

Table S1. Compounds identified in corn silk (CS) extract and mouse skin using LC-MS/MS

			CS extract	CS mouse skin (CSL)	CS mouse skin (CSH)				CS extract	CS mouse skin (CSL)	CS mouse skin (CSH)
No.	ID	Metabolites	Intensities	Intensities	Intensities	No.	ID	Metabolites	Intensities	Intensities	Intensities
1	HMDB00738	Indole [1,2]	330.24×10^7			51	HMDB00126	Glycerol 3-phosphate	12.16×10^7	0.75×10^7	0.73×10^7
2	HMDB00375	3-(3-Hydroxyphenyl)propanoic acid [3]	211.97×10^7			52	HMDB04063	Metanephrene	12.12×10^7	1.49×10^7	2.14×10^7
3	HMDB00894	Vinylacetyl glycine	153.76×10^7	11.42×10^7	9.58×10^7	53	HMDB00482	Caprylic acid	11.56×10^7		
4	HMDB01412	7,8-Dihydropteroic acid	142.74×10^7	0.15×10^7	0.16×10^7	54	HMDB06488	N-Acetyl-L-glutamate 5-semialdehyde	10.42×10^7		
5	HMDB12148	2-Hexaprenyl-6-methoxy-1,4-benzoquinol	118.31×10^7	0.96×10^7	0.98×10^7	55	HMDB12138	1-Naphthol	10.06×10^7		
6	HMDB00452	L-Alpha-aminobutyric acid	115.6×10^7			56	HMDB04821	Bisnorbiotin	10×10^7	2.65×10^7	1.65×10^7
7	HMDB04827	Proline betaine [4,5]	97.09×10^7	0.06×10^7	0.05×10^7	57	HMDB01552	2-Keto-glutaramic acid	9.64×10^7		
8	HMDB00167	L-Threonine [6,7]	91.34×10^7	0.09×10^7	0.16×10^7	58	HMDB00462	Allantoin	9.57×10^7	1.27×10^7	1.74×10^7
9	HMDB00687	L-Leucine [8,9]	82.09×10^7			59	HMDB00510	Aminoadipic acid	9.51×10^7		
10	HMDB00930	trans-Cinnamic acid [10],[11,12]	70.9×10^7			60	HMDB09449	PE(20:5/14:1)	9.44×10^7		
11	HMDB00162	L-proline [13],[14]	66.31×10^7	6.6×10^7	4.74×10^7	61	HMDB33433	Homostachydrine	9.3×10^7		
12	HMDB00267	Pyroglutamic acid [15],[16]	65.16×10^7	0.81×10^7	0.38×10^7	62	HMDB07295	DG(18:3/22:6)	9.16×10^7		
13	HMDB00159	L-Phenylalanine [17],[18]	49.79×10^7	0.38×10^7	0.3×10^7	63	HMDB13164	2-Hydroxy lauroyl carnitine	8.18×10^7	0.51×10^7	0.87×10^7
14	HMDB04610	Phytosphingosine [19],[20]	48.96×10^7	0.18×10^7	0.14×10^7	64	HMDB0012204	Cis-zeatin	8.93×10^7	0.1×10^7	0.3×10^7
15	HMDB00174	L-Fucose	45.1×10^7			65	HMDB00500	4-Hydroxybenzoic acid	8.11×10^7	0.95×10^7	1.11×10^7
16	HMDB00962	Lipoamide [21]	37.85×10^7	0.88×10^7	0.75×10^7	66	HMDB00472	5-Hydroxy-L-tryptophan	8.09×10^7	0.38×10^7	1.39×10^7
17	HMDB00262	Thymine	37.34×10^7			67	HMDB00562	Creatinine	7.99×10^7	9.35×10^7	15.32×10^7
18	HMDB00191	L-Aspartic acid	36.27×10^7	2.46×10^7	3.31×10^7	68	HMDB00050	Adenosine	7.73×10^7	0.32×10^7	0.37×10^7
19	HMDB01438	25-Hydroxyvitamin D2 [22]	35.19×10^7	0.19×10^7	0.21×10^7	69	HMDB00567	Cinnamic acid	7.5×10^7	0.98×10^7	1.17×10^7
20	HMDB01713	m-Coumaric acid	34.56×10^7			70	HMDB12096	SM(d18:1/12:0)	7.39×10^7	0.52×10^7	0.8×10^7
21	HMDB00707	4-Hydroxyphenylpyruvic acid	34.07×10^7			71	HMDB04058	5,6-Dihydroxyindole	7.15×10^7	0.53×10^7	0.35×10^7
22	HMDB00703	Mandelic acid [10],[23]	31.96×10^7			72	HMDB00444	3-Furoic acid	7.11×10^7		
23	HMDB01488	Nicotinic acid [24],[25],[26]	31.25×10^7	15.95×10^7	11.85×10^7	73	HMDB06115	Benzaldehyde	6.98×10^7	6.61×10^7	7.08×10^7
24	HMDB00832	Capryloyl glycine	31.1×10^7	38.44×10^7	38.79×10^7	74	HMDB02331	Imidazoleacetic acid riboside	6.61×10^7		
25	HMDB00070	Pipecolic acid	28.32×10^7			75	HMDB01169	4-Aminophenol	6.26×10^7		
26	HMDB01410	2-Amino-4-oxo-6-(1',2'-dioxopropyl)-7,8-dihydroxypteridine	26.21×10^7			76	HMDB00232	Quinolinic acid	6.14×10^7		
27	HMDB00157	Hypoxanthine [27],Abcam(143643)]	25.74×10^7	42.82×10^7	49.7×10^7	77	HMDB07005	CPA(18:1)	6.05×10^7	0.17×10^7	0.37×10^7

28	HMDB00044	Ascorbic acid [28],[29,30]	25.63×10^7	0.12×10^7	0.15×10^7	78	HMDB02287	Homocysteine thiolactone	5.99×10^7	0.1×10^7	0.1×10^7
29	HMDB00305	Vitamin A [31],[32]	24.04×10^7	0.2×10^7	0.45×10^7	79	HMDB01334	Tridemorph	5.66×10^7	2.75×10^7	3.27×10^7
30	HMDB00020	p-Hydroxyphenylacetic acid [33],[34]	23.24×10^7	0.5×10^7	0.52×10^7	80	HMDB07918	PC(14:1/20:5)	5.63×10^7	0.32×10^7	0.25×10^7
31	HMDB12234	Histidinal	23.03×10^7	1.45×10^7	1.43×10^7	81	HMDB01488	Nicotinic acid	5.63×10^7	4.88×10^7	4.3×10^7
32	HMDB00034	Adenine	22.59×10^7	1.07×10^7	1×10^7	82	HMDB01527	3-Methylthiopropionic acid	5.41×10^7	3.15×10^7	2.11×10^7
33	HMDB03011	O-Acetylserine	21.18×10^7			83	HMDB03441	Cinnamaldehyde	5.07×10^7		
34	HMDB34610	Zucchini factor b	20.36×10^7			84	HMDB12228	Ethylphosphate	4.99×10^7	0.15×10^7	0.11×10^7
35	HMDB02511	3,4,5-Trimethoxycinnamic acid	20.05×10^7	3.87×10^7	3.78×10^7	85	HMDB02149	3 Hydroxycoumarin	4.79×10^7	7.54×10^7	7.97×10^7
36	HMDB01476	3-Hydroxyanthranilic acid	17.21×10^7	0.22×10^7	0.26×10^7	86	HMDB03573	Scopolamine	4.49×10^7	1.32×10^7	0.49×10^7
37	HMDB04072	4-Hydroxystyrene	17.04×10^7			87	HMDB00651	Decanoylcarnitine	4.45×10^7	1.37×10^7	1.24×10^7
38	HMDB02107	Phthalic acid	16.97×10^7			88	HMDB01232	4-Nitrophenol	4.36×10^7	1.82×10^7	2.59×10^7
39	HMDB02268	Beta-Cryptoxanthin				89	HMDB00707	4-Hydroxyphenylpyruvic acid	4.36×10^7		
40	HMDB00043	Betaine	15.64×10^7	2.03×10^7	2.14×10^7	90	HMDB60681	4-hydroxy-2,6-dimethylaniline	4.32×10^7		
41	HMDB10700	CerP(d18:1/16:0)	15.57×10^7			91	HMDB02080	<u>Petroselinic acid</u>	4.29×10^7	103.93×10^7	60.9×10^7
42	C05908 (KEGG)	Delphinidin	14.28×10^7			92	HMDB02285	2-Indolecarboxylic acid	4.22×10^7		
43	HMDB00158	L-Tyrosine	14.26×10^7	0.14×10^7	0.12×10^7	93	HMDB12182	8-Hydroxypurine	4.1×10^7		
44	HMDB00148	L-Glutamic acid	14.14×10^7			94	HMDB12273	Palmitic amide	4.1×10^7	0.39×10^7	0.46×10^7
45	HMDB01868	5-Methoxysalicylic acid	13.98×10^7			95	HMDB00130	Homogentisic acid	4.09×10^7	0.58×10^7	0.57×10^7
46	HMDB00014	Deoxycytidine	13.73×10^7	6.23×10^7	5.9×10^7	96	HMDB02144	1,3-Dimethyluracil	4.08×10^7	0.65×10^7	0.39×10^7
47	HMDB00227	Mevalonic acid	13.66×10^7	18.76×10^7	19.82×10^7	97	HMDB01127	6-Phosphonoglucono-D-lactone	3.96×10^7		
48	HMDB01388	Alpha-Linolenic acid	13.62×10^7			98	HMDB00734	Indoleacrylic acid	3.96×10^7	0.96×10^7	1.08×10^7
49	HMDB11714	Vanilpyruvic acid	12.71×10^7	0.06×10^7	0.1×10^7	99	HMDB02287	Homocysteine thiolactone	3.85×10^7	0.1×10^7	0.1×10^7
50	HMDB06833	2-Acetolactate	12.34×10^7			100	HMDB12199	Chorismate	3.82×10^7	0.16×10^7	0.12×10^7

Metabolite identification was identified based on accurate mass data, retention time, experimental MS/MS spectra, and library MS/MS spectra in HMDB, MyCompoundID, and KEGG. Compounds detected with the highest to the 100th maximum intensity were listed in intensity-based order. Compounds marked **bold** are metabolites exhibiting antioxidative and anti-inflammatory and photo-aging effects in corn silk (CS) extract among the top 30 peaks.

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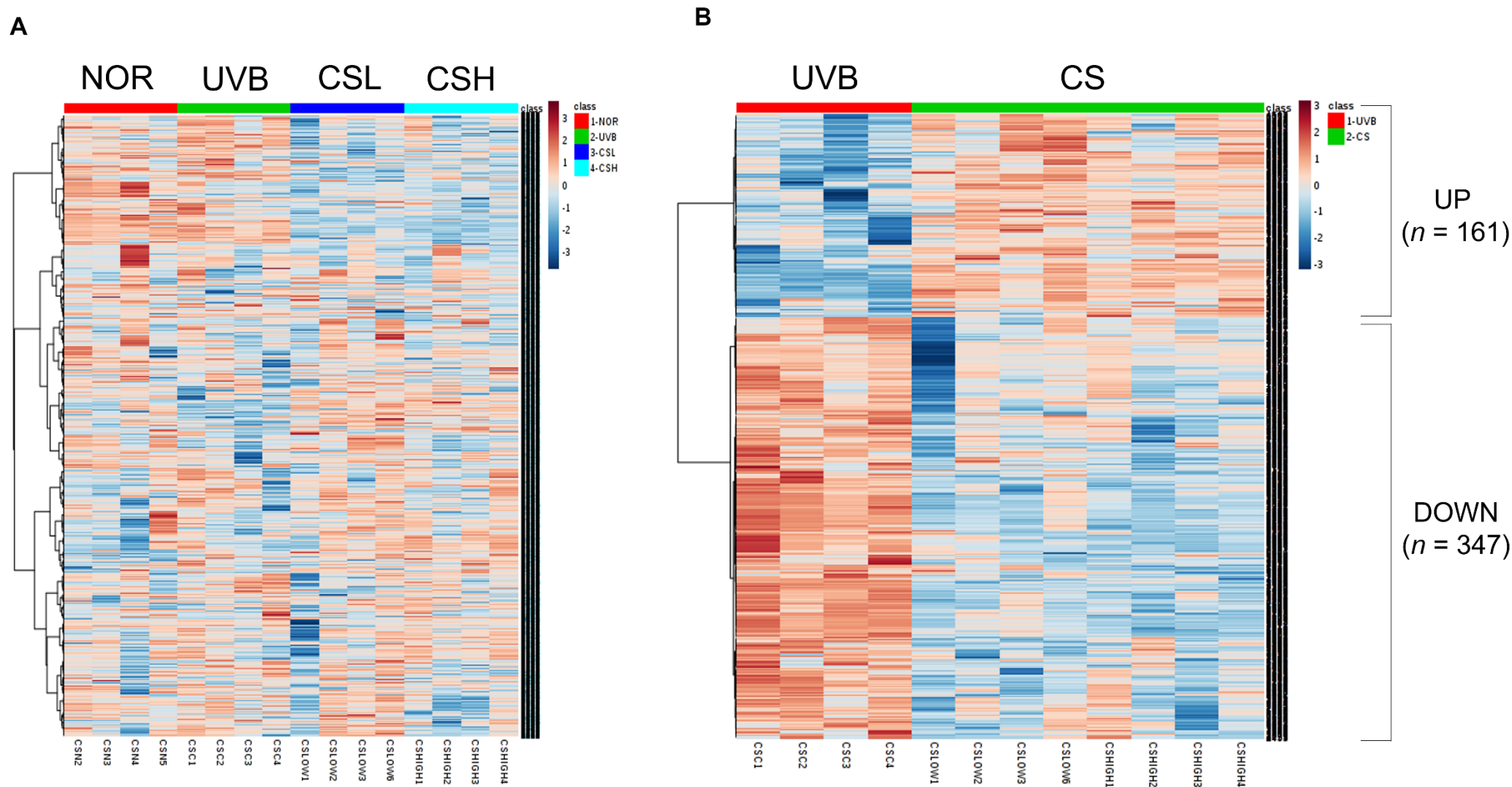


Figure S1. Heatmaps of UVB-irradiated and CS extract-administered mouse skin metabolites.

A total of 7886 peaks were identified by an LC-MS/MS based metabolomics analysis, as shown by a heatmap illustrating the change in metabolite peak intensities in normal mice (NOR), UVB-irradiated mice (UVB), UVB-irradiated and 2.0g/kg/day CS-treated mice (CSL), and UVB-irradiated and 4.0g/kg/day CS-treated mice (CSH) (A). The UVB group and both CSL, CSH groups combined into CS group were compared in heatmap form to show upregulated (UP) and downregulated (DOWN) metabolites in mice skin (B). A total of 508 metabolites were compared after data filtering by $VIP > 1.0$ from OPLS-DA and $p < 0.05$ from Mann Whitey U test. Data was log transformed and pareto scaled using Metaboanalyst 4.0. UP: upregulated; DOWN: downregulated.