

Supplementary Materials: Quality matters: Systematic Analysis of Endpoints Related to “Cellular Life” in Vitro Data of Radiofrequency Electromagnetic Field Exposure

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Table S1. List of selected publications and extracted experiments related to apoptosis and cell proliferation after exposure to RF-EMF.

References	Cells	Primary Cell	Cell Line	Frequency	Power Flux Density	SAR (W/Kg)	Time of Exposure	Apoptosis	Response	Proliferation	Response	Donors/ n Numbers	p Value	Sham	Dosimetry	Positive Control	Blind	Temperature Control
[1]	Human peripheral blood lymphocytes	x		380 MHz		0.08	48 h			x	no	15	<0.05	no	yes	no	no	yes
	Human peripheral blood lymphocytes	x		900 MHz		0.208	48 h			x	no	15	<0.05	no	yes	no	no	yes
	Human peripheral blood lymphocytes	x		1800 MHz		1.7	48 h			x	no	15	<0.05	no	yes	no	no	yes
	Human peripheral blood lymphocytes	x		380 MHz		0.08	52h			x	no	15	<0.05	no	yes	no	no	yes
	Human peripheral blood lymphocytes	x		900 MHz		0.208	52h			x	no	15	<0.05	no	yes	no	no	yes
	Human peripheral blood lymphocytes	x		1800 MHz		1.7	52h			x	no	15	<0.05	no	yes	no	no	yes
	Human peripheral blood lymphocytes	x		380 MHz		0.08	56 h			x	no	15	<0.05	no	yes	no	no	yes
	Human peripheral blood lymphocytes	x		900 MHz		0.208	56 h			x	no	15	<0.05	no	yes	no	no	yes
	Human peripheral blood lymphocytes	x		1800 MHz		1.7	56 h			x	no	15	<0.05	no	yes	no	no	yes
	Human peripheral blood lymphocytes	x		380 MHz		0.08	64 h			x	no	15	<0.05	no	yes	no	no	yes
	Human peripheral blood lymphocytes	x		900 MHz		0.208	64 h			x	no	15	<0.05	no	yes	no	no	yes
	Human peripheral blood lymphocytes	x		1800 MHz		1.7	64 h			x	no	15	<0.05	no	yes	no	no	yes
	Human peripheral blood lymphocytes	x		380 MHz		0.08	68 h			x	no	15	<0.05	no	yes	no	no	yes
	Human peripheral blood lymphocytes	x		900 MHz		0.208	68 h			x	no	15	<0.05	no	yes	no	no	yes
	Human peripheral blood lymphocytes	x		1800 MHz		1.7	68 h			x	no	15	<0.05	no	yes	no	no	yes
[2]	Human peripheral mononuclear cells	x		450 MHz	no	no	2 h	x	no			5 donors	no	no	no	no	no	no
	Human peripheral mononuclear cells	x		450 MHz	no	no	6 h	x	no			5 donors	no	no	no	no	no	no
	Human peripheral mononuclear cells	x		450 MHz	no	no	24 h	x	no			5 donors	no	no	no	no	no	no
	Human peripheral mononuclear cells	x		900 MHz	no	no	2 h	x	no			5 donors	no	no	no	no	no	no

	Human peripheral mononuclear cells	x	900 MHz	no	no	6 h	x	no		5 donors	no	no	no	no	no	no
	Human peripheral mononuclear cells	x	900 MHz	no	no	24 h	x	no		5 donors	no	no	no	no	no	no
	Human peripheral mononuclear cells	x	1784 MHz	no	no	2 h	x	no		5 donors	no	no	no	no	no	no
	Human peripheral mononuclear cells	x	1784 MHz	no	no	6 h	x	no		5 donors	no	no	no	no	no	no
	Human peripheral mononuclear cells	x	1784 MHz	no	no	24 h	x	no		5 donors	no	no	no	no	no	no
	Human peripheral mononuclear cells	x	450 MHz	no	no	2 h			x	no	5 donors	no	no	no	no	no
	Human peripheral mononuclear cells	x	450 MHz	no	no	6 h			x	no	5 donors	no	no	no	no	no
	Human peripheral mononuclear cells	x	450 MHz	no	no	24 h			x	no	5 donors	no	no	no	no	no
	Human peripheral mononuclear cells	x	900 MHz	no	no	2 h			x	no	5 donors	no	no	no	no	no
	Human peripheral mononuclear cells	x	900 MHz	no	no	6 h			x	no	5 donors	no	no	no	no	no
	Human peripheral mononuclear cells	x	900 MHz	no	no	24 h			x	no	5 donors	no	no	no	no	no
	Human peripheral mononuclear cells	x	1784 MHz	no	no	2 h			x	no	5 donors	no	no	no	no	no
	Human peripheral mononuclear cells	x	1784 MHz	no	no	6 h			x	no	5 donors	no	no	no	no	no
	Human peripheral mononuclear cells	x	1784 MHz	no	no	24 h			x	no	5 donors	no	no	no	no	no
[3]	Spermatozoa	x	2400 MHz	0.7 $\mu\text{W}/\text{cm}^2$		4 h	x	no		29 donors	<0.01	no	no	no	no	yes
	Spermatozoa	x	2400 MHz	0.7 $\mu\text{W}/\text{cm}^2$		4 h			x	yes	29 donors	<0.01	no	no	no	yes
[4]	Human lymphocytes	x	915 MHz		0.037	2 h	x	no		7	no	yes	yes	yes	yes	yes
	Human lymphocytes	x	915 MHz		0.037	2 h			x	no	7	no	yes	yes	yes	yes
[5]	RPMI 7932 cell line (human melanoma cells)	x	65 GHz	0.07 $\mu\text{Watt}/\text{cm}^2$		1 h			x	no	n.s.*	<0.05	no	no	no	no
	RPMI 7932 cell line (human melanoma cells)	x	65 GHz	0.07 $\mu\text{Watt}/\text{cm}^2$		3 h			x	yes	n.s.	<0.05	no	no	no	no
	RPMI 7932 cell line (human melanoma cells)	x	51.05 GHz	0.07 $\mu\text{Watt}/\text{cm}^2$		1 h			x	no	n.s.	<0.05	no	no	no	no
	RPMI 7932 cell line (human melanoma cells)	x	51.05 GHz	0.07 $\mu\text{Watt}/\text{cm}^2$		3 h			x	no	n.s.	<0.05	no	no	no	no
	RPMI 7932 cell line (human melanoma cells)	x	65.00 GHz	0.07 $\mu\text{Watt}/\text{cm}^2$		1 h			x	no	n.s.	<0.05	no	no	no	no
	RPMI 7932 cell line (human melanoma cells)	x	65.00 GHz	0.07 $\mu\text{Watt}/\text{cm}^2$		3 h			x	no	n.s.	<0.05	no	no	no	no
[6]	K562 cells (human erythroleukemic cell line)	x	65.00 GHz	less than 1 $\mu\text{W}/\text{cm}^2$		Intermittent			x	yes	3	<0.05	yes	no	no	no
[7]	RPMI 7932 cell line (human melanoma cells)	x	42.2 GHz	0.11 mW/cm^2		Intermittent			x	no	2	<0.05	yes	no	no	yes

	RPMI 7932 cell line (human melanoma cells)	x	53.57 GHz	0.26 mW/cm ²	Intermittent			x	no	2	<0.05	yes	no	no	no	yes
[8]	Human amniotic Cells	x	900 MHz	0.25	24 h	x	no			3	<0.05	yes	yes	yes	no	yes
[9]	Human amniotic Cells	x	900 MHz	1	24 h	x	no			3	<0.05	yes	yes	yes	no	yes
	Human amniotic Cells	x	900 MHz	2	24 h	x	no			3	<0.05	yes	yes	yes	no	yes
	Human amniotic Cells	x	900 MHz	4	24 h	x	no			3	<0.05	yes	yes	yes	no	yes
	Human amniotic Cells	x	900 MHz	0.25	24 h			x	no	3	<0.05	yes	yes	yes	no	yes
	Human amniotic Cells	x	900 MHz	1	24 h			x	no	3	<0.05	yes	yes	yes	no	yes
	Human amniotic Cells	x	900 MHz	2	24 h			x	no	3	<0.05	yes	yes	yes	no	yes
	Human amniotic Cells	x	900 MHz	4	24 h			x	no	3	<0.05	yes	yes	yes	no	yes
[10]	SH-SY5Y (human neuroblastoma cell line)	x	900 MHz	1	5 min	x	yes			3	<0.05; <0.01	yes	yes	no	yes	yes
	SH-SY5Y (human neuroblastoma cell line)	x	900 MHz	1	15 min	x	yes			3	<0.05; <0.01	yes	yes	no	yes	yes
	SH-SY5Y (human neuroblastoma cell line)	x	900 MHz	1	30 min	x	yes			3	<0.05; <0.01	yes	yes	no	yes	yes
	SH-SY5Y (human neuroblastoma cell line)	x	900 MHz	1	6 h	x	yes			3	<0.05; <0.01	yes	yes	no	yes	yes
	SH-SY5Y (human neuroblastoma cell line)	x	900 MHz	1	24 h	x	yes			3	<0.05; <0.01	yes	yes	no	yes	yes
	SH-SY5Y (human neuroblastoma cell line)	x	900 MHz	1	5 min			x	yes	3	<0.05; <0.01	yes	yes	no	yes	yes
	SH-SY5Y (human neuroblastoma cell line)	x	900 MHz	1	15 min			x	yes	3	<0.05; <0.01	yes	yes	no	yes	yes
	SH-SY5Y (human neuroblastoma cell line)	x	900 MHz	1	30 min			x	yes	3	<0.05; <0.01	yes	yes	no	yes	yes
	SH-SY5Y (human neuroblastoma cell line)	x	900 MHz	1	6 h			x	yes	3	<0.05; <0.01	yes	yes	no	yes	yes
	SH-SY5Y (human neuroblastoma cell line)	x	900 MHz	1	24 h			x	yes	3	<0.05; <0.01	yes	yes	no	yes	yes
	SH-SY5Y	x	1800 MHz	0.086	2 h	x	no			4	no	yes	no	no	no	yes
	SH-SY5Y	x	1800 MHz	0.086	4 h	x	no			4	no	yes	no	no	no	yes
[12]	Burkit lymphoma cells (Raji)	x	1800 MHz	0.35	24 h	x	yes			5	<0.05	no	yes	no	no	yes
[13]	SHG44 cells (human glioma cells)	x	900 MHz	2 mW/cm ²	Intermittent	x	no			3	<0.05	no	no	yes	no	no

	SHG44 cells (human glioma cells)	x	900 MHz	4 mW/cm ²	Intermittent	x	yes		3	<0.05	no	no	yes	no	no
	SHG44 cells (human glioma cells)	x	900 MHz	6 mW/cm ²	Intermittent	x	yes		3	<0.05	no	no	yes	no	no
	SHG44 cells (human glioma cells)	x	900 MHz	2mW/cm ²	Intermittent			x no	3	<0.05	no	no	yes	no	no
	SHG44 cells (human glioma cells)	x	900 MHz	4 mW/cm ²	Intermittent			x yes	3	<0.05	no	no	yes	no	no
	SHG44 cells (human glioma cells)	x	900 MHz	6 mW/cm ²	Intermittent			x yes	3	<0.05	no	no	yes	no	no
	Human peripheral blood mononuclear cells	x	1800 MHz		2 44 h	x	no		5-10 donors	<0.05	yes	yes	no	no	yes
[14]	Human peripheral blood mononuclear cells	x	1800 MHz		2 44 h	x	no		5-10 donors	<0.05	yes	yes	no	no	yes
	Human peripheral blood mononuclear cells	x	1800 MHz		1.4 44 h	x	no		5-10 donors	<0.05	yes	yes	no	no	yes
	Human peripheral blood mononuclear cells	x	900 MHz		0.073 Intermittent	x	no		25 donors	<0.05	yes	yes	no	no	yes
	Human peripheral blood mononuclear cells	x	900 MHz		0.073 Intermittent	x	no		25 donors	<0.05	yes	yes	no	no	yes
	Human peripheral blood mononuclear cells	x	1800 MHz		2 44 h			x no	5-10 donors	<0.05	yes	yes	no	no	yes
	Human peripheral blood mononuclear cells	x	1800 MHz		2 44 h			x no	5-10 donors	<0.05	yes	yes	no	no	yes
	Human peripheral blood mononuclear cells	x	1800 MHz		1.4 44 h			x no	5-10 donors	<0.05	yes	yes	no	no	yes
	Human peripheral blood mononuclear cells	x	900 MHz		0.073 Intermittent			x no	25 donors	<0.05	yes	yes	no	no	yes
	Human peripheral blood mononuclear cells	x	900 MHz		0.073 Intermittent			x no	25 donors	<0.05	yes	yes	no	no	yes
	Epidermoid carcinoma KB cells	x	1950 MHz		3.6 1 h	x	yes		3	<0.05	no	no	no	no	yes
[15]	Epidermoid carcinoma KB cells	x	1950 MHz		3.6 2 h	x	yes		3	<0.05	no	no	no	no	yes
	Epidermoid carcinoma KB cells	x	1950 MHz		3.6 3 h	x	yes		3	<0.05	no	no	no	no	yes
	HL-60 (human acute myeloid leukaemia cells)	x	1900 MHz		1 6 h	x	no		5	<0.05	yes	yes	no	no	no
[16]	HL-60 (human acute myeloid leukaemia cells)	x	1900 MHz		10 6 h	x	no		5	<0.05	yes	yes	no	no	no
	TK6 cells (lymphoblastoma cells)	x	1900 MHz		1 6 h	x	no		5	<0.05	yes	yes	no	no	no

	TK6 cells (lymphoblastoma cells)	x	1900 MHz	10	6 h	x	no		5	<0.05	yes	yes	no	no	no
	Mono Mac 6 cells (human monocytes),	x	1900 MHz	1	6 h	x	no		5	<0.05	yes	yes	no	no	no
	Mono Mac 6 cells (human monocytes),	x	1900 MHz	10	6 h	x	no		5	<0.05	yes	yes	no	no	no
	HL-60 (human acute myeloid leukaemia cells)	x	1900 MHz	1	6 h			x	no	5	<0.05	yes	yes	no	no
	HL-60 (human acute myeloid leukaemia cells)	x	1900 MHz	10	6 h			x	no	5	<0.05	yes	yes	no	no
	TK6 cells (lymphoblastoma cells)	x	1900 MHz	1	6 h			x	no	5	<0.05	yes	yes	no	no
	TK6 cells (lymphoblastoma cells)	x	1900 MHz	10	6 h			x	no	5	<0.05	yes	yes	no	no
	Mono Mac 6 cells (human monocytes),	x	1900 MHz	1	6 h			x	no	5	<0.05	yes	yes	no	no
	Mono Mac 6 cells (human monocytes),	x	1900 MHz	10	6 h			x	no	5	<0.05	yes	yes	no	no
[17]	Embryonic mouse neural stem cells (eNSCs)	x	1800 MHz	4	Intermittent	x	no		4	<0.05	yes	yes	yes	yes	yes
	Embryonic mouse neural stem cells (eNSCs)	x	1800 MHz	4	Intermittent			x	no	4	<0.05	yes	yes	no	yes
	Embryonic mouse neural stem cells (eNSCs)	x	1800 MHz	4	Intermittent			x	no	4	<0.05	yes	yes	no	yes
	Embryonic mouse neural stem cells (eNSCs)	x	1800 MHz	2	Intermittent			x	no	4	<0.05	yes	yes	no	yes
	Embryonic mouse neural stem cells (eNSCs)	x	1800 MHz	1	Intermittent			x	no	4	<0.05	yes	yes	no	yes
	Embryonic mouse neural stem cells (eNSCs)	x	1800 MHz	4	Intermittent			x	no	4	<0.05	yes	yes	yes	yes
	Cytolytic T lymphocytes	x	2450 MHz	50	2 h			x	yes	1	<0.05	yes	no	yes	no
[18]	CHO (Chinese hamster ovary) cells	x	27 MHz	5	2 h			x	yes	2; 7	<0.05	yes	no	no	yes
	CHO (Chinese hamster ovary) cells	x	2452 MHz	25	2 h			x	yes	2; 7	<0.05	yes	no	no	yes
	CHO (Chinese hamster ovary) cells	x	27 MHz	5	2 h			x	yes	2; 7	<0.05	yes	no	no	yes
	CHO (Chinese hamster ovary) cells	x	2453 MHz	25	2 h			x	yes	2; 7	<0.05	yes	no	no	yes
[19]	ES p53+	x	1710 MHz	1.5	48 h	x	no		2	no	yes	yes	no	yes	yes
	ES p53-	x	1710 MHz	1.5	48 h	x	yes		2	no	yes	yes	no	yes	yes
	ES p53+	x	1710 MHz	0.4	48 h	x	no		2	no	yes	yes	no	yes	yes
	ES p53-	x	1710 MHz	0.4	48 h	x	no		2	no	yes	yes	no	yes	yes
	ES p53+	x	1710 MHz	0.11	6 h	x	no		2	no	yes	yes	no	yes	yes
	ES p53-	x	1710 MHz	0.11	6 h	x	yes		2	no	yes	yes	no	yes	yes
	ES p53+	x	1710 MHz	1.5	48 h			x	no	2	no	yes	yes	no	yes

	ES p53-	x	1710 MHz	1.5	48 h			x	yes	2	no	yes	yes	no	yes	yes
	ES p53+	x	1710 MHz	0.4	48 h			x	no	2	no	yes	yes	no	yes	yes
	ES p53-	x	1710 MHz	0.4	48 h			x	no	2	no	yes	yes	no	yes	yes
	ES p53+	x	1710 MHz	0.11	6 h			x	no	2	no	yes	yes	no	yes	yes
	ES p53-	x	1710 MHz	0.11	6 h			x	yes	2	no	yes	yes	no	yes	yes
[20]	SN56 cholinergic cell line	x	900 MHz	1	24 h			x	no	4	<0.05	yes	yes	no	yes	yes
	SN56 cholinergic cell line	x	900 MHz	1	48 h			x	no	4	<0.05	yes	yes	no	yes	yes
	SN56 cholinergic cell line	x	900 MHz	1	72 h			x	no	4	<0.05	yes	yes	no	yes	yes
	Rat primary cortical neurons	x	900 MHz	1	96 h			x	yes	4	<0.05	yes	yes	no	yes	yes
[21]	Human keratinocytes (HaCaT)	x	900 MHz	0.04	18 h			x	yes	3	no	yes	yes	no	no	yes
	Human keratinocytes (HaCaT)	x	900 MHz	0.08	18 h			x	yes	3	no	yes	yes	no	no	yes
[22]	Human peripheral blood lymphocytes (hPBLs)	x	1800 MHz	0.21	6 h			x	yes	1 (in treeplicates)	<0.05	yes	yes	no	no	yes
	Human peripheral blood lymphocytes (hPBLs)	x	1800 MHz	0.21	8 h			x	yes	1 (in treeplicates)	<0.05	yes	yes	no	no	yes
	Human peripheral blood lymphocytes (hPBLs)	x	1800 MHz	0.21	24 h			x	yes	1 (in treeplicates)	<0.05	yes	yes	no	no	yes
	Human peripheral blood lymphocytes (hPBLs)	x	1800 MHz	0.21	48 h			x	yes	1 (in treeplicates)	<0.05	yes	yes	no	no	yes
[23]	Spermatozoa	x	900 MHz	2	1 h	x	no			12	no	no	yes	no	no	yes
	Spermatozoa	x	900 MHz	5.7	1 h	x	no			12	no	no	yes	no	no	yes
[24]	U-87 MG, human astrocytoma cell line	x	835 MHz	40 W/cm ²	Intermittent			x	no	8	0.018	yes	no	no	no	yes
	U-87 MG, human astrocytoma cell line	x	835 MHz		Intermittent			x	yes	8	0.02	yes	no	no	no	yes
[25]	U937	x	900 MHz	0.2	2 h	x	no			6	<0.05	yes	yes	yes	no	yes
	SK-N-SH (human neuroblastoma) cell line	x	900 MHz	0.2	2 h			x	no	6	<0.05	yes	yes	yes	no	yes
[26]	C3h 10t1/2	x	835.62 MHz	0.6	13 h			x	no	3	<0.05	yes	yes	no	no	yes
	C3h 10t1/3	x	835.62 MHz	0.6	100 h			x	no	4	<0.05	yes	yes	no	no	yes
	C3h 10t1/4	x	847.74 MHz	0.6	13 h			x	no	5	<0.05	yes	yes	no	no	yes
	C3h 10t1/5	x	847.74 MHz	0.6	100 h			x	no	6	<0.05	yes	yes	no	no	yes
	U87mg	x	835.62 MHz	0.6	13 h			x	no	7	<0.05	yes	yes	no	no	yes
	U87mg	x	835.62 MHz	0.6	100 h			x	no	8	<0.05	yes	yes	no	no	yes
	U87mg	x	847.74 MHz	0.6	13 h			x	no	9	<0.05	yes	yes	no	no	yes
	U87mg	x	847.74 MHz	0.6	100 h			x	no	3	<0.05	yes	yes	no	no	yes
[27]	Human hacat cells, AL cells (human-hamster hybrid cells)	x	900 MHz	5 V/m	30 min			x	no	3	<0.05	no	no	no	yes	yes
	Human hacat cells, AL cells (human-hamster hybrid cells)	x	900 MHz	10 V/m	30 min			x	no	3	<0.05	no	no	no	yes	yes

	Human hacat cells, AL cells (human-hamster hybrid cells)	x	900 MHz	30 V/m	30 min		x	no	3	<0.05	no	no	no	yes	yes
	Human hacat cells, AL cells (human-hamster hybrid cells)	x	900 MHz	90 V/m	30 min		x	no	3	<0.05	no	no	no	yes	yes
[28]	Hacat human dermal fibroblasts	x	106 GHz	0.04 mW/cm ²	2 h		x	no	3	no	yes	no	yes	yes	yes
	Hacat human dermal fibroblasts	x	106 GHz	0.39 mW/cm ²	2 h		x	no	3	no	yes	no	yes	yes	yes
	Hacat human dermal fibroblasts	x	106 GHz	0.88 mW/cm ²	2 h		x	no	3	no	yes	no	yes	yes	yes
	Hacat human dermal fibroblasts	x	106 GHz	0.88 mW/cm ²	8 h		x	no	3	no	yes	no	yes	yes	yes
[29]	A172 glioblastoma	x	2140 MHz	0.08	24 h	x	no		2 with triplicates	<0.01	yes	yes	no	yes	yes
	A172 glioblastoma	x	2140 MHz	0.08	48 h	x	no		2 with triplicates	<0.01	yes	yes	no	yes	yes
	A172 glioblastoma	x	2140 MHz	0.25	24 h	x	no		2 with triplicates	<0.01	yes	yes	no	yes	yes
	A172 glioblastoma	x	2140 MHz	0.8	24 h	x	no		2 with triplicates	<0.01	yes	yes	no	yes	yes
	A172 glioblastoma	x	2140 MHz	0.08	24 h	x	no		2 with triplicates	<0.01	yes	yes	no	yes	yes
	IMR-90 fibroblasts	x	2140 MHz	0.08	28 h	x	no		2 with triplicates	<0.01	yes	yes	no	yes	yes
	IMR-90 fibroblasts	x	2140 MHz	0.08	28 h	x	no		2 with triplicates	<0.01	yes	yes	no	yes	yes
	A172 glioblastoma	x	2140 MHz	0.08	24 h			x	no	<0.01	yes	yes	no	yes	yes
	A172 glioblastoma	x	2140 MHz	0.08	48 h			x	no	<0.01	yes	yes	no	yes	yes
	A172 glioblastoma	x	2140 MHz	0.25	24 h			x	no	<0.01	yes	yes	no	yes	yes
	A172 glioblastoma	x	2140 MHz	0.8	24 h			x	no	<0.01	yes	yes	no	yes	yes
	A172 glioblastoma	x	2140 MHz	0.08	24 h			x	no	<0.01	yes	yes	no	yes	yes
	IMR-90 fibroblasts	x	2140 MHz	0.08	28 h			x	no	<0.01	yes	yes	no	yes	yes
	IMR-90 fibroblasts	x	2140 MHz	0.08	28 h			x	no	<0.01	yes	yes	no	yes	yes
[30]	Murine L929 fibroblast cells	x	872 MHz	5	1 h	x	no		6	<0.05	yes	yes	yes	yes	yes
	Murine L929 fibroblast cells	x	872 MHz	5	24 h	x	no		3	<0.05	yes	yes	yes	yes	yes
	Murine L929 fibroblast cells	x	872 MHz	5	1 h	x	no		6	<0.05	yes	yes	yes	yes	yes
	Murine L929 fibroblast cells	x	872 MHz	5	24 h	x	no		4	<0.05	yes	yes	yes	yes	yes
[31]	SH-SY5Y cell line (human neuroblastoma)	x	872 MHz	5	2 h			x	no	<0.05	yes	yes	yes	no	yes
	SH-SY5Y cell line (human neuroblastoma)	x	872 MHz	5	24 h			x	no	<0.05	yes	yes	yes	no	yes

	SH-SY5Y cell line (human neuroblastoma)	x	872 MHz	5	2 h			x	no	3	<0.05	yes	yes	yes	no	yes
	SH-SY5Y cell line (human neuroblastoma)	x	872 MHz	5	24 h			x	no	3	<0.05	yes	yes	yes	no	yes
	L929 (mouse fibroblasts)	x	872 MHz	5	2 h	x	no			3; 5	<0.05	yes	yes	yes	no	yes
	L929 (mouse fibroblasts)	x	872 MHz	5	24 h	x	no			3; 5	<0.05	yes	yes	yes	no	yes
	L929 (mouse fibroblasts)	x	872 MHz	5	2 h	x	yes			3; 5	<0.05	yes	yes	yes	no	yes
	L929 (mouse fibroblasts)	x	872 MHz	5	24 h	x	yes			3; 5	<0.05	yes	yes	yes	no	yes
[30]	Murine L929 fibroblast cells	x	872 MHz	5	1 h			x	no	6	<0.05	yes	yes	yes	yes	yes
	Murine L929 fibroblast cells	x	872 MHz	5	24 h			x	no	3	<0.05	yes	yes	yes	yes	yes
	Murine L929 fibroblast cells	x	872 MHz	5	1 h			x	no	6	<0.05	yes	yes	yes	yes	yes
	Murine L929 fibroblast cells	x	872 MHz	5	24 h			x	no	4	<0.05	yes	yes	yes	yes	yes
[31]	L929 (mouse fibroblasts)	x	872 MHz	5	2 h			x	no	3; 5	<0.05	yes	yes	yes	no	yes
	L929 (mouse fibroblasts)	x	872 MHz	5	24 h			x	no	3; 5	<0.05	yes	yes	yes	no	yes
	L929 (mouse fibroblasts)	x	872 MHz	5	2 h			x	no	3; 5	<0.05	yes	yes	yes	no	yes
	L929 (mouse fibroblasts)	x	872 MHz	5	24 h			x	no	3; 5	<0.05	yes	yes	yes	no	yes
[32]	Jurkat T-cells	x	1763 MHz	2	24 h			x	no	5	<0.05	yes	yes	no	no	yes
	Jurkat T-cells	x	1763 MHz	10	24 h			x	no	5	<0.05	yes	yes	no	no	yes
[33]	Mouse HEI-OC1 auditory hair cells	x	1763 MHz	20	24 h			x	no	3	<0.05	yes	yes	no	no	yes
	Mouse HEI-OC1 auditory hair cells	x	1763 MHz	20	48 h			x	no	3	<0.05	yes	yes	no	no	yes
[34]	HL-60 cells	x	900 MHz	0.0012	Intermittent	x	yes			3	<0.05	yes	no	yes	no	yes
	HL-60 cells	x	900 MHz	0.0012	Intermittent			x	yes	3	<0.05	yes	no	yes	no	yes
[35]	Human neuroblastoma cells SH-SY5Y	x	900 MHz	0.25	24 h	x	no			3	<0.05	yes	yes	yes	yes	yes
	Human neuroblastoma cells SH-SY5Y	x	900 MHz	2	24 h	x	no			3	<0.05	yes	yes	yes	yes	yes
	Human neuroblastoma cells SH-SY5Y	x	900 MHz	0.25	24 h	x	no			3	<0.05	yes	yes	yes	yes	yes
	Human neuroblastoma cells SH-SY5Y	x	900 MHz	2	24 h	x	no			3	<0.05	yes	yes	yes	yes	yes
[36]	Cortices of embryonic Wistar rats	x	900 MHz	0.25	24 h	x	no			3	<0.05	yes	yes	yes	yes	yes
[37]	Rat primary neuronal cultures	x	900 MHz	2	24 h	x	yes			3	<0.05	yes	yes	yes	yes	yes

[38]	Breast cancer cells (mda-mb-231)	x	900 MHz	0.36	1 h	x	yes		3; 8	<0.05	no	yes	no	no	yes
[39]	Mouse brain	x	10.715 GHz	0.725	Intermittent	x	yes		1	<0.05	no	yes	no	yes	yes
[40]	Rat bone marrow cells	x	900 MHz	2	30 min			x	no	14	<0.05	yes	yes	yes	yes
	Rat lymphocytes	x	900 MHz	2	30 min			x	no	11	<0.05	yes	yes	yes	yes
[41]	AMA cells (transformed human epithelial amnion cells)	x	837 MHz	4	1 h			x	no	3	<0.05	yes	yes	no	yes
	AMA cells (transformed human epithelial amnion cells)	x	837 MHz combined with 1950 MHz	4	1 h			x	no	3	<0.05	yes	yes	no	yes
[42]	Mono Mac 6 cells (human monocytes)	x	1800 MHz	2	12 h	x	no			3	<0.05	yes	yes	yes	yes
	Mono Mac 6 cells (human monocytes)	x	1800 MHz	2	12 h			x	no	3	<0.05	yes	yes	yes	yes
[43]	NIH3T3 cells (mouse fibroblasts)	x	849 MHz	2	1 h			x	no	4	<0.05; <0.01	yes	yes	yes	yes
	NIH3T3 cells (mouse fibroblasts)	x	850 MHz	10	1 h			x	no	4	<0.05; <0.01	yes	yes	yes	yes
	NIH3T3 cells (mouse fibroblasts)	x	850 MHz	2	Intermittent			x	no	4	<0.05; <0.01	yes	yes	yes	yes
	NIH3T3 cells (mouse fibroblasts)	x	850 MHz	10	Intermittent			x	no	4	<0.05; <0.01	yes	yes	yes	yes
[44]	MCF-7 (human breast cancer cell line)	x	837 MHz	4	1 h			x	no	3	<0.05	yes	yes	yes	yes
	MCF-7 (human breast cancer cell line)	x	837 MHz combined with 1950 MHz	4	1 h			x	no	3	<0.05	yes	yes	yes	yes
[45]	HL-60 cell	x	2450 MHz	10	2 h	x	yes			n.s.	<0.05	yes	no	no	yes
	HL-60 cell	x	2450 MHz	10	6 h	x	yes			n.s.	<0.05	yes	no	no	yes
	HL-60 cell	x	2450 MHz	10	2 h			x	yes	n.s.	<0.05	yes	no	no	yes
	HL-60 cell	x	2450 MHz	10	6 h			x	yes	n.s.	<0.05	yes	no	no	yes
[46]	Adipose-derived stem cells (ASC)	x	2450 MHz	0.24	Intermittent	x	no			5	<0.05	no	no	no	yes
	Adipose-derived stem cells (ASC)	x	2450 MHz	0.24	Intermittent			x	no	5	<0.05	no	no	no	yes
[47]	Mouse spermatocytes (GC2)	x	1800 MHz	14	Intermittent	x	no			3	<0.05	yes	yes	yes	yes
[48]	Rat primary, cortical neurons	x	1800 MHz		24 h	x	yes			3	<0.05	no	no	no	No
[49]	Rat astrocytes	x	1950 MHz	5.36	12 h	x	no			3	<0.05	no	no	no	yes
	Rat astrocytes	x	1950 MHz	5.36	24 h	x	no			3	<0.05	no	no	no	yes
	Rat astrocytes	x	1950 MHz	5.36	48 h	x	yes			3	<0.05	no	no	no	yes
	C6 cells (rat glioma cell line)	x	1950 MHz	5.36	12 h	x	no			3	<0.05	no	no	no	yes
	C6 cells (rat glioma cell line)	x	1950 MHz	5.36	24 h	x	no			3	<0.05	no	no	no	yes
	C6 cells (rat glioma cell line)	x	1950 MHz	5.36	48 h	x	no			3	<0.05	no	no	no	yes
	Rat primary, cortical neurons	x	1800 MHz		24 h			x	yes	3	<0.05	no	no	no	No
	Rat astrocytes	x	1950 MHz	5.36	12 h			x	no	3	<0.05	no	no	no	yes

	Rat astrocytes	x	1950 MHz	5.36	24 h			x	no	3	<0.05	no	no	no	no	yes
	Rat astrocytes	x	1950 MHz	5.36	48 h			x	yes	3	<0.05	no	no	no	no	yes
	C6 cells (rat glioma cell line)		x	1950 MHz	5.36	12 h		x	no	3	<0.05	no	no	no	no	yes
	C6 cells (rat glioma cell line)		x	1950 MHz	5.36	24 h		x	no	3	<0.05	no	no	no	no	yes
	C6 cells (rat glioma cell line)		x	1950 MHz	5.36	48 h		x	no	3	<0.05	no	no	no	no	yes
[50]	SRA01/04-HLEC (human eye lens epithelial cells)	x	1800 MHz	1	2 h			x	no	100 cells	<0.05	yes	yes	yes	no	yes
	SRA01/04-HLEC (human eye lens epithelial cells)	x	1800 MHz	2	2 h			x	no	100 cells	<0.05	yes	yes	yes	no	yes
	SRA01/04-HLEC (human eye lens epithelial cells)	x	1800 MHz	3	3 h			x	no	100 cells	<0.05	yes	yes	yes	no	yes
[51]	Human peripheral blood mononuclear cells (PBMC)	x	900 MHz	0.43	1 h	x	no			5	<0.05	no	no	no	no	no
	Human peripheral blood mononuclear cells (PBMC)	x	900 MHz	0.43	2 h	x	yes			3	<0.05	no	no	no	no	no
	Human peripheral blood mononuclear cells (PBMC)	x	900 MHz	0.43	4 h	x	yes			3	<0.05	no	no	no	no	no
	Human peripheral blood mononuclear cells (PBMC)	x	900 MHz	0.43	6 h	x	yes			3	<0.05	no	no	no	no	no
	Human peripheral blood mononuclear cells (PBMC)	x	900 MHz	0.43	8 h	x	yes			3	<0.05	no	no	no	no	no
[52]	Human peripheral blood lymphocytes	x	954 MHz	1.5	2 h			x	no	8	<0.05	no	no	yes	no	yes
[53]	Human skin fibroblasts		x	2400 MHz	0.00028	72 h	x	no		6	<0.05	no	no	no	no	no
	Human skin fibroblasts		x	2400 MHz	0.00028	72 h			x	no	6	<0.05	no	no	no	no
[54]	T-lymphoblastoid leukemia CCRF-CEM	x	900 MHz	0.0035	2 h	x	yes			1	<0.05	yes	yes	no	no	yes
	T-lymphoblastoid leukemia CCRF-CEM	x	900 MHz	0.0035	4 h	x	yes			1	<0.05	yes	yes	no	no	yes
	T-lymphoblastoid leukemia CCRF-CEM	x	900 MHz	0.0035	12 h	x	yes			1	<0.05	yes	yes	no	no	yes
	T-lymphoblastoid leukemia CCRF-CEM	x	900 MHz	0.0035	24 h	x	no			1	<0.05	yes	yes	no	no	yes
	T-lymphoblastoid leukemia CCRF-CEM	x	900 MHz	0.0035	48 h	x	no			1	<0.05	yes	yes	no	no	yes
	T-lymphoblastoid leukemia CCRF-CEM	x	900 MHz	0.0035	2 h			x	no	1	<0.05	yes	yes	no	no	yes
	T-lymphoblastoid leukemia CCRF-CEM	x	900 MHz	0.0035	4 h			x	no	1	<0.05	yes	yes	no	no	yes
	T-lymphoblastoid leukemia CCRF-CEM	x	900 MHz	0.0035	12 h			x	no	1	<0.05	yes	yes	no	no	yes
	T-lymphoblastoid leukemia CCRF-CEM	x	900 MHz	0.0035	24 h			x	no	1	<0.05	yes	yes	no	no	yes
	T-lymphoblastoid leukemia CCRF-CEM	x	900 MHz	0.0035	48 h			x	no	1	<0.05	yes	yes	no	no	yes

[55]	Human neuroblastoma cell line LAN-5	x	900 MHz	1	24 h	x	no		3	<0.05	yes	yes	yes	yes	yes
	Human neuroblastoma cell line LAN-5	x	900 MHz	1	48 h	x	no		3	<0.05	yes	yes	yes	yes	yes
	Human neuroblastoma cell line LAN-5	x	900 MHz	1	72 h	x	no		3	<0.05	yes	yes	yes	yes	yes
	Human neuroblastoma cell line LAN-5	x	900 MHz	1	24 h			x no	3	<0.05	yes	yes	yes	yes	yes
	Human neuroblastoma cell line LAN-5	x	900 MHz	1	48 h			x no	3	<0.05	yes	yes	yes	yes	yes
	Human neuroblastoma cell line LAN-5	x	900 MHz	1	72 h			x no	3	<0.05	yes	yes	yes	yes	yes
	Human neuroblastoma cell line LAN-5	x	900 MHz	1	72 h			x no	3	<0.05	yes	yes	yes	yes	yes
[56]	MO54 (human glioma cells)	x	1950 MHz	2	2 h			x no	1	<0.05	yes	yes	yes	no	yes
	MO54 (human glioma cells)	x	1950 MHz	10	2 h			x no	2	<0.05	yes	yes	yes	no	yes
[57]	B16F10 (murine melanoma cells)	x	900 MHz	2.2	1 h			x no	n.s.	<0.05	no	yes	no	no	yes
[58]	(N2a) murine neuroblastoma cell line	x	935 MHz	2	24 h	x	no		3	<0.05	yes	yes	no	no	yes
	(N2a) murine neuroblastoma cell line	x	935 MHz	2	24 h	x	no		3	<0.05	yes	yes	no	no	yes
	(N2a) murine neuroblastoma cell line	x	935 MHz	2	24 h	x	no		3	<0.05	yes	yes	no	no	yes
	(N2a) murine neuroblastoma cell line	x	935 MHz	2	24 h	x	no		3	<0.05	yes	yes	no	no	yes
[59]	HL-60 cell line	x	2450 MHz	0.1	1 h			x yes	6	<0.001	no	no	no	no	no
	HL-60 cell line	x	2450 MHz	0.1	2 h			x yes	6	<0.001	no	no	no	no	no
	HL-60 cell line	x	2450 MHz	0.1	12 h			x yes	6	<0.001	no	no	no	no	no
	HL-60 cell line	x	2450 MHz	0.1	24 h			x yes	6	<0.001	no	no	no	no	no
[60]	ES R1 cells (mouse embryonic stem cells)	x	1710 MHz	1.5	6 h	x	yes		5	no	yes	yes	no	yes	yes
	ES R1 cells (mouse embryonic stem cells)	x	1710 MHz	1.5	24 h	x	yes		5	no	yes	yes	no	yes	yes
	ES-derived nestin-positive neural progenitor cells	x	1710 MHz	1.5	6 h	x	yes		5	no	yes	yes	no	yes	yes
	ES-derived nestin-positive neural progenitor cells	x	1710 MHz	1.5	24 h	x	yes		5	no	yes	yes	no	yes	yes
	ES R1 cells (mouse embryonic stem cells)	x	1710 MHz	1.5	6 h			x no	5	no	yes	yes	no	yes	yes
	ES R1 cells (mouse embryonic stem cells)	x	1710 MHz	1.5	24 h			x no	5	no	yes	yes	no	yes	yes
	ES R1 cells (mouse embryonic stem cells)	x	1710 MHz	1.5	24 h			x no	5	no	yes	yes	no	yes	yes

	ES-derived nestin-positive neural progenitor cells	x	1710 MHz	1.5	6 h			x	no	5	no	yes	yes	no	yes	yes
	ES-derived nestin-positive neural progenitor cells	x	1710 MHz	1.5	24 h			x	no	5	no	yes	yes	no	yes	yes
[61]	Hepatocarcinoma (hepg2)	x	900 MHz	2	Intermittent	x	no			4	<0.05	yes	yes	no	yes	yes
	Hepatocarcinoma (HepG2)	x	900 MHz	2	Intermittent	x	no			4	<0.05	yes	yes	no	yes	yes
	Hepatocarcinoma (HepG2)	x	900 MHz	2	Intermittent	x	no			4	<0.05	yes	yes	no	yes	yes
	Hepatocarcinoma (HepG2)	x	900 MHz	2	Intermittent	x	yes			4	<0.05	yes	yes	no	yes	yes
	Hepatocarcinoma (HepG2)	x	1800 MHz	2	Intermittent	x	no			4	<0.05	yes	yes	no	yes	yes
	Hepatocarcinoma (HepG2)	x	1800 MHz	2	Intermittent	x	no			4	<0.05	yes	yes	no	yes	yes
	Hepatocarcinoma (HepG2)	x	1800 MHz	2	Intermittent	x	no			4	<0.05	yes	yes	no	yes	yes
	Hepatocarcinoma (HepG2)	x	1800 MHz	2	Intermittent	x	yes			4	<0.05	yes	yes	no	yes	yes
	Hepatocarcinoma (HepG2)	x	900 MHz	2	Intermittent			x	no	4	<0.05	yes	yes	no	yes	yes
	Hepatocarcinoma (HepG2)	x	900 MHz	2	Intermittent			x	no	4	<0.05	yes	yes	no	yes	yes
	Hepatocarcinoma (HepG2)	x	900 MHz	2	Intermittent			x	yes	4	<0.05	yes	yes	no	yes	yes
	Hepatocarcinoma (HepG2)	x	1800 MHz	2	Intermittent			x	yes	4	<0.05	yes	yes	no	yes	yes
	Hepatocarcinoma (HepG2)	x	1800 MHz	2	Intermittent			x	no	4	<0.05	yes	yes	no	yes	yes
	Hepatocarcinoma (HepG2)	x	1800 MHz	2	Intermittent			x	no	4	<0.05	yes	yes	no	yes	yes
	Hepatocarcinoma (HepG2)	x	1800 MHz	2	Intermittent			x	yes	4	<0.05	yes	yes	no	yes	yes
	Hepatocarcinoma (HepG2)	x	1800 MHz	2	Intermittent			x	yes	4	<0.05	yes	yes	no	yes	yes
	Hepatocarcinoma (HepG2)	x	1800 MHz	2	Intermittent			x	yes	4	<0.05	yes	yes	no	yes	yes
[62]	Detroit 550 (normal human skin fibroblasts)	x	902.4 MHz	0.6	1 h			x	yes	6	no	yes	no	no	no	no
[63]	Jurkat cells (human lymphoblastoid T cells)	x	900 MHz	1.35	1 h	x	no			3	<0.05	yes	yes	yes	yes	yes
	PbIs (human peripheral blood lymphocytes)	x	900 MHz	1.35	1 h	x	no			3	<0.05	yes	yes	yes	yes	yes
	Jurkat cells (human lymphoblastoid T cells)	x	900 MHz	1.35	1 h			x	yes	3	<0.05	yes	yes	yes	yes	yes
	PbIs (human peripheral blood lymphocytes)	x	900 MHz	1.35	1 h			x	no	3	<0.05	yes	yes	yes	yes	yes
[64]	V79 (Chinese hamster fibroblast cells)	x	864 MHz	0.08	1 h			x	no	n.s.	<0.05	yes	no	no	no	yes
	V79 (Chinese hamster fibroblast cells)	x	864 MHz	0.08	2 h			x	yes	n.s.	<0.05	yes	no	no	no	yes

	V79 (Chinese hamster fibroblast cells)	x	864 MHz	0.08	3 h		x	yes	n.s.	<0.05	yes	no	no	no	yes
[65]	V79 (Chinese hamster fibroblast cells)	x	935 MHz	0.12	1 h		x	no	3	<0.05	no	no	yes	no	yes
	V79 (Chinese hamster fibroblast cells)	x	935 MHz	0.12	2 h		x	no	3	<0.05	no	no	yes	no	yes
	V79 (Chinese hamster fibroblast cells)	x	935 MHz	0.12	3 h		x	yes	3	<0.05	no	no	yes	no	yes
[66]	V79 (Chinese hamster fibroblast cells)	x	864 MHz	0.08	1 h		x	no	3	<0.05	no	no	yes	no	yes
	V79 (Chinese hamster fibroblast cells)	x	864 MHz	0.08	2 h		x	yes	3	<0.05	no	no	yes	no	yes
	V79 (Chinese hamster fibroblast cells)	x	864 MHz	0.08	3 h		x	yes	3	<0.05	no	no	yes	no	yes
	V79 (Chinese hamster fibroblast cells)	x	935 MHz	0.12	1 h		x	no	3	<0.05	no	no	yes	no	yes
	V79 (Chinese hamster fibroblast cells)	x	935 MHz	0.12	2 h		x	no	3	<0.05	no	no	yes	no	yes
	V79 (Chinese hamster fibroblast cells)	x	935 MHz	0.12	3 h		x	yes	3	<0.05	no	no	yes	no	yes
[67]	Jurkat cells (clone E6-1)	x	2450 MHz	5 mW/cm ²	48 h	x	yes		3	<0.001	yes	no	no	no	yes
	Jurkat cells (clone E6-1)	x	2450 MHz	5 mW/cm ²	48 h			x	no	3	<0.001	yes	no	no	yes
[68]	Human astrocytoma cell	x	9600 MHz	0.0004	15 min	x	no		2	<0.05	yes	yes	no	yes	yes
	Human astrocytoma cell	x	9600 MHz	0.0004	30 min	x	no		2	<0.05	yes	yes	no	yes	yes
	Human astrocytoma cell	x	9600 MHz	0.0004	1 h	x	no		2	<0.05	yes	yes	no	yes	yes
	Human astrocytoma cell	x	9600 MHz	0.0004	24 h	x	no		2	<0.05	yes	yes	no	yes	yes
	Human astrocytoma cell	x	9600 MHz	0.0004	15 min			x	no	2	<0.05	yes	yes	no	yes
	Human astrocytoma cell	x	9600 MHz	0.0004	30 min			x	no	2	<0.05	yes	yes	no	yes
	Human astrocytoma cell	x	9600 MHz	0.0004	1 h			x	no	2	<0.05	yes	yes	no	yes
	Human astrocytoma cell	x	9600 MHz	0.0004	24 h			x	yes	2	<0.05	yes	yes	no	yes
[69]	Human leukemia cells (HL60)	x	400 MHz		24 h	x	no		3	<0.05	no	no	no	no	no
	Human leukemia cells (HL60)	x	400 MHz		72 h	x	no		3	<0.05	no	no	no	no	no
[70]	Isolated human skin cells	x	900 MHz	2	48 h	x	no		5	<0.05	yes	yes	yes	no	yes

	Human reconstructed epidermis (HRE) using human keratinocytes	x	900 MHz	2	48 h	x	no	5	<0.05	yes	yes	yes	no	yes
	Isolated human skin cells	x	900 MHz	2	48 h		x no	5	<0.05	yes	yes	yes	no	yes
	Human reconstructed epidermis (HRE) using human keratinocytes	x	900 MHz	2	48 h		x no	5	<0.05	yes	yes	yes	no	yes
[71]	Human blood lymphocytes	x	1950 MHz	0.3	20 h		x no	4	<0.05	yes	yes	yes	yes	yes
[72]	Human blood lymphocytes	x	900 MHz	1.25	20 h		x no	3	<0.05	yes	yes	yes	yes	yes
	Human blood lymphocytes	x	900 MHz	1.25	20 h		x no	3	<0.05	yes	yes	yes	yes	yes
	Human blood lymphocytes	x	900 MHz	1.25	20 h		x no	3	<0.05	yes	yes	yes	yes	yes
[73]	Human blood lymphocytes	x	900 MHz	1.25	20 h		x no	5	<0.05	yes	yes	yes	yes	yes
[74]	Human healthy dermal fibroblasts		x 900 MHz	1	24 h		x no	3	<0.05	yes	yes	yes	yes	yes
	Human dermal fibroblasts from Turner syndrome patients		x 900 MHz	1	24 h		x no	3	<0.05	yes	yes	yes	yes	yes
[75]	Human peripheral blood lymphocytes	x	900 MHz	1	24 h		x no	5	<0.05	yes	yes	yes	yes	yes
	Human peripheral blood lymphocytes	x	900 MHz	5	24 h		x no	5	<0.05	yes	yes	yes	yes	yes
	Human peripheral blood lymphocytes	x	900 MHz	10	24 h		x no	5	<0.05	yes	yes	yes	yes	yes
[76]	Human-hamster hybrid (A(L)) cell line	x	900 MHz	11.5	30 min		x no	3	<0.05	yes	yes	yes	yes	yes
[77]	FC2 cell hybrid	x	900 MHz	0.06	30 min		x yes	2	<0.05	yes	yes	yes	no	yes
	FC2 cell hybrid	x	900 MHz	0.06	2 h		x yes	2	<0.05	yes	yes	yes	no	yes
[78]	Human A172 (glioblastoma)	x	2142.5 MHz	0.08	24 h		x no	2 to 4	<0.05	yes	yes	yes	yes	yes
	Human A172 (glioblastoma)	x	2142.5 MHz	0.08	48 h		x no	2 to 4	<0.05	yes	yes	yes	yes	yes
	Human A172 (glioblastoma)	x	2142.5 MHz	0.08	72 h		x no	2 to 4	<0.05	yes	yes	yes	yes	yes
	Human A172 (glioblastoma)	x	2142.5 MHz	0.08	96 h		x no	2 to 4	<0.05	yes	yes	yes	yes	yes
	Human A172 (glioblastoma)	x	2142.5 MHz	0.25	24 h		x no	2 to 4	<0.05	yes	yes	yes	yes	yes
	Human A172 (glioblastoma)	x	2142.5 MHz	0.25	48 h		x no	2 to 4	<0.05	yes	yes	yes	yes	yes
	Human A172 (glioblastoma)	x	2142.5 MHz	0.25	72 h		x no	2 to 4	<0.05	yes	yes	yes	yes	yes
	Human A172 (glioblastoma)	x	2142.5 MHz	0.25	96 h		x no	2 to 4	<0.05	yes	yes	yes	yes	yes

Human A172 (glioblastoma)	x	2142.5 MHz	0.8	24 h	x	no	2 to 4	<0.05	yes	yes	yes	yes	yes
Human A172 (glioblastoma)	x	2142.5 MHz	0.8	48 h	x	no	2 to 4	<0.05	yes	yes	yes	yes	yes
Human A172 (glioblastoma)	x	2142.5 MHz	0.8	72 h	x	no	2 to 4	<0.05	yes	yes	yes	yes	yes
Human A172 (glioblastoma)	x	2142.5 MHz	0.8	96 h	x	no	2 to 4	<0.05	yes	yes	yes	yes	yes
Human H4 (neuroglioma)	x	2142.5 MHz	0.08	24 h	x	no	2 to 4	<0.05	yes	yes	yes	yes	yes
Human H4 (neuroglioma)	x	2142.5 MHz	0.08	48 h	x	no	2 to 4	<0.05	yes	yes	yes	yes	yes
Human H4 (neuroglioma)	x	2142.5 MHz	0.08	72 h	x	no	2 to 4	<0.05	yes	yes	yes	yes	yes
Human H4 (neuroglioma)	x	2142.5 MHz	0.08	96 h	x	no	2 to 4	<0.05	yes	yes	yes	yes	yes
Human H4 (neuroglioma)	x	2142.5 MHz	0.25	24 h	x	no	2 to 4	<0.05	yes	yes	yes	yes	yes
Human H4 (neuroglioma)	x	2142.5 MHz	0.25	48 h	x	no	2 to 4	<0.05	yes	yes	yes	yes	yes
Human H4 (neuroglioma)	x	2142.5 MHz	0.25	72 h	x	no	2 to 4	<0.05	yes	yes	yes	yes	yes
Human H4 (neuroglioma)	x	2142.5 MHz	0.25	96 h	x	no	2 to 4	<0.05	yes	yes	yes	yes	yes
Human H4 (neuroglioma)	x	2142.5 MHz	0.8	24 h	x	no	2 to 4	<0.05	yes	yes	yes	yes	yes
Human H4 (neuroglioma)	x	2142.5 MHz	0.8	48 h	x	no	2 to 4	<0.05	yes	yes	yes	yes	yes
Human H4 (neuroglioma)	x	2142.5 MHz	0.8	72 h	x	no	2 to 4	<0.05	yes	yes	yes	yes	yes
Human H4 (neuroglioma)	x	2142.5 MHz	0.8	96 h	x	no	2 to 4	<0.05	yes	yes	yes	yes	yes
IMR-90 (fibroblasts from normal fetal lung)	x	2142.5 MHz	0.08	24 h	x	no	2 to 4	<0.05	yes	yes	yes	yes	yes
IMR-90 (fibroblasts from normal fetal lung)	x	2142.5 MHz	0.08	48 h	x	no	2 to 4	<0.05	yes	yes	yes	yes	yes
IMR-90 (fibroblasts from normal fetal lung)	x	2142.5 MHz	0.08	72 h	x	no	2 to 4	<0.05	yes	yes	yes	yes	yes
IMR-90 (fibroblasts from normal fetal lung)	x	2142.5 MHz	0.08	96 h	x	no	2 to 4	<0.05	yes	yes	yes	yes	yes
IMR-90 (fibroblasts from normal fetal lung)	x	2142.5 MHz	0.25	24 h	x	no	2 to 4	<0.05	yes	yes	yes	yes	yes
IMR-90 (fibroblasts from normal fetal lung)	x	2142.5 MHz	0.25	48 h	x	no	2 to 4	<0.05	yes	yes	yes	yes	yes
IMR-90 (fibroblasts from normal fetal lung)	x	2142.5 MHz	0.25	72 h	x	no	2 to 4	<0.05	yes	yes	yes	yes	yes
IMR-90 (fibroblasts from normal fetal lung)	x	2142.5 MHz	0.25	96 h	x	no	2 to 4	<0.05	yes	yes	yes	yes	yes

	IMR-90 (fibroblasts from normal fetal lung)	x	2142.5 MHz	0.8	24 h	x	no	2 to 4	<0.05	yes	yes	yes	yes	yes
	IMR-90 (fibroblasts from normal fetal lung)	x	2142.5 MHz	0.8	48 h	x	no	2 to 4	<0.05	yes	yes	yes	yes	yes
	IMR-90 (fibroblasts from normal fetal lung)	x	2142.5 MHz	0.8	72 h	x	no	2 to 4	<0.05	yes	yes	yes	yes	yes
	IMR-90 (fibroblasts from normal fetal lung)	x	2142.5 MHz	0.8	96 h	x	no	2 to 4	<0.05	yes	yes	yes	yes	yes
[79]	Rat glioma cells (C6)	x	836.55 MHz	0.00059	4 h	x	no	6	<0.05	yes	yes	no	no	yes
	Rat glioma cells (C6)	x	836.55 MHz	0.00059	24 h	x	no	6	<0.05	yes	yes	no	no	yes
	Rat glioma cells (C6)	x	836.55 MHz	0.0059	4 h	x	no	6	<0.05	yes	yes	no	no	yes
	Rat glioma cells (C6)	x	836.55 MHz	0.0059	24 h	x	no	6	<0.05	yes	yes	no	no	yes
	Rat glioma cells (C6)	x	836.55 MHz	0.059	4 h	x	no	6	<0.05	yes	yes	no	no	yes
	Rat glioma cells (C6)	x	836.55 MHz	0.059	24 h	x	no	6	<0.05	yes	yes	no	no	yes
	Primary fetal rat brain culture	x	836.55 MHz	0.00059	4 h	x	no	6	<0.05	yes	yes	no	no	yes
	Primary fetal rat brain culture	x	836.55 MHz	0.00059	24 h	x	no	6	<0.05	yes	yes	no	no	yes
	Primary fetal rat brain culture	x	836.55 MHz	0.0059	4 h	x	no	6	<0.05	yes	yes	no	no	yes
	Primary fetal rat brain culture	x	836.55 MHz	0.0059	24 h	x	no	6	<0.05	yes	yes	no	no	yes
	Primary fetal rat brain culture	x	836.55 MHz	0.059	4 h	x	no	6	<0.05	yes	yes	no	no	yes
	Primary fetal rat brain culture	x	836.55 MHz	0.059	24 h	x	no	6	<0.05	yes	yes	no	no	yes
[80]	Human keratinocyte hacat cells	x	61.2 GHz	770	30 min	x	no	6	<0.05	yes	no	no	yes	no
[81]	Chinese hamster ovary cell line (CHO-K1)	x	2450 MHz	0.05	2 h	x	no	3	no	yes	yes	no	no	yes
	Chinese hamster ovary cell line (CHO-K1)	x	2450 MHz	5	2 h	x	no	3	no	yes	yes	no	no	yes
	Chinese hamster ovary cell line (CHO-K1)	x	2450 MHz	50	2 h	x	no	3	no	yes	yes	no	no	yes
	Chinese hamster ovary cell line (CHO-K1)	x	2450 MHz	100	2 h	x	no	3	no	yes	yes	no	no	yes
	Chinese hamster ovary cell line (CHO-K1)	x	2450 MHz	200	2 h	x	yes	3	no	yes	yes	no	no	yes
	Human malignant glioma (MO54 cells)	x	2450 MHz	0.05	2 h	x	no	3	no	yes	yes	no	no	yes
	Human malignant glioma (MO54 cells)	x	2450 MHz	5	2 h	x	no	3	no	yes	yes	no	no	yes
	Human malignant glioma (MO54 cells)	x	2450 MHz	50	2 h	x	no	3	no	yes	yes	no	no	yes
	Human malignant glioma (MO54 cells)	x	2450 MHz	100	2 h	x	no	3	no	yes	yes	no	no	yes
	Human malignant glioma (MO54 cells)	x	2450 MHz	200	2 h	x	yes	3	no	yes	yes	no	no	yes

[82]	Primary cerebral cortical cells (neurons and astrocytes) of rat embryos	x	900 MHz	0.25	24 h	x	no	3	<0.05	yes	yes	yes	no	yes
	Primary cerebral cortical cells (neurons and astrocytes) of rat embryos	x	900 MHz	0.25	24 h	x	no	3	<0.05	yes	yes	yes	no	yes
[83]	Human neuroblastoma NB69 line	x	2200 MHz	0.023	24 h	x	yes	8	<0.001	yes	yes	no	yes	yes
	Human hepatocarcinoma cell line HEPG2	x	2200 MHz	0.023	24 h	x	no	6	<0.001	yes	yes	no	yes	yes
[84]	Transformed human epithelial amnion cells AMA.	x	960 MHz	0.0021	30 min	x	yes	11	<0.01	yes	yes	no	no	yes
[85]	Human blood lymphocytes	x	2450 MHz	12.46	90 min	x	no	2	<0.05	yes	yes	yes	yes	yes
	Human blood lymphocytes	x	2450 MHz	12.46	Intermittent	x	no	2	<0.05	yes	yes	yes	yes	yes
[86]	Human blood lymphocytes	x	847.74 MHz	4.9	24 h	x	no	2	<0.05	yes	yes	yes	no	yes
	Human blood lymphocytes	x	847.74 MHz	5.5	24 h	x	no	2	<0.05	yes	yes	yes	no	yes
[87]	Human blood lymphocytes	x	835.62 MHz	4.4	24 h	x	no	2	<0.05	yes	yes	yes	no	yes
	Human blood lymphocytes	x	835.62 MHz	5	24 h	x	no	2	<0.05	yes	yes	yes	no	yes
	Human blood lymphocytes	x	2450 MHz	2.135	2 h	x	no	3	<0.05	yes	yes	yes	no	yes
	Human blood lymphocytes	x	8.2 GHz	20.71	2 h	x	no	2	<0.05	yes	yes	yes	no	yes
[88]	Human blood lymphocytes	x	2450 MHz	10.9	2 h	x	no	4	<0.05	no	no	no	no	yes
	Human blood lymphocytes	x	2451 MHz	10.9	2 h	x	no	4	<0.05	yes	yes	yes	yes	yes
[89]	Human blood lymphocytes	x	1800 MHz	0.2	28 h	x	no	20	<0.05	yes	yes	yes	yes	yes
	Human blood lymphocytes	x	1800 MHz	2	28 h	x	no	20	<0.05	yes	yes	yes	yes	yes
	Human blood lymphocytes	x	1800 MHz	10	28 h	x	no	20	<0.05	yes	yes	yes	yes	yes
[90]	Rat Sertoli cells	x	3 GHz		4 min	x	yes	3	<0.05	yes	no	no	no	no
[91]	Chinese hamster lung cells (CHLs)	x	1800 MHz	3	1 h	x	no	4	<0.05	yes	yes	yes	yes	yes
	Chinese hamster lung cells (CHLs)	x	1800 MHz	3	24 h	x	no	4	<0.05	yes	yes	yes	yes	yes
	Primary rat astrocytes	x	1800 MHz	3	1 h	x	no	4	<0.05	yes	yes	yes	yes	yes
	Primary rat astrocytes	x	1800 MHz	3	24 h	x	no	4	<0.05	yes	yes	yes	yes	yes
	Human amniotic epithelial cells (FLS)	x	1800 MHz	3	1 h	x	no	4	<0.05	yes	yes	yes	yes	yes

	Human amniotic epithelial cells (FLS)	x	1800 MHz	3	24 h			x	no	4	<0.05	yes	yes	yes	yes	yes
	Human lens epithelial cells (HLECs)	x	1800 MHz	3	1 h			x	no	4	<0.05	yes	yes	yes	yes	yes
	Human lens epithelial cells (HLECs)	x	1800 MHz	3	24 h			x	no	4	<0.05	yes	yes	yes	yes	yes
	Human skin fibroblasts (HSFs)	x	1800 MHz	3	1 h			x	no	4	<0.05	yes	yes	yes	yes	yes
	Human skin fibroblasts (HSFs)	x	1800 MHz	3	24 h			x	no	4	<0.05	yes	yes	yes	yes	yes
	Human umbilical vein endothelial cells (HUVECs)	x	1800 MHz	3	1 h			x	no	4	<0.05	yes	yes	yes	yes	yes
	Human umbilical vein endothelial cells (HUVECs)	x	1800 MHz	3	24 h			x	no	4	<0.05	yes	yes	yes	yes	yes
[92]	NIH3T3 cells (mouse fibroblasts)	x	916 MHz	10 W/m ²	Intermittent			x	yes	n.s.	no	no	no	no	no	no
	NIH3T3 cells (mouse fibroblasts)	x	916 MHz	50 W/m ²	Intermittent			x	yes	n.s.	no	no	no	no	no	no
	NIH3T3 cells (mouse fibroblasts)	x	916 MHz	90 W/m ²	Intermittent			x	yes	n.s.	no	no	no	no	no	no
[93]	Rabbit lens epithelial cells (RLEC)	x	2.450 MHz	0.10 mW/cm ²	8 h			x	no	n.s.	<0.01	yes	no	no	no	yes
	Rabbit lens epithelial cells (RLEC)	x	2.450 MHz	0.25 mW/cm ²	8 h			x	no	n.s.	<0.01	yes	no	no	no	yes
	Rabbit lens epithelial cells (RLEC)	x	2.450 MHz	0.50 mW/cm ²	8 h			x	yes	n.s.	<0.01	yes	no	no	no	yes
	Rabbit lens epithelial cells (RLEC)	x	2.450 MHz	1.00 mW/cm ²	8 h			x	yes	n.s.	<0.01	yes	no	no	no	yes
	Rabbit lens epithelial cells (RLEC)	x	2.450 MHz	2.00 mW/cm ²	8 h			x	yes	n.s.	<0.01	yes	no	no	no	yes
[94]	Hdpc (human dermal papilla cells, NIH3T3 cells)	x	1763 MHz	10	1 h	x	yes			3	<0.05	yes	yes	no	no	yes
	Hair matrix keratinocytes	x	1763 MHz	10	Intermittent	x	yes			3	<0.05	yes	yes	no	no	yes
	Hdpc (human dermal papilla cells, NIH3T3 cells)	x	1763 MHz	10	1 h			x	yes	3	<0.05	yes	yes	no	no	yes
	Hair matrix keratinocytes	x	1763 MHz	10	Intermittent			x	yes	3	<0.05	yes	yes	no	no	yes
[95]	Human lymphocytes	x	900 MHz	0.2	intermittent			x	no	4-6 donors	<0.05	no	yes	no	no	yes
	Human lymphocytes	x	900 MHz	1.6	intermittent			x	no	4-6 donors	<0.05	no	yes	no	no	yes
	Human lymphocytes	x	900 MHz	1.6	intermittent			x	no	4-6 donors	<0.05	no	yes	no	no	yes
	Human lymphocytes	x	900 MHz	1.6	intermittent			x	no	4-6 donors	<0.05	no	yes	no	no	yes
[96]	Human lymphocytes	x	900 MHz	0.3	2 h			x	no	4-5 donors	<0.05	yes	yes	yes	no	Yes
	Human lymphocytes	x	900 MHz	1	2 h			x	no	4-5 donors	<0.05	yes	yes	yes	no	Yes
[97]	Human lymphocytes	x	120 GHz	1	20 min			x	no	3-4 donors	<0.05	yes	yes	no	yes	yes
	Human lymphocytes	x	130 GHz	0.6	20 min			x	no	3-4 donors	<0.05	yes	yes	no	yes	yes
	Human lymphocytes	x	130 GHz	3.5	20 min			x	no	3-4 donors	<0.05	yes	yes	no	yes	yes
	Human lymphocytes	x	130 GHz	5	20 min			x	no	3-4 donors	<0.05	yes	yes	no	yes	yes
[98]	Human lymphocytes	x	1950 MHz	2.2	Intermittent			x	no	6	<0.05	yes	yes	yes	yes	yes
	Human lymphocytes	x	1950 MHz	2.2	Intermittent			x	no	6	<0.05	yes	yes	yes	yes	yes

	Human lymphocytes	x	1950 MHz	2.2	Intermittent		x	no	6	<0.05	yes	yes	yes	yes	yes
[99]	Human lymphocytes	x	1950 MHz	1.25	20 h		x	no	3	<0.001	yes	yes	yes	yes	yes
	Human lymphocytes	x	1950 MHz	0.6	20 h		x	no	3	<0.001	yes	yes	yes	yes	yes
	Human lymphocytes	x	1950 MHz	0.3	20 h		x	no	3	<0.001	yes	yes	yes	yes	yes
	Human lymphocytes	x	1950 MHz	0.15	20 h		x	no	3	<0.001	yes	yes	yes	yes	yes
[100]	PC-12 cells	x	1950 MHz	10	24 h	x	no		3	<0.05	yes	yes	yes	yes	yes
	PC-12 cells	x	1950 MHz	10	24 h	x	no		3	<0.05	yes	yes	yes	yes	yes
[101]	Human B lymphoblastoid cells	x	1800 MHz	2	Intermittent	x	yes		3	<0.05	yes	yes	yes	no	yes
	Human B lymphoblastoid cells	x	1800 MHz	2	Intermittent			x	yes	<0.05	yes	yes	yes	no	yes
[102]	Pc12	x	2856 MHz	10 mW/cm ²	5 min	x	no		3	<0.05	yes	no	no	yes	yes
	Pc12	x	2856 MHz	30 mW/cm ²	5 min	x	yes		3	<0.01	yes	no	no	yes	yes
	Pc12	x	2856 MHz	50 mW/cm ²	5 min	x	yes		3	<0.05	yes	no	no	yes	yes
	Pc12	x	2856 MHz	100 mW/cm ²	5 min	x	yes		3	<0.01	yes	no	no	yes	yes
[103]	Human lymphocytes	x	2450 MHz	30 mW/cm ²	15 min			x	no	2	<0.05	no	no	no	yes
	Human lymphocytes	x	2450 MHz	30 mW/cm ²	30 min			x	no	2	<0.05	no	no	no	yes
	Human lymphocytes	x	2450 MHz	30 mW/cm ²	60 min			x	no	2	<0.05	no	no	no	yes
	Human lymphocytes	x	7700 MHz	30 mW/cm ²	15 min			x	no	2	<0.05	no	no	no	yes
	Human lymphocytes	x	7700 MHz	30 mW/cm ²	30 min			x	no	2	<0.05	no	no	no	yes
	Human lymphocytes	x	7700 MHz	30 mW/cm ²	60 min			x	no	2	<0.05	no	no	no	yes
[104]	Human lymphocytes	x	1800 MHz	5 mW/cm ²	60 min			x	no	9	<0.05	no	no	no	no
	Human lymphocytes	x	1800 MHz	5 mW/cm ²	120 min			x	no	9	<0.05	no	no	no	no
	Human lymphocytes	x	1800 MHz	5 mW/cm ²	180 min			x	no	9	<0.05	no	no	no	no
	Human lymphocytes	x	1800 MHz	10 mW/cm ²	60 min			x	no	9	<0.05	no	no	no	no
	Human lymphocytes	x	1800 MHz	10 mW/cm ²	120 min			x	no	9	<0.05	no	no	no	no
	Human lymphocytes	x	1800 MHz	10 mW/cm ²	180 min			x	no	9	<0.05	no	no	no	no
	Human lymphocytes	x	1800 MHz	20 mW/cm ²	60 min			x	no	9	<0.05	no	no	no	no
	Human lymphocytes	x	1800 MHz	20 mW/cm ²	120 min			x	no	9	<0.05	no	no	no	no
	Human lymphocytes	x	1800 MHz	20 mW/cm ²	180 min			x	no	9	<0.05	no	no	no	no
	Human lymphocytes	x	1800 MHz	20 mW/cm ²	180 min			x	no	9	<0.05	no	no	no	no

n.s.: Not specified.

Table S2. Association test for exposure frequency, duration and SAR intervals.

Interval		IN (%) ^a	OUT (%) ^b	p Value
Frequency	≤1 GHz	22.9	20.8	0.32
	1–3 GHz	21.5	21.9	0.49
	>3 GHz	15.6	22.1	0.26
Exposure duration	≤1 h	24.7	21.1	0.29
	1–24 h	22.9	20.4	0.29
	>24 h	18.3	23.3	0.12
SAR	≤1 W/kg	22.3	19.1	0.24
	1–2 W/kg	19.2	21.1	0.41
	>2 W/kg	19.0	21.5	0.33

^a IN column shows the ratio of positive findings inside the corresponding interval; ^b OUT column shows the ratio outside the defined interval.

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