

**Supplementary Table S2.** Chemokines, cytokines, and biomarkers (CCBMs) expressed or secreted in cells, tissues, and tissue explants after irradiation with UVC, UVB, or UVA.

Wavelength (nm)	CCBM	Dose(s)	Cells/tissues	Outcome (reference)
<b>UVC spectrum (200 to 290 nm)</b>				
255 / 405	FGF1	9.28 mJ/cm <sup>2</sup> / 17.88 mJ/cm <sup>2</sup>	Fibroblasts	• Fibroblasts had increased levels of FGF-acidic secretion at 24 hours after exposure [6]
255 / 405	FGF1	9.28 mJ/cm <sup>2</sup> / 17.88 mJ/cm <sup>2</sup>	HEPM cells	• HEPM cells had decreased levels of FGF-acidic secretion at 48 hours after exposure [6]
255 / 405	IL6	9.28 mJ/cm <sup>2</sup> / 17.88 mJ/cm <sup>2</sup>	Fibroblasts	• Fibroblasts had increased levels of IL6 secretion at 24 and 48 hours after exposure [6]
255 / 405	IL6	9.28 mJ/cm <sup>2</sup> / 17.88 mJ/cm <sup>2</sup>	HEPM cells	• HEPM cells had increased levels of IL6 secretion at 24 hours after exposure [6]
255 / 405	PIGF	9.28 mJ/cm <sup>2</sup> / 17.88 mJ/cm <sup>2</sup>	Fibroblasts	• Fibroblasts had increased levels of PIGF secretion at 24 hours after exposure [6]
255 / 405	PIGF	9.28 mJ/cm <sup>2</sup> / 17.88 mJ/cm <sup>2</sup>	HEPM cells	• HEPM cells had decreased levels of PIGF secretion at 24 hours after exposure [6]
255 / 405	TGFA	9.28 mJ/cm <sup>2</sup> / 17.88 mJ/cm <sup>2</sup>	Fibroblasts	• Fibroblasts had increased levels of TGFA secretion at 48 hours after exposure [6]
255 / 405	TNF $\alpha$	9.28 mJ/cm <sup>2</sup> / 17.88 mJ/cm <sup>2</sup>	HEPM cells	• HEPM cells had increased levels of TNFA secretion at 48 hours after exposure [6]
255 / 405	VEGF	9.28 mJ/cm <sup>2</sup> / 17.88 mJ/cm <sup>2</sup>	Fibroblasts	• Fibroblasts had decreased levels of VEGF secretion at 24 hours after exposure [6]
255 / 405	VEGF	9.28 mJ/cm <sup>2</sup> / 17.88 mJ/cm <sup>2</sup>	HEPM cells	• HEPM cells had decreased levels of VEGF secretion at 24 hours after exposure [6]
254	FGF	15-60 mJ/cm <sup>2</sup>	Skin	• Epidermal wounds in rats had increased levels of FGF expression [56]
254	FN1		Fibroblasts	• Human fibroblasts had increased levels of fibronectin secretion and collagen lattices contain treated fibroblasts contracted faster at 7 days [12]
254	TGFB	15-60 mJ/cm <sup>2</sup>	Skin	• Epidermal wounds in rats had increased levels of TGFB mRNA expression and secretion at 7 (15 mJ/cm <sup>2</sup> ) and 21 (60 mJ/cm <sup>2</sup> ) days after exposure [57]
255	BMP10	9.28 mJ/cm <sup>2</sup>	HEPM cells	• HEPM cells had decreased levels of BMP-10 secretion at 48 hours after exposure [6]

255	FGF1	9.28 mJ/cm <sup>2</sup>	HEPM cells	<ul style="list-style-type: none"> <li>• HEPM cells had decreased levels of FGF-acidic secretion at 24 hours after exposure [6]</li> </ul>
255	IL6	9.28 mJ/cm <sup>2</sup>	Fibroblasts	<ul style="list-style-type: none"> <li>• Fibroblasts had increased levels of IL6 secretion at 24 and 48 hours after exposure [6]</li> </ul>
255	IL6	9.28 mJ/cm <sup>2</sup>	HEPM cells	<ul style="list-style-type: none"> <li>• HEPM cells had increased levels of IL6 secretion at 24 and 48 hours after exposure [6]</li> </ul>
255	PIGF	9.28 mJ/cm <sup>2</sup>	Fibroblasts	<ul style="list-style-type: none"> <li>• Fibroblasts had increased levels of PIGF secretion at 24 hours after exposure [6]</li> </ul>
255	TGFA	9.28 mJ/cm <sup>2</sup>	Fibroblasts	<ul style="list-style-type: none"> <li>• Fibroblasts had increased levels of TGFA secretion at 24 hours after exposure [6]</li> </ul>
255	VEGF	9.28 mJ/cm <sup>2</sup>	Fibroblasts	<ul style="list-style-type: none"> <li>• Fibroblasts had decreased levels of VEGF secretion at 24 hours after exposure [6]</li> </ul>
255	VEGF	9.28 mJ/cm <sup>2</sup>	HEPM cells	<ul style="list-style-type: none"> <li>• HEPM cells had increased levels of VEGF secretion at 24 hours after exposure [6]</li> </ul>
200-320 a	CSF	300 J/m <sup>2</sup>	Keratinocytes	<ul style="list-style-type: none"> <li>• Murine PAM212 cells had increased levels of GM-CSF mRNA expression and secretion as early as 1 hour after exposure [58]</li> </ul>
200-320 a	IL3	300 J/m <sup>2</sup>	Keratinocytes	<ul style="list-style-type: none"> <li>• Murine PAM212 cells had increased levels of IL3 mRNA expression as early as at 1 hour after exposure [58]</li> </ul>
<b>UVB Spectrum (290 to 320 nm)</b>				
250-400 i	IL6	100 J/m <sup>2</sup>	Keratinocytes	<ul style="list-style-type: none"> <li>• Human epidermal cells had increased levels of IL6 mRNA expression and secretion at 24 hours after exposure [59]</li> </ul>
250-360 h	IL3	120-400 J/m <sup>2</sup>	Keratinocytes	<ul style="list-style-type: none"> <li>• Murine PAM 212 cells had increased levels of IL3 expression and secretion after exposure [60]</li> </ul>
280-315	IL6	250-500 J/m <sup>2</sup>	Keratinocytes	<ul style="list-style-type: none"> <li>• NHEK had increased levels of IL6 expression and secretion at 24 hours after exposure [61]</li> </ul>
280-315	TNFA	250-500 J/m <sup>2</sup>	Keratinocytes	<ul style="list-style-type: none"> <li>• NHEK had increased levels of TNF<math>\alpha</math> expression and secretion at 24 hours after exposure [61]</li> </ul>
280-320	VEGF	30-60 mJ/cm <sup>2</sup>	Skin	<ul style="list-style-type: none"> <li>• Biopsies from human and murine skin had increased levels of VEGF immunostaining at 48 hours after exposure [26]</li> </ul>
301-312 k	ICAM1	100 mJ/cm <sup>2</sup>	Endothelial cells	<ul style="list-style-type: none"> <li>• Human dermal microvascular endothelial cell (HDMEC) had increased levels of</li> </ul>

				ICAM-1 expression at 24 hours after exposure [62]
305 e	IL1	0.1 J/cm <sup>2</sup>	Keratinocytes	<ul style="list-style-type: none"> <li>Human keratinocytes had increased levels of IL1 secretion at 4 days after exposure [25]</li> </ul>
310	IL1	100-800 mJ/cm <sup>2</sup>	Keratinocytes	<ul style="list-style-type: none"> <li>Human squamous cell carcinoma, murine Pam 212, and murine epidermal cell keratinocytes had increased levels of IL1 mRNA expression and secretion at 24 hours after exposure [63–65]</li> </ul>
310 g	IL1	184 mJ/cm <sup>2</sup>	Skin	<ul style="list-style-type: none"> <li>Biopsies from human skin had increased levels of IL1 immunostaining at 24 hours after exposure [27]</li> </ul>
310 g	TNFA	184 mJ/cm <sup>2</sup>	Skin	<ul style="list-style-type: none"> <li>Biopsies from human skin had increased levels of TNF immunostaining at 24 hours after exposure [27]</li> </ul>
310 j	SELE	2.5 MED	Skin	<ul style="list-style-type: none"> <li>Biopsies from human skin had increased levels of E-selectin immunostaining at 4, 8, 24 hours after exposure [27]</li> </ul>
310 j	ICAM1	15-20 mJ/cm <sup>2</sup>	Endothelial cells	<ul style="list-style-type: none"> <li>Human dermal microvascular endothelial cell (HMEC-1) line had increased levels of ICAM-1 staining expression at 24 hours after exposure [66]</li> </ul>
310 j	ICAM1	2.5 MED	Skin	<ul style="list-style-type: none"> <li>Biopsies from human skin had increased levels of ICAM-1 immunostaining at 4, 8, 24 hours after exposure [27]</li> </ul>
312	CCL2	2 MED	Skin	<ul style="list-style-type: none"> <li>Biopsies from human skin had increased levels of CCL2 mRNA expression at 24 hours after exposure [28]</li> </ul>
312	CCL20	2 MED	Skin	<ul style="list-style-type: none"> <li>Biopsies from human skin had increased levels of CCL20 mRNA expression at 24 hours after exposure [28,67]</li> </ul>
312	CXCL1	2 MED	Skin	<ul style="list-style-type: none"> <li>Biopsies from human skin had increased levels of CXCL1 mRNA expression at 24 hours after exposure [28]</li> </ul>
312	CXCL8	2 MED	Skin	<ul style="list-style-type: none"> <li>Biopsies from human skin had increased levels of IL8 mRNA expression at 24 hours after exposure [28]</li> </ul>
312	IL10	2 MED	Skin	<ul style="list-style-type: none"> <li>Biopsies from human skin had increased levels of IL10 mRNA expression at 24 hours after exposure [28]</li> </ul>
313 b	IL6	10-100 J/cm <sup>2</sup>	Keratinocytes	<ul style="list-style-type: none"> <li>Normal and malignant human keratinocytes had increased levels of IL6 mRNA</li> </ul>

				expression and secretion at 24 hours after exposure [68]
313 f	TNFA	200-750 J/m <sup>2</sup>	Keratinocytes	<ul style="list-style-type: none"> <li>Human HaCaT cells had increased levels of TNFA secretion at 24 hours after exposure [69]</li> </ul>
313 f	TNFA	200-750 J/m <sup>2</sup>	Skin	<ul style="list-style-type: none"> <li>Murine epidermis and dermis had increased levels of TNFA expression at 12 hours after exposure [69]</li> </ul>
NB-UVB	SMAD3	1.5-1.8 J/cm <sup>2</sup>	Skin	<ul style="list-style-type: none"> <li>Biopsies from skin of individuals with atopic dermatitis had increased levels of Smad3 mRNA expression at 12 hours after exposure [70]</li> </ul>
NB-UVB	SMAD4	1.5-1.8 J/cm <sup>2</sup>	Skin	<ul style="list-style-type: none"> <li>Biopsies from skin of individuals with atopic dermatitis had increased levels of Smad4 mRNA expression at 12 hours after exposure [70]</li> </ul>
NB-UVB	TGFB	1.5-1.8 J/cm <sup>2</sup>	Skin	<ul style="list-style-type: none"> <li>Biopsies from skin of individuals with atopic dermatitis had increased levels of TGFB mRNA expression at 12 hours after exposure [70]</li> </ul>
UVB	TGFA	3 MED	Skin	<ul style="list-style-type: none"> <li>Cutaneous exudates from human skin abrasions had increased levels of TGFA in irradiated sites at 30 minutes after exposure [71]</li> </ul>
<b>UVA spectrum (320 to 400 nm)</b>				
340-400	CXCL8	20 J/m <sup>2</sup>	Skin	<ul style="list-style-type: none"> <li>Sclerotic skin biopsies had increased levels of IL8 mRNA expression (20 J/m<sup>2</sup>, cumulative 800 J/m<sup>2</sup> total) that decreased after irradiation [22]</li> </ul>
340-400	IL6	20 J/m <sup>2</sup>	Skin	<ul style="list-style-type: none"> <li>Sclerotic skin biopsies had increased levels of IL6 mRNA expression (20 J/m<sup>2</sup>, cumulative 800 J/m<sup>2</sup> total) that decreased after irradiation [22]</li> </ul>
360 c	CSF	1-10 J/cm <sup>2</sup>	Keratinocytes	<ul style="list-style-type: none"> <li>Human HaCaT keratinocytes had increased levels of GM-CSF mRNA expression and secretion at 24 and 48 hours after exposure through an IL1 alpha independent pathway [24]</li> </ul>
365 d	CSF	1 J/cm <sup>2</sup>	Keratinocytes	<ul style="list-style-type: none"> <li>Human keratinocytes had increased levels of GM-CSF secretion at 4 days after exposure [25]</li> </ul>

365 d	IL6	1 J/cm <sup>2</sup>	Keratinocytes	<ul style="list-style-type: none"> <li>Human keratinocytes had increased levels of IL6 secretion at 4 days after exposure [25]</li> </ul>
365 d	IL8	1 J/cm <sup>2</sup>	Keratinocytes	<ul style="list-style-type: none"> <li>Human keratinocytes had increased levels of IL8 secretion at 4 days after exposure [25]</li> </ul>
405	FGF1	17.88 mJ/cm <sup>2</sup>	Fibroblasts	<ul style="list-style-type: none"> <li>Fibroblasts had decreased levels of FGF-acidic secretion at 24 hours after exposure [6]</li> </ul>

<sup>a</sup>UV range from 290 to 320 nm  
<sup>b</sup>UV range from 290 to 320 nm, emission peak at 313 nm  
<sup>c</sup>UV range from 330 to 460 nm, emission peak at 360 nm  
<sup>d</sup>UV range from 310 to 400 nm, emission peak at 365 nm  
<sup>e</sup>UV range from 295 to 315 nm, emission peak at 305 nm  
<sup>f</sup>UV range from 290 to 320 nm, emission peak at 313 nm  
<sup>g</sup>UV range from 270 to 380 nm, emission peak at 310 nm  
<sup>h</sup>UV range from 250 to 360 nm; 65% in range of 280 to 315 nm (UVB); remaining in range of 250 to 280 nm (UVC) and in range of 315 to 360 nm (UVA)  
<sup>i</sup>UV range from 250 to 400 nm  
<sup>j</sup>UV range from 270 to 400 nm, emission peak at 310 nm; 43.3% in range of 290 to 320 nm (UVB); <0.1% in range of 200-290 nm (UVC); and 56.6% in range of 320-400 nm (UVA)  
<sup>k</sup>UV range of 290 to 325 nm, emission peaks at 301 and 312 nm

MED, minimum erythemal dose