index; Toc = tocopherol; TrlC = Trolox C; UK = United Kingdom; Y = yes.

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