

Supplemental data

The anti-angiogenic activity of *Artemisia herba-alba*'s essential oil and its relation with the harvest period

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Supplemental Table 1. Inhibitory effect of *Artemisia herba-alba* essential oil (EO) from seeds stage (A) and floral stage (B) on cell proliferation of HUVECs. Cells were incubated with various concentrations (10-20-40 and 80 µM) of EO- A (Fig.B) and EO-B (Fig.C) for 24-48 and 72 hours of treatment, and cell viability was measured by MTT cell proliferation assay. The results are expressed as the mean_{SD}. * Indicates significant difference from the control group by the Tukey test ($p \leq 0.05$).

Supplemental Table 1. Multiple Comparisons/ EO seed stage (refer to Figure.1B)

Tukey HSD

Dependent Variable	(I) VAR00001	(J) VAR00001	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
						VAR00002	1,00
		3,00	12,0935(*)	1,21168	,000	8,1546	16,0324
		4,00	17,0867(*)	1,21168	,000	13,1478	21,0256
		5,00	19,8485(*)	1,21168	,000	15,9096	23,7875
		6,00	29,9620(*)	1,21168	,000	26,0231	33,9009
		7,00	28,5407(*)	1,21168	,000	24,6018	32,4796
	2,00	1,00	-2,5645	1,21168	,379	-6,5034	1,3745
		3,00	9,5291(*)	1,21168	,000	5,5902	13,4680
		4,00	14,5222(*)	1,21168	,000	10,5833	18,4611
		5,00	17,2841(*)	1,21168	,000	13,3452	21,2230
		6,00	27,3976(*)	1,21168	,000	23,4587	31,3365
		7,00	25,9763(*)	1,21168	,000	22,0374	29,9152
	3,00	1,00	-12,0935(*)	1,21168	,000	-16,0324	-8,1546
		2,00	-9,5291(*)	1,21168	,000	-13,4680	-5,5902
		4,00	4,9931(*)	1,21168	,007	1,0542	8,9321
		5,00	7,7550(*)	1,21168	,000	3,8161	11,6939
		6,00	17,8685(*)	1,21168	,000	13,9296	21,8074
		7,00	16,4472(*)	1,21168	,000	12,5083	20,3861
	4,00	1,00	-17,0867(*)	1,21168	,000	-21,0256	-13,1478
		2,00	-14,5222(*)	1,21168	,000	-18,4611	-10,5833
		3,00	-4,9931(*)	1,21168	,007	-8,9321	-1,0542
		5,00	2,7619	1,21168	,299	-1,1770	6,7008
		6,00	12,8753(*)	1,21168	,000	8,9364	16,8143
		7,00	11,4541(*)	1,21168	,000	7,5151	15,3930
	5,00	1,00	-19,8485(*)	1,21168	,000	-23,7875	-15,9096
		2,00	-17,2841(*)	1,21168	,000	-21,2230	-13,3452
		3,00	-7,7550(*)	1,21168	,000	-11,6939	-3,8161
		4,00	-2,7619	1,21168	,299	-6,7008	1,1770
		6,00	10,1135(*)	1,21168	,000	6,1746	14,0524
		7,00	8,6922(*)	1,21168	,000	4,7533	12,6311
	6,00	1,00	-29,9620(*)	1,21168	,000	-33,9009	-26,0231

		2,00	-27,3976(*)	1,21168	,000	-31,3365	-23,4587
		3,00	-17,8685(*)	1,21168	,000	-21,8074	-13,9296
		4,00	-12,8753(*)	1,21168	,000	-16,8143	-8,9364
		5,00	-10,1135(*)	1,21168	,000	-14,0524	-6,1746
		7,00	-1,4213	1,21168	,897	-5,3602	2,5176
	7,00	1,00	-28,5407(*)	1,21168	,000	-32,4796	-24,6018
		2,00	-25,9763(*)	1,21168	,000	-29,9152	-22,0374
		3,00	-16,4472(*)	1,21168	,000	-20,3861	-12,5083
		4,00	-11,4541(*)	1,21168	,000	-15,3930	-7,5151
		5,00	-8,6922(*)	1,21168	,000	-12,6311	-4,7533
		6,00	1,4213	1,21168	,897	-2,5176	5,3602
VAR00003	1,00	2,00	,5512	2,64516	1,000	-8,0476	9,1500
		3,00	6,6266	2,64516	,207	-1,9722	15,2254
		4,00	7,9472	2,64516	,082	-,6516	16,5460
		5,00	12,4302(*)	2,64516	,002	3,8313	21,0290
		6,00	16,6234(*)	2,64516	,000	8,0246	25,2222
		7,00	26,5637(*)	2,64516	,000	17,9648	35,1625
	2,00	1,00	-,5512	2,64516	1,000	-9,1500	8,0476
		3,00	6,0754	2,64516	,291	-2,5235	14,6742
		4,00	7,3960	2,64516	,123	-1,2028	15,9948
		5,00	11,8790(*)	2,64516	,003	3,2801	20,4778
		6,00	16,0722(*)	2,64516	,000	7,4733	24,6710
		7,00	26,0125(*)	2,64516	,000	17,4136	34,6113
	3,00	1,00	-6,6266	2,64516	,207	-15,2254	1,9722
		2,00	-6,0754	2,64516	,291	-14,6742	2,5235
		4,00	1,3206	2,64516	,999	-7,2782	9,9194
		5,00	5,8036	2,64516	,339	-2,7953	14,4024
		6,00	9,9968(*)	2,64516	,016	1,3980	18,5956
		7,00	19,9371(*)	2,64516	,000	11,3383	28,5359
	4,00	1,00	-7,9472	2,64516	,082	-16,5460	,6516
		2,00	-7,3960	2,64516	,123	-15,9948	1,2028
		3,00	-1,3206	2,64516	,999	-9,9194	7,2782
		5,00	4,4830	2,64516	,627	-4,1159	13,0818
		6,00	8,6762(*)	2,64516	,047	,0774	17,2750
		7,00	18,6165(*)	2,64516	,000	10,0176	27,2153
	5,00	1,00	-12,4302(*)	2,64516	,002	-21,0290	-3,8313
		2,00	-11,8790(*)	2,64516	,003	-20,4778	-3,2801
		3,00	-5,8036	2,64516	,339	-14,4024	2,7953
		4,00	-4,4830	2,64516	,627	-13,0818	4,1159
		6,00	4,1932	2,64516	,693	-4,4056	12,7921
		7,00	14,1335(*)	2,64516	,000	5,5347	22,7323
	6,00	1,00	-16,6234(*)	2,64516	,000	-25,2222	-8,0246
		2,00	-16,0722(*)	2,64516	,000	-24,6710	-7,4733
		3,00	-9,9968(*)	2,64516	,016	-18,5956	-1,3980
		4,00	-8,6762(*)	2,64516	,047	-17,2750	-,0774
		5,00	-4,1932	2,64516	,693	-12,7921	4,4056
		7,00	9,9403(*)	2,64516	,017	1,3415	18,5391
	7,00	1,00	-26,5637(*)	2,64516	,000	-35,1625	-17,9648

		2,00	-26,0125(*)	2,64516	,000	-34,6113	-17,4136
		3,00	-19,9371(*)	2,64516	,000	-28,5359	-11,3383
		4,00	-18,6165(*)	2,64516	,000	-27,2153	-10,0176
		5,00	-14,1335(*)	2,64516	,000	-22,7323	-5,5347
		6,00	-9,9403(*)	2,64516	,017	-18,5391	-1,3415
VAR00004	1,00	2,00	12,8993(*)	3,59383	,024	1,2165	24,5821
		3,00	16,0859(*)	3,59383	,003	4,4032	27,7687
		4,00	20,0204(*)	3,59383	,000	8,3376	31,7031
		5,00	23,8245(*)	3,59383	,000	12,1417	35,5072
		6,00	53,7150(*)	3,59383	,000	42,0322	65,3977
		7,00	60,1947(*)	3,59383	,000	48,5120	71,8775
	2,00	1,00	-12,8993(*)	3,59383	,024	-24,5821	-1,2165
		3,00	3,1866	3,59383	,971	-8,4961	14,8694
		4,00	7,1211	3,59383	,454	-4,5617	18,8039
		5,00	10,9252	3,59383	,077	-,7576	22,6079
		6,00	40,8157(*)	3,59383	,000	29,1329	52,4984
		7,00	47,2954(*)	3,59383	,000	35,6127	58,9782
	3,00	1,00	-16,0859(*)	3,59383	,003	-27,7687	-4,4032
		2,00	-3,1866	3,59383	,971	-14,8694	8,4961
		4,00	3,9345	3,59383	,923	-7,7483	15,6172
		5,00	7,7385	3,59383	,360	-3,9442	19,4213
		6,00	37,6290(*)	3,59383	,000	25,9463	49,3118
		7,00	44,1088(*)	3,59383	,000	32,4260	55,7915
	4,00	1,00	-20,0204(*)	3,59383	,000	-31,7031	-8,3376
		2,00	-7,1211	3,59383	,454	-18,8039	4,5617
		3,00	-3,9345	3,59383	,923	-15,6172	7,7483
		5,00	3,8041	3,59383	,933	-7,8787	15,4868
		6,00	33,6946(*)	3,59383	,000	22,0118	45,3773
		7,00	40,1743(*)	3,59383	,000	28,4916	51,8571
	5,00	1,00	-23,8245(*)	3,59383	,000	-35,5072	-12,1417
		2,00	-10,9252	3,59383	,077	-22,6079	,7576
		3,00	-7,7385	3,59383	,360	-19,4213	3,9442
		4,00	-3,8041	3,59383	,933	-15,4868	7,8787
		6,00	29,8905(*)	3,59383	,000	18,2077	41,5732
		7,00	36,3702(*)	3,59383	,000	24,6875	48,0530
	6,00	1,00	-53,7150(*)	3,59383	,000	-65,3977	-42,0322
		2,00	-40,8157(*)	3,59383	,000	-52,4984	-29,1329
		3,00	-37,6290(*)	3,59383	,000	-49,3118	-25,9463
		4,00	-33,6946(*)	3,59383	,000	-45,3773	-22,0118
		5,00	-29,8905(*)	3,59383	,000	-41,5732	-18,2077
		7,00	6,4798	3,59383	,560	-5,2030	18,1625
	7,00	1,00	-60,1947(*)	3,59383	,000	-71,8775	-48,5120
		2,00	-47,2954(*)	3,59383	,000	-58,9782	-35,6127
		3,00	-44,1088(*)	3,59383	,000	-55,7915	-32,4260
		4,00	-40,1743(*)	3,59383	,000	-51,8571	-28,4916
		5,00	-36,3702(*)	3,59383	,000	-48,0530	-24,6875
		6,00	-6,4798	3,59383	,560	-18,1625	5,2030

Supplementary Table 2. Multiple Comparisons/ EO floral stage (refer to Figure.1C)

Tukey HSD

Dependent Variable	(I) VAR00001	(J) VAR00001	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
						VAR00002	1,00
		3,00	28,0153(*)	,89063	,000	25,1201	30,9106
		4,00	43,3886(*)	,89063	,000	40,4934	46,2839
		5,00	47,6763(*)	,89063	,000	44,7810	50,5715
		6,00	50,4182(*)	,89063	,000	47,5229	53,3134
		7,00	52,8626(*)	,89063	,000	49,9674	55,7579
	2,00	1,00	-7,0510(*)	,89063	,000	-9,9463	-4,1558
		3,00	20,9643(*)	,89063	,000	18,0690	23,8595
		4,00	36,3376(*)	,89063	,000	33,4424	39,2329
		5,00	40,6252(*)	,89063	,000	37,7300	43,5205
		6,00	43,3671(*)	,89063	,000	40,4719	46,2624
		7,00	45,8116(*)	,89063	,000	42,9164	48,7069
	3,00	1,00	-28,0153(*)	,89063	,000	-30,9106	-25,1201
		2,00	-20,9643(*)	,89063	,000	-23,8595	-18,0690
		4,00	15,3733(*)	,89063	,000	12,4781	18,2686
		5,00	19,6609(*)	,89063	,000	16,7657	22,5562
		6,00	22,4029(*)	,89063	,000	19,5076	25,2981
		7,00	24,8473(*)	,89063	,000	21,9521	27,7426
	4,00	1,00	-43,3886(*)	,89063	,000	-46,2839	-40,4934
		2,00	-36,3376(*)	,89063	,000	-39,2329	-33,4424
		3,00	-15,3733(*)	,89063	,000	-18,2686	-12,4781
		5,00	4,2876(*)	,89063	,002	1,3924	7,1829
		6,00	7,0295(*)	,89063	,000	4,1343	9,9248
		7,00	9,4740(*)	,89063	,000	6,5787	12,3692
	5,00	1,00	-47,6763(*)	,89063	,000	-50,5715	-44,7810
		2,00	-40,6252(*)	,89063	,000	-43,5205	-37,7300
		3,00	-19,6609(*)	,89063	,000	-22,5562	-16,7657
		4,00	-4,2876(*)	,89063	,002	-7,1829	-1,3924
		6,00	2,7419	,89063	,071	-,1533	5,6372
		7,00	5,1864(*)	,89063	,000	2,2911	8,0816
	6,00	1,00	-50,4182(*)	,89063	,000	-53,3134	-47,5229
		2,00	-43,3671(*)	,89063	,000	-46,2624	-40,4719
		3,00	-22,4029(*)	,89063	,000	-25,2981	-19,5076
		4,00	-7,0295(*)	,89063	,000	-9,9248	-4,1343
		5,00	-2,7419	,89063	,071	-5,6372	,1533
		7,00	2,4445	,89063	,135	-,4508	5,3397
	7,00	1,00	-52,8626(*)	,89063	,000	-55,7579	-49,9674
		2,00	-45,8116(*)	,89063	,000	-48,7069	-42,9164
		3,00	-24,8473(*)	,89063	,000	-27,7426	-21,9521
		4,00	-9,4740(*)	,89063	,000	-12,3692	-6,5787

		5,00	-5,1864(*)	,89063	,000	-8,0816	-2,2911
		6,00	-2,4445	,89063	,135	-5,3397	,4508
VAR00003	1,00	2,00	15,3908(*)	1,20223	,000	11,4826	19,2989
		3,00	18,8171(*)	1,20223	,000	14,9089	22,7253
		4,00	36,2380(*)	1,20223	,000	32,3298	40,1461
		5,00	62,0602(*)	1,20223	,000	58,1520	65,9684
		6,00	80,6712(*)	1,20223	,000	76,7630	84,5794
		7,00	83,4672(*)	1,20223	,000	79,5590	87,3754
	2,00	1,00	-15,3908(*)	1,20223	,000	-19,2989	-11,4826
		3,00	3,4263	1,20223	,111	-,4818	7,3345
		4,00	20,8472(*)	1,20223	,000	16,9390	24,7554
		5,00	46,6695(*)	1,20223	,000	42,7613	50,5777
		6,00	65,2805(*)	1,20223	,000	61,3723	69,1887
		7,00	68,0764(*)	1,20223	,000	64,1683	71,9846
	3,00	1,00	-18,8171(*)	1,20223	,000	-22,7253	-14,9089
		2,00	-3,4263	1,20223	,111	-7,3345	,4818
		4,00	17,4209(*)	1,20223	,000	13,5127	21,3290
		5,00	43,2431(*)	1,20223	,000	39,3349	47,1513
		6,00	61,8541(*)	1,20223	,000	57,9460	65,7623
		7,00	64,6501(*)	1,20223	,000	60,7419	68,5583
	4,00	1,00	-36,2380(*)	1,20223	,000	-40,1461	-32,3298
		2,00	-20,8472(*)	1,20223	,000	-24,7554	-16,9390
		3,00	-17,4209(*)	1,20223	,000	-21,3290	-13,5127
		5,00	25,8223(*)	1,20223	,000	21,9141	29,7304
		6,00	44,4333(*)	1,20223	,000	40,5251	48,3415
		7,00	47,2292(*)	1,20223	,000	43,3211	51,1374
	5,00	1,00	-62,0602(*)	1,20223	,000	-65,9684	-58,1520
		2,00	-46,6695(*)	1,20223	,000	-50,5777	-42,7613
		3,00	-43,2431(*)	1,20223	,000	-47,1513	-39,3349
		4,00	-25,8223(*)	1,20223	,000	-29,7304	-21,9141
		6,00	18,6110(*)	1,20223	,000	14,7028	22,5192
		7,00	21,4070(*)	1,20223	,000	17,4988	25,3152
	6,00	1,00	-80,6712(*)	1,20223	,000	-84,5794	-76,7630
		2,00	-65,2805(*)	1,20223	,000	-69,1887	-61,3723
		3,00	-61,8541(*)	1,20223	,000	-65,7623	-57,9460
		4,00	-44,4333(*)	1,20223	,000	-48,3415	-40,5251
		5,00	-18,6110(*)	1,20223	,000	-22,5192	-14,7028
		7,00	2,7960	1,20223	,278	-1,1122	6,7042
	7,00	1,00	-83,4672(*)	1,20223	,000	-87,3754	-79,5590
		2,00	-68,0764(*)	1,20223	,000	-71,9846	-64,1683
		3,00	-64,6501(*)	1,20223	,000	-68,5583	-60,7419
		4,00	-47,2292(*)	1,20223	,000	-51,1374	-43,3211
		5,00	-21,4070(*)	1,20223	,000	-25,3152	-17,4988
		6,00	-2,7960	1,20223	,278	-6,7042	1,1122
VAR00004	1,00	2,00	16,1325(*)	,75641	,000	13,6736	18,5915
		3,00	27,2706(*)	,75641	,000	24,8117	29,7295
		4,00	53,3995(*)	,75641	,000	50,9406	55,8585
		5,00	76,7853(*)	,75641	,000	74,3264	79,2442

		6,00	85,0064(*)	,75641	,000	82,5475	87,4654
		7,00	85,7940(*)	,75641	,000	83,3351	88,2529
2,00		1,00	-16,1325(*)	,75641	,000	-18,5915	-13,6736
		3,00	11,1381(*)	,75641	,000	8,6791	13,5970
		4,00	37,2670(*)	,75641	,000	34,8081	39,7259
		5,00	60,6528(*)	,75641	,000	58,1938	63,1117
		6,00	68,8739(*)	,75641	,000	66,4149	71,3328
		7,00	69,6615(*)	,75641	,000	67,2025	72,1204
3,00		1,00	-27,2706(*)	,75641	,000	-29,7295	-24,8117
		2,00	-11,1381(*)	,75641	,000	-13,5970	-8,6791
		4,00	26,1289(*)	,75641	,000	23,6700	28,5879
		5,00	49,5147(*)	,75641	,000	47,0558	51,9736
		6,00	57,7358(*)	,75641	,000	55,2769	60,1948
		7,00	58,5234(*)	,75641	,000	56,0645	60,9824
4,00		1,00	-53,3995(*)	,75641	,000	-55,8585	-50,9406
		2,00	-37,2670(*)	,75641	,000	-39,7259	-34,8081
		3,00	-26,1289(*)	,75641	,000	-28,5879	-23,6700
		5,00	23,3858(*)	,75641	,000	20,9268	25,8447
		6,00	31,6069(*)	,75641	,000	29,1479	34,0658
		7,00	32,3945(*)	,75641	,000	29,9355	34,8534
5,00		1,00	-76,7853(*)	,75641	,000	-79,2442	-74,3264
		2,00	-60,6528(*)	,75641	,000	-63,1117	-58,1938
		3,00	-49,5147(*)	,75641	,000	-51,9736	-47,0558
		4,00	-23,3858(*)	,75641	,000	-25,8447	-20,9268
		6,00	8,2211(*)	,75641	,000	5,7622	10,6801
		7,00	9,0087(*)	,75641	,000	6,5498	11,4676
6,00		1,00	-85,0064(*)	,75641	,000	-87,4654	-82,5475
		2,00	-68,8739(*)	,75641	,000	-71,3328	-66,4149
		3,00	-57,7358(*)	,75641	,000	-60,1948	-55,2769
		4,00	-31,6069(*)	,75641	,000	-34,0658	-29,1479
		5,00	-8,2211(*)	,75641	,000	-10,6801	-5,7622
		7,00	,7876	,75641	,938	-1,6713	3,2465
7,00		1,00	-85,7940(*)	,75641	,000	-88,2529	-83,3351
		2,00	-69,6615(*)	,75641	,000	-72,1204	-67,2025
		3,00	-58,5234(*)	,75641	,000	-60,9824	-56,0645
		4,00	-32,3945(*)	,75641	,000	-34,8534	-29,9355
		5,00	-9,0087(*)	,75641	,000	-11,4676	-6,5498
		6,00	-,7876	,75641	,938	-3,2465	1,6713

* The mean difference is significant at the .05 level.