APPENDIX

Appendix A

Cell culture techniques

1. Preparation of medium (RPMI 1640, Dulbecco's Modified Eagle's Medium (DMEM) and Minimum Essential Medium (MEM)

Basic Medium

Media was prepared by dissolving medium (RPMI 1640 Medium, DMEM and MEM) powder (Sigma) and 2.0 g of sodium bicarbonate ($NaHCO_3$, Merck, Germany) in 1000 ml of distilled water. The pH of the medium was calibrated to pH 7.4 (Thermo Scientific). The media was then filter sterilized through a 0.2 µm filter membrane into sterile bottles and kept at 4 ºC for up to four months.

Complete growth medium

Complete growth medium was prepared by using 90 ml of basic medium, supplemented with 10% foetal bovine serum (FBS, PAA Lab, Austria), 100 µg/ml penicillin (PAA Lab, Austria) and 50 µg/ml of amphotericin B (PAA Lab, Austria). The medium was filter sterilized using a 0.22 µm filter membrane and kept at 4 ºC for up to two weeks.

20 % supplemented RPMI 1640 Medium, DMEM and MEM

50 ml of 20 % supplemented RPMI 1640 Medium, DMEM and MEM was prepared using 45 ml of 10 % supplemented media added with 5 ml FBS. The media was filter sterilized using 0.22 µm filter membrane and stores at 4 ºC up to 2 weeks. The media is used to revive cells.

Cryopreservation medium

Cryopreservation medium was prepared by 50 % foetal bovine serum (FBS, PAA Lab, Austria), 40 % basic culture medium and 10 % dimethylsulfoxide (DMSO) as cryoprotectant.

2. Preparations of solutions and reagents

0.4 % Tryphan Blue

04 % Tryphan Blue solution was prepared by dissolving 0.2 g tryphan blue in 50 ml distilled water.

MTT solution (5mg/ml)

50 mg of MTT (Sigma) powder was dissolved in 10 ml of PBS and was filter sterilized using 0.22 µm filter membrane. Fresh solutions were made prior to every assay run.

50 X TAE electrophoresis buffer pH ~ 8.5

242.0 g of Tris base, 57.1 ml of glacial acetic acid and 37.2 g of EDTA (Sigma-Aldrich, USA) were dissolved in 1000 ml of sterile distilled water. The pH of buffer was adjusted to approximately 8.5 using pH meter (Thermo Scientific). The solution was kept at room temperature.

1X TAE running buffer

20 ml of 50X TAE stock solutions was mix with 980 ml sterile distilled water. The solution was kept at room temperature.

1.5 % agarose

1.5 g of agarose was added to 100 ml of 1X TAE running buffer. The solution was heated in microwave until dissolved and kept at room temperature.

Ethidium Bromide staining solution

10 µl of Ethidium bromide stock (10 mg/ml) was added into 200 ml 1X TAE running buffer.

3. Procedure for cell revival

A cryovial containing the desired cell line was removed from the liquid nitrogen tank and placed in a beaker of ice. Then, it was rapidly thawed in a water bath at 37 ºC. The thawed cells were diluted into 1 ml of warm 20 % supplemented medium and then spun in a centrifuge (Kubota) at 1000 rpm for 5 minutes. The supernatant was discarded and the cell pellet was resuspended in 1 ml of 20 % supplemented medium before being transferred to a 25 ml tissue culture flask filled with 7 ml of warm 20 % supplemented medium. The tissue culture flask was then incubated in a 5 % CO_2 incubator at 37 ºC.

4. Procedure for maintenance of cells

Cells were routinely checked under inverted microscope for any contamination and the cells were given new media every 2 to 3 days based on color changes. The cells were maintained in 10 % supplemented medium and was incubated in a 5% CO_2 incubator kept at 37 ºC in a humidified atmosphere. After the cells have achieved more than 80 % confluence, they were subcultured.

5. Procedure for subcultivation of cells

10 % supplemented medium was warmed to 37 ºC in a water bath, while 1 ml aliquot of accutase (per flask to be subcultured) was thawed at room temperature. Adherent cells were attached and formed a single layer in the culture flask. The confluent cells were washed twice using 6 to 7 ml of phosphate buffer saline (PBS). This is to ensure that all the traces of FBS present in the previous culture medium were removed. Cells were then detached by incubating with 3 ml PBS and 1 ml of accutase at 37 ºC for 5-10 minutes. The detachment process was monitored by observation under an inverted microscope (Leica) and the base of the flask was tapped gently to help detach them from the plastic surface. Floating cells were then transferred into a centrifuge tube, which contained 1 ml of 10 % supplemented medium and spun at 1000 rpm for 5 minutes to obtain cell pellet. The supernatant was removed and 3 ml of 10 % supplemented medium was added to the pellet and resuspended by gently pipetting. 1 ml of cell suspension was added to the 3 new culture flask, each filled with 7 ml of 10 % supplemented medium and the flasks were further incubated at 37 ºC in a 5% CO_2 incubator.

6. Procedure for cryopreservation of cells

Cell stocks were preserved and stored in liquid nitrogen. Cell suspension were spun down at 1000 rpm for 5 minutes using a bench centrifuge (Clements 2000) after the medium was discarded. The supernatant was discarded and cell pellets were suspended in 3 ml of fresh freezing medium. 1 ml of cell suspension was then aliquoted into 3 new cryovials (Nalgene) and the cryovials were transferred into an imsulated box and left in vapor phase of the liquid nitrogen for slow cooling for at least 4 hours before plunging the vials into liquid nitrogen. Cells were cryopreserved so that a new stock could be revived in case the maintained cells become contaminated.

7. Cell enumeration by tryphan blue excursion

Cells grown to confluency were washed and detached as described in section 3.3.4. After centrifugation, the cell pellet was resuspended in a 1ml of 10 % supplemented culture medium to produce a stock cell suspension. 10 ul of stock cell suspension was then diluted with 90 µl 0.4 % tryphan blue and mixed well. About 20 µl of cell-tryphan blue suspension was carefully loaded onto a haemocytometer, allowing the cell suspension to be drawn into chamber by capillary action. The haemocytometer was then observed under light microscope using 10x objective. Unstained viable cells were counted in 5 interval regions of one chamber.

Appendix B: Absorbance value of the *A. scabra* extracts

Appendix B1: Absorbance value of leaf extracts of *A. scabra* for MCF7 cells

Treatment Duration (hour)	Extracts	Concentration (µg/ml)						
		Negative	100	75	50	25	10	1
24	Methanol	0.779	0.346	0.445	0.649	0.657	0.770	0.752
		0.769	0.386	0.376	0.621	0.697	0.766	0.721
		0.789	0.395	0.474	0.563	0.629	0.755	0.662
	Hexane	0.812	0.139	0.171	0.255	0.430	0.543	0.722
		0.737	0.152	0.212	0.238	0.449	0.556	0.722
		0.773	0.125	0.199	0.219	0.439	0.629	0.730
	Chloroform	0.741	0.155	0.222	0.355	0.531	0.707	0.734
		0.723	0.127	0.221	0.426	0.506	0.755	0.702
		0.747	0.133	0.207	0.371	0.557	0.704	0.736
	Water	0.774	0.697	0.751	0.697	0.700	0.748	0.769
		0.770	0.740	0.658	0.687	0.680	0.678	0.768
		0.773	0.736	0.745	0.750	0.689	0.680	0.766
48	Methanol	0.888	0.289	0.214	0.434	0.800	0.888	0.793
		0.859	0.249	0.224	0.449	0.852	0.817	0.756
		0.879	0.215	0.178	0.506	0.869	0.863	0.732
	Hexane	0.675	0.086	0.118	0.139	0.226	0.633	0.614
		0.726	0.070	0.104	0.098	0.247	0.650	0.609
		0.696	0.089	0.127	0.106	0.166	0.684	0.610
	Chloroform	0.775	0.114	0.188	0.152	0.363	0.771	0.745
		0.759	0.088	0.164	0.191	0.379	0.732	0.734
		0.774	0.074	0.161	0.210	0.404	0.689	0.765
	Water	0.905	0.808	0.842	0.856	0.825	0.882	0.750
		0.864	0.720	0.693	0.853	0.827	0.797	0.705
		0.874	0.754	0.778	0.864	0.747	0.805	0.740
72	Methanol	1.285	0.320	0.296	0.763	1.144	1.285	1.156
		1.402	0.308	0.369	0.799	1.051	1.143	1.232
		1.334	0.277	0.338	0.792	0.926	1.143	1.169
	Hexane	1.258	0.158	0.165	0.232	0.328	1.011	1.170
		1.295	0.150	0.150	0.220	0.327	0.927	1.242
		1.226	0.143	0.157	0.182	0.271	0.899	1.159
	Chloroform	1.224	0.155	0.237	0.311	0.620	0.982	1.152
		1.263	0.177	0.240	0.271	0.620	1.062	1.232
		1.262	0.155	0.254	0.269	0.628	0.993	1.140
	Water	1.400	1.250	1.240	1.398	1.235	1.156	1.198
		1.276	1.238	1.263	1.211	1.209	1.214	1.193
		1.382	1.331	1.209	1.269	1.235	1.269	1.167

Appendix B2: Absorbance value of rhizome extracts of *A. scabra* for MCF7 cells

Treatment Duration (hour)	Extracts	Concentration (µg/ml)						
		Negative	100	75	50	25	10	1
24	Methanol	0.664	0.585	0.580	0.591	0.643	0.549	0.560
		0.663	0.524	0.500	0.577	0.567	0.561	0.582
		0.665	0.505	0.523	0.574	0.656	0.526	0.566
	Hexane	0.625	0.181	0.339	0.418	0.511	0.435	0.490
		0.596	0.182	0.315	0.443	0.503	0.517	0.536
		0.612	0.189	0.336	0.419	0.484	0.486	0.550
	Chloroform	0.650	0.136	0.261	0.268	0.463	0.492	0.594
		0.636	0.109	0.268	0.253	0.471	0.545	0.581
		0.620	0.136	0.315	0.288	0.546	0.609	0.580
	Water	0.650	0.558	0.556	0.556	0.612	0.570	0.569
		0.670	0.560	0.604	0.577	0.521	0.547	0.563
		0.690	0.519	0.603	0.653	0.572	0.589	0.556
48	Methanol	0.695	0.693	0.667	0.660	0.638	0.693	0.655
		0.806	0.577	0.713	0.743	0.671	0.674	0.671
		0.760	0.670	0.622	0.684	0.627	0.694	0.662
	Hexane	0.800	0.130	0.247	0.548	0.704	0.755	0.727
		0.813	0.107	0.258	0.583	0.635	0.734	0.721
		0.772	0.119	0.261	0.597	0.709	0.735	0.708
	Chloroform	0.744	0.163	0.211	0.197	0.737	0.740	0.726
		0.791	0.197	0.209	0.189	0.706	0.750	0.741
		0.815	0.168	0.178	0.229	0.743	0.759	0.705
	Water	0.779	0.714	0.700	0.689	0.708	0.726	0.744
		0.739	0.727	0.719	0.628	0.725	0.702	0.649
		0.811	0.764	0.775	0.748	0.733	0.683	0.688
72	Methanol	1.372	1.161	1.173	1.226	1.180	1.334	1.383
		1.382	1.081	1.112	1.097	1.136	1.334	1.383
		1.426	1.115	1.177	1.137	1.160	1.399	1.406
	Hexane	1.387	0.105	0.175	0.939	1.142	1.373	1.381
		1.427	0.096	0.151	0.966	1.152	1.339	1.395
		1.437	0.105	0.175	0.917	1.214	1.434	1.401
	Chloroform	1.448	0.169	0.219	0.321	1.174	1.387	1.357
		1.443	0.149	0.170	0.280	1.218	1.422	1.388
		1.440	0.181	0.222	0.363	1.214	1.417	1.357
	Water	1.439	1.412	1.334	1.234	1.233	1.345	1.431
		1.524	1.396	1.307	1.195	1.163	1.416	1.453
		1.403	1.362	1.322	1.279	1.143	1.322	1.382

Appendix B3: Absorbance value of roots extracts of *A. scabra* for MCF7 cells

Treatment Duration (hour)	Extracts	Concentration (µg/ml)						
		Negative	100	75	50	25	10	1
24	Methanol	0.553	0.123	0.203	0.364	0.437	0.494	0.507
		0.514	0.130	0.247	0.398	0.436	0.503	0.488
		0.509	0.146	0.233	0.397	0.448	0.485	0.466
	Hexane	0.541	0.056	0.113	0.299	0.391	0.506	0.523
		0.472	0.072	0.155	0.262	0.415	0.459	0.469
		0.499	0.087	0.127	0.302	0.416	0.470	0.486
	Chloroform	0.544	0.107	0.222	0.384	0.420	0.585	0.489
		0.579	0.136	0.275	0.385	0.411	0.556	0.553
		0.547	0.131	0.229	0.314	0.391	0.506	0.517
	Water	0.548	0.573	0.569	0.493	0.462	0.547	0.541
		0.563	0.549	0.530	0.509	0.487	0.551	0.511
		0.566	0.604	0.577	0.538	0.559	0.560	0.575
48	Methanol	0.685	0.106	0.122	0.267	0.544	0.653	0.677
		0.674	0.099	0.097	0.350	0.539	0.643	0.627
		0.693	0.104	0.125	0.340	0.630	0.679	0.605
	Hexane	0.685	0.058	0.037	0.065	0.406	0.673	0.674
		0.665	0.069	0.046	0.152	0.442	0.661	0.622
		0.642	0.067	0.046	0.161	0.533	0.625	0.637
	Chloroform	0.692	0.086	0.108	0.139	0.520	0.672	0.651
		0.659	0.088	0.143	0.120	0.457	0.619	0.627
		0.695	0.126	0.105	0.263	0.541	0.706	0.621
	Water	0.638	0.638	0.722	0.670	0.656	0.668	0.698
		0.696	0.691	0.649	0.683	0.664	0.675	0.672
		0.579	0.563	0.570	0.536	0.540	0.529	0.507
72	Methanol	1.241	0.224	0.248	1.171	0.735	1.365	1.365
		1.278	0.209	0.219	1.146	0.751	1.227	1.267
		1.302	0.123	0.222	1.133	0.727	1.207	1.259
	Hexane	1.267	0.122	0.108	0.364	1.137	1.337	1.293
		1.243	0.126	0.151	0.301	1.086	1.318	1.322
		1.208	0.149	0.153	0.414	1.140	1.339	1.347
	Chloroform	1.279	0.212	0.262	0.511	1.213	1.422	1.315
		1.255	0.145	0.287	0.362	1.164	1.419	1.321
		1.278	0.164	0.250	0.456	1.261	1.436	1.326
	Water	1.243	1.233	1.237	1.184	1.230	1.168	1.292
		1.253	1.488	1.238	1.194	1.246	1.179	1.247
		1.277	1.255	1.243	1.261	1.216	1.256	1.256

Appendix B4: Absorbance value of pseudo stems extracts of *A. scabra* for MCF7 cells

Treatment Duration (hour)	Extracts	Concentration (µg/ml)						
		Negative	100	75	50	25	10	1
24	Methanol	0.517	0.395	0.420	0.523	0.511	0.505	0.513
		0.517	0.439	0.334	0.458	0.470	0.473	0.490
		0.548	0.411	0.408	0.479	0.546	0.561	0.503
	Hexane	0.513	0.283	0.283	0.330	0.422	0.481	0.490
		0.521	0.264	0.300	0.360	0.413	0.445	0.488
		0.566	0.283	0.324	0.370	0.434	0.439	0.485
	Chloroform	0.497	0.192	0.209	0.346	0.458	0.467	0.537
		0.413	0.183	0.330	0.296	0.434	0.500	0.539
		0.495	0.227	0.253	0.306	0.468	0.461	0.563
	Water	0.597	0.522	0.536	0.451	0.571	0.524	0.441
		0.558	0.510	0.510	0.473	0.485	0.510	0.514
		0.586	0.537	0.468	0.488	0.542	0.470	0.501
48	Methanol	0.865	0.740	0.758	0.749	0.744	0.821	0.744
		0.845	0.661	0.703	0.881	0.889	0.776	0.723
		0.828	0.659	0.715	0.710	0.775	0.785	0.692
	Hexane	0.686	0.183	0.448	0.617	0.710	0.751	0.648
		0.690	0.219	0.419	0.626	0.730	0.762	0.663
		0.729	0.172	0.448	0.632	0.711	0.724	0.709
	Chloroform	0.704	0.255	0.246	0.590	0.675	0.801	0.717
		0.790	0.223	0.329	0.594	0.725	0.766	0.709
		0.723	0.183	0.281	0.557	0.690	0.816	0.585
	Water	0.855	0.751	0.715	0.746	0.726	0.747	0.715
		0.811	0.749	0.708	0.697	0.743	0.779	0.694
		0.874	0.811	0.790	0.759	0.783	0.777	0.694
72	Methanol	1.474	1.291	1.456	1.445	1.455	1.393	1.363
		1.432	1.209	1.355	1.405	1.417	1.397	1.392
		1.420	1.227	1.294	1.407	1.516	1.391	1.354
	Hexane	1.409	0.213	0.581	1.178	1.363	1.375	1.447
		1.419	0.216	0.573	1.088	1.354	1.415	1.344
		1.477	0.213	0.594	0.976	1.333	1.452	1.465
	Chloroform	1.514	0.133	0.376	0.947	1.338	1.506	1.462
		1.403	0.147	0.359	0.928	1.337	1.429	1.400
		1.474	0.157	0.411	0.958	1.309	1.443	1.459
	Water	1.478	1.415	1.467	1.289	1.356	1.467	1.402
		1.534	1.384	1.471	1.456	1.408	1.426	1.428
		1.555	1.389	1.412	1.354	1.458	1.404	1.485

Appendix B5: Absorbance value of leaf extracts of *A. scabra* for SKOV-3 cells

Treatment Duration (hour)	Extracts	Concentration (µg/ml)						
		Negative	100	75	50	25	10	1
24	Methanol	0.511	0.063	0.160	0.237	0.293	0.482	0.416
		0.481	0.098	0.108	0.234	0.330	0.475	0.411
		0.460	0.137	0.162	0.269	0.332	0.463	0.419
	Hexane	0.549	0.040	0.054	0.070	0.114	0.208	0.437
		0.502	0.035	0.063	0.094	0.127	0.264	0.423
		0.484	0.066	0.042	0.072	0.105	0.201	0.437
	Chloroform	0.516	0.038	0.080	0.139	0.201	0.385	0.424
		0.473	0.056	0.067	0.068	0.192	0.350	0.472
		0.495	0.029	0.066	0.097	0.241	0.366	0.449
	Water	0.516	0.514	0.531	0.513	0.544	0.492	0.485
		0.588	0.576	0.571	0.530	0.539	0.492	0.482
		0.523	0.521	0.544	0.471	0.543	0.486	0.484
48	Methanol	0.962	0.122	0.171	0.317	0.791	0.948	0.943
		0.938	0.120	0.179	0.244	0.765	0.899	0.850
		0.891	0.100	0.187	0.246	0.611	0.803	0.831
	Hexane	0.860	0.050	0.037	0.084	0.157	0.305	0.852
		0.879	0.051	0.041	0.090	0.150	0.274	0.850
		0.879	0.056	0.049	0.077	0.131	0.256	0.864
	Chloroform	0.785	0.058	0.051	0.082	0.208	0.742	0.767
		0.867	0.059	0.037	0.081	0.167	0.679	0.844
		0.850	0.034	0.064	0.095	0.155	0.672	0.845
	Water	0.805	0.761	0.700	0.785	0.743	0.736	0.755
		0.823	0.719	0.760	0.797	0.732	0.762	0.736
		0.840	0.761	0.782	0.769	0.768	0.730	0.755
72	Methanol	1.317	0.115	0.092	0.250	0.936	1.470	1.293
		1.366	0.101	0.102	0.306	0.939	1.359	1.334
		1.317	0.120	0.116	0.281	0.950	1.397	1.303
	Hexane	1.336	0.040	0.031	0.047	0.164	0.298	1.326
		1.166	0.030	0.035	0.038	0.134	0.352	1.370
		1.299	0.061	0.028	0.045	0.118	0.305	1.298
	Chloroform	1.385	0.029	0.026	0.080	0.133	1.163	1.363
		1.468	0.048	0.027	0.046	0.150	1.022	1.456
		1.408	0.024	0.025	0.073	0.207	1.150	1.389
	Water	1.693	1.434	1.501	1.616	1.661	1.390	1.574
		1.672	1.512	1.606	1.589	1.434	1.584	1.622
		1.625	1.483	1.131	1.717	1.638	1.426	1.567

Appendix B6: Absorbance value of rhizome extracts of *A. scabra* for SKOV-3 cells

Treatment Duration (hour)	Extracts	Concentration (µg/ml)						
		Negative	100	75	50	25	10	1
24	Methanol	1.251	1.108	1.082	1.089	1.023	0.925	1.062
		1.269	1.023	0.934	0.991	0.880	0.854	0.901
		1.122	1.026	0.996	0.867	1.045	0.897	0.901
	Hexane	1.250	0.337	0.401	0.449	1.048	0.893	0.843
		1.163	0.394	0.412	0.573	1.075	0.890	0.887
		1.126	0.334	0.408	0.677	1.118	0.886	0.962
	Chloroform	1.197	0.412	0.531	0.614	0.793	0.925	0.940
		1.078	0.425	0.405	0.611	0.843	0.938	0.873
		1.157	0.454	0.421	0.538	0.646	1.027	0.901
	Water	1.160	1.112	1.126	1.030	1.023	1.023	1.128
		1.276	1.118	1.165	1.191	1.028	1.106	1.243
		1.232	1.139	1.183	1.209	1.120	1.325	1.146
48	Methanol	1.106	0.906	0.885	0.937	0.965	0.945	0.891
		1.103	0.989	0.876	0.911	0.873	0.817	0.843
		1.105	0.954	0.957	0.826	0.996	0.951	0.956
	Hexane	1.013	0.059	0.178	0.140	0.852	0.939	0.863
		1.027	0.104	0.249	0.335	0.891	0.899	0.928
		1.465	0.071	0.216	0.448	0.899	0.988	1.092
	Chloroform	1.043	0.100	0.128	0.349	0.755	0.942	1.031
		1.086	0.055	0.204	0.170	0.698	1.043	1.031
		1.143	0.075	0.247	0.339	0.603	1.101	1.101
	Water	1.119	1.139	1.086	1.007	1.024	1.062	1.098
		1.237	1.171	1.146	1.013	1.145	1.143	1.138
		1.198	1.154	1.032	1.152	0.962	1.051	1.153
72	Methanol	1.034	1.021	0.995	1.023	0.775	0.923	0.947
		1.085	1.037	0.863	0.722	0.875	0.808	0.714
		0.957	1.151	0.793	0.753	0.837	0.883	0.859
	Hexane	0.945	0.010	0.059	0.100	0.565	0.801	0.832
		1.029	0.005	0.037	0.147	0.531	0.851	0.985
		1.164	0.003	0.104	0.183	0.494	0.830	1.005
	Chloroform	1.143	0.002	0.034	0.111	0.655	0.699	1.024
		1.039	0.001	0.045	0.067	0.489	0.746	0.847
		1.076	0.004	0.013	0.059	0.493	0.735	1.024
	Water	1.016	0.890	0.848	0.877	1.043	0.989	1.019
		1.005	0.801	0.796	0.955	0.810	0.883	0.984
		0.929	0.876	0.876	0.811	0.887	0.837	1.058

Appendix B7: Absorbance value of root extracts of *A. scabra* for SKOV-3 cells

Treatment Duration (hour)	Extracts	Concentration (µg/ml)						
		Negative	100	75	50	25	10	1
24	Methanol	1.082	0.375	0.322	0.621	1.037	0.997	0.896
		1.014	0.382	0.349	0.595	1.013	0.940	0.931
		1.112	0.332	0.374	0.532	1.033	1.050	1.031
	Hexane	1.058	0.115	0.173	0.307	0.699	1.051	0.921
		0.993	0.140	0.191	0.195	0.649	1.136	0.987
		1.063	0.134	0.208	0.238	0.732	1.058	0.995
	Chloroform	1.126	0.288	0.408	0.444	0.911	1.117	0.999
		1.038	0.313	0.441	0.532	0.855	1.273	0.923
		1.172	0.340	0.419	0.499	0.805	1.171	0.905
	Water	1.252	1.262	1.233	1.037	0.984	1.163	1.031
		1.168	1.255	1.114	1.078	0.998	1.075	1.113
		1.413	1.253	1.229	1.063	1.108	1.274	1.346
48	Methanol	0.734	0.027	0.016	0.084	0.035	0.697	0.615
		0.661	0.030	0.024	0.071	0.069	0.532	0.544
		0.659	0.034	0.037	0.068	0.076	0.578	0.589
	Hexane	0.519	0.010	0.021	0.027	0.063	0.507	0.387
		0.510	0.014	0.025	0.030	0.071	0.406	0.593
		0.546	0.010	0.025	0.026	0.070	0.511	0.537
	Chloroform	0.631	0.016	0.047	0.063	0.063	0.602	0.539
		0.576	0.018	0.048	0.059	0.071	0.531	0.509
		0.568	0.011	0.044	0.070	0.068	0.524	0.531
	Water	0.673	0.648	0.696	0.610	0.587	0.624	0.532
		0.680	0.642	0.665	0.612	0.606	0.666	0.672
		0.648	0.623	0.568	0.595	0.614	0.586	0.548
72	Methanol	1.122	0.002	0.027	0.090	0.955	0.972	1.185
		0.986	0.010	0.045	0.123	0.907	0.980	0.972
		1.160	0.012	0.056	0.125	0.675	0.959	0.990
	Hexane	0.886	0.002	0.009	0.034	0.182	0.829	0.878
		0.923	0.001	0.009	0.051	0.291	0.883	0.831
		1.130	0.001	0.007	0.044	0.410	0.939	0.800
	Chloroform	1.080	0.021	0.055	0.100	0.569	1.038	0.931
		1.029	0.019	0.054	0.079	0.440	0.952	1.020
		0.971	0.011	0.049	0.084	0.341	0.886	0.866
	Water	1.195	0.959	0.928	1.000	1.126	1.030	1.143
		1.056	0.981	0.958	1.034	1.072	0.977	1.085
		1.131	1.138	0.953	1.095	1.118	0.988	1.061

Appendix B8: Absorbance value of pseudo stem extracts of *A. scabra* for SKOV-3 cells

Treatment Duration (hour)	Extracts	Concentration (µg/ml)						
		Negative	100	75	50	25	10	1
24	Methanol	0.330	0.240	0.315	0.315	0.299	0.305	0.340
		0.315	0.230	0.303	0.303	0.295	0.297	0.308
		0.334	0.222	0.256	0.256	0.287	0.298	0.331
	Hexane	0.325	0.041	0.041	0.088	0.236	0.308	0.300
		0.364	0.041	0.051	0.101	0.245	0.305	0.340
		0.392	0.052	0.044	0.085	0.280	0.344	0.360
	Chloroform	0.396	0.063	0.092	0.164	0.255	0.366	0.376
		0.327	0.065	0.089	0.174	0.236	0.330	0.344
		0.390	0.071	0.103	0.190	0.250	0.353	0.357
	Water	0.447	0.328	0.363	0.405	0.356	0.362	0.392
		0.441	0.358	0.347	0.396	0.363	0.323	0.382
		0.466	0.395	0.362	0.378	0.404	0.360	0.365
48	Methanol	0.509	0.253	0.410	0.502	0.505	0.506	0.448
		0.514	0.235	0.357	0.456	0.512	0.473	0.471
		0.506	0.241	0.389	0.461	0.504	0.505	0.452
	Hexane	0.511	0.018	0.060	0.080	0.356	0.498	0.499
		0.539	0.016	0.050	0.078	0.371	0.503	0.460
		0.468	0.013	0.049	0.077	0.381	0.496	0.431
	Chloroform	0.541	0.029	0.037	0.085	0.275	0.598	0.466
		0.590	0.031	0.046	0.081	0.321	0.485	0.457
		0.556	0.027	0.047	0.086	0.340	0.544	0.445
	Water	0.649	0.621	0.631	0.574	0.636	0.570	0.567
		0.673	0.676	0.631	0.533	0.554	0.553	0.530
		0.601	0.544	0.522	0.478	0.565	0.453	0.508
72	Methanol	0.857	0.480	0.656	0.848	0.704	0.847	0.829
		0.872	0.502	0.639	0.865	0.796	0.781	0.792
		0.834	0.424	0.687	0.842	0.777	0.820	0.748
	Hexane	0.773	0.037	0.036	0.059	0.612	0.699	0.735
		0.789	0.034	0.030	0.052	0.629	0.670	0.783
		0.749	0.032	0.029	0.028	0.588	0.670	0.656
	Chloroform	0.799	0.041	0.054	0.058	0.599	0.742	0.736
		0.703	0.032	0.049	0.036	0.542	0.693	0.587
		0.779	0.036	0.062	0.039	0.518	0.713	0.705
	Water	0.890	0.751	0.862	0.762	0.760	0.831	0.858
		0.889	0.707	0.865	0.759	0.769	0.672	0.814
		0.871	0.729	0.865	0.705	0.869	0.931	0.821

Appendix B9: Absorbance value of leaf extracts of *A. scabra* for MRC-5 cells

Treatment Duration (hour)	Extracts	Concentration (µg/ml)						
		Negative	100	75	50	25	10	1
24	Methanol	0.471	0.373	0.416	0.459	0.469	0.449	0.419
		0.462	0.436	0.399	0.426	0.405	0.433	0.440
		0.464	0.376	0.425	0.429	0.448	0.429	0.420
	Hexane	0.466	0.044	0.063	0.053	0.288	0.410	0.414
		0.434	0.034	0.045	0.052	0.299	0.406	0.407
		0.420	0.041	0.034	0.040	0.271	0.403	0.362
	Chloroform	0.418	0.047	0.043	0.226	0.375	0.388	0.376
		0.428	0.047	0.071	0.197	0.335	0.380	0.342
		0.428	0.046	0.037	0.225	0.333	0.382	0.360
	Water	0.457	0.411	0.404	0.426	0.380	0.389	0.386
		0.468	0.436	0.416	0.451	0.416	0.416	0.392
		0.469	0.446	0.431	0.476	0.399	0.439	0.404
48	Methanol	0.366	0.024	0.042	0.259	0.321	0.317	0.348
		0.372	0.020	0.057	0.258	0.317	0.341	0.328
		0.332	0.018	0.103	0.228	0.276	0.303	0.322
	Hexane	0.498	0.050	0.028	0.041	0.031	0.352	0.351
		0.365	0.048	0.041	0.043	0.029	0.296	0.356
		0.369	0.046	0.063	0.058	0.031	0.293	0.348
	Chloroform	0.329	0.072	0.060	0.064	0.223	0.328	0.304
		0.328	0.066	0.072	0.027	0.197	0.320	0.306
		0.317	0.082	0.069	0.031	0.190	0.280	0.310
	Water	0.374	0.241	0.237	0.277	0.284	0.312	0.330
		0.301	0.197	0.186	0.194	0.282	0.279	0.271
		0.274	0.227	0.224	0.223	0.238	0.273	0.270
72	Methanol	0.564	0.077	0.117	0.478	0.548	0.516	0.585
		0.565	0.061	0.131	0.474	0.464	0.537	0.503
		0.566	0.090	0.138	0.457	0.509	0.541	0.519
	Hexane	0.543	0.026	0.040	0.033	0.036	0.489	0.540
		0.536	0.029	0.036	0.040	0.038	0.488	0.533
		0.540	0.033	0.027	0.040	0.053	0.478	0.524
	Chloroform	0.534	0.044	0.047	0.041	0.424	0.503	0.534
		0.561	0.034	0.036	0.039	0.455	0.506	0.557
		0.527	0.038	0.050	0.043	0.446	0.497	0.524
	Water	0.586	0.468	0.512	0.522	0.533	0.584	0.566
		0.654	0.485	0.523	0.602	0.594	0.578	0.595
		0.642	0.491	0.544	0.635	0.546	0.641	0.605

Appendix B10: Absorbance value of rhizome extracts of *A. scabra* for MRC-5 cells

Treatment Duration (hour)	Extracts	Concentration (µg/ml)						
		Negative	100	75	50	25	10	1
24	Methanol	0.440	0.332	0.363	0.340	0.343	0.407	0.370
		0.383	0.291	0.302	0.367	0.379	0.335	0.365
		0.358	0.296	0.325	0.337	0.341	0.314	0.356
	Hexane	0.406	0.149	0.152	0.352	0.404	0.381	0.358
		0.356	0.134	0.156	0.271	0.353	0.344	0.346
		0.365	0.076	0.131	0.347	0.360	0.320	0.341
	Chloroform	0.364	0.131	0.175	0.316	0.360	0.329	0.357
		0.386	0.136	0.195	0.327	0.348	0.286	0.386
		0.374	0.090	0.128	0.325	0.369	0.334	0.324
	Water	0.398	0.309	0.327	0.341	0.376	0.330	0.332
		0.354	0.281	0.317	0.320	0.328	0.339	0.296
		0.407	0.311	0.278	0.328	0.359	0.348	0.305
48	Methanol	0.561	0.427	0.448	0.446	0.451	0.456	0.456
		0.615	0.420	0.433	0.473	0.418	0.439	0.454
		0.503	0.398	0.424	0.431	0.398	0.441	0.440
	Hexane	0.453	0.021	0.027	0.146	0.439	0.443	0.443
		0.480	0.023	0.023	0.111	0.437	0.463	0.435
		0.482	0.031	0.018	0.116	0.454	0.470	0.430
	Chloroform	0.572	0.048	0.043	0.079	0.494	0.469	0.420
		0.556	0.041	0.052	0.069	0.490	0.440	0.409
		0.549	0.039	0.053	0.087	0.497	0.436	0.413
	Water	0.483	0.443	0.446	0.463	0.466	0.476	0.453
		0.499	0.445	0.427	0.447	0.452	0.435	0.460
		0.528	0.510	0.435	0.456	0.463	0.491	0.466
72	Methanol	0.429	0.393	0.405	0.389	0.392	0.399	0.388
		0.433	0.353	0.401	0.379	0.387	0.367	0.416
		0.448	0.335	0.437	0.338	0.390	0.378	0.387
	Hexane	0.506	0.015	0.015	0.279	0.499	0.396	0.506
		0.481	0.019	0.027	0.291	0.481	0.395	0.409
		0.428	0.020	0.021	0.332	0.425	0.404	0.424
	Chloroform	0.422	0.039	0.017	0.149	0.407	0.399	0.404
		0.454	0.032	0.010	0.147	0.397	0.448	0.449
		0.431	0.030	0.013	0.134	0.398	0.422	0.429
	Water	0.483	0.445	0.448	0.465	0.468	0.478	0.455
		0.487	0.447	0.429	0.449	0.454	0.473	0.462
		0.488	0.448	0.437	0.458	0.465	0.493	0.468

Appendix B11: Absorbance value of root extracts of *A. scabra* for MRC-5 cells

Treatment Duration (hour)	Extracts	Concentration (µg/ml)						
		Negative	100	75	50	25	10	1
24	Methanol	0.526	0.032	0.023	0.376	0.440	0.376	0.385
		0.541	0.041	0.040	0.330	0.431	0.346	0.369
		0.505	0.019	0.025	0.303	0.360	0.333	0.389
	Hexane	0.464	0.019	0.021	0.017	0.353	0.363	0.453
		0.483	0.024	0.028	0.017	0.378	0.362	0.445
		0.461	0.033	0.054	0.017	0.351	0.356	0.418
	Chloroform	0.424	0.034	0.029	0.009	0.321	0.303	0.362
		0.449	0.031	0.024	0.025	0.324	0.310	0.374
		0.407	0.014	0.025	0.017	0.314	0.307	0.362
	Water	0.480	0.444	0.450	0.460	0.468	0.470	0.455
		0.475	0.447	0.445	0.458	0.464	0.473	0.450
		0.478	0.449	0.447	0.456	0.465	0.476	0.458
48	Methanol	0.408	0.053	0.082	0.032	0.403	0.359	0.286
		0.326	0.027	0.053	0.034	0.325	0.324	0.314
		0.294	0.093	0.074	0.033	0.272	0.288	0.267
	Hexane	0.330	0.080	0.081	0.068	0.188	0.267	0.286
		0.344	0.081	0.099	0.071	0.197	0.250	0.269
		0.335	0.081	0.100	0.095	0.199	0.258	0.240
	Chloroform	0.299	0.095	0.099	0.092	0.282	0.289	0.286
		0.308	0.089	0.079	0.073	0.255	0.298	0.313
		0.278	0.098	0.053	0.065	0.249	0.246	0.257
	Water	0.410	0.404	0.410	0.405	0.408	0.400	0.405
		0.415	0.407	0.405	0.408	0.404	0.403	0.410
		0.420	0.409	0.407	0.406	0.405	0.406	0.418
72	Methanol	0.405	0.035	0.023	0.037	0.382	0.415	0.386
		0.426	0.052	0.031	0.026	0.414	0.414	0.378
		0.386	0.051	0.046	0.030	0.353	0.383	0.369
	Hexane	0.379	0.025	0.025	0.041	0.329	0.377	0.374
		0.393	0.030	0.022	0.037	0.201	0.359	0.370
		0.432	0.025	0.013	0.021	0.197	0.389	0.351
	Chloroform	0.319	0.051	0.033	0.030	0.286	0.275	0.328
		0.345	0.046	0.035	0.017	0.289	0.315	0.324
		0.417	0.033	0.047	0.024	0.283	0.398	0.386
	Water	0.310	0.304	0.310	0.305	0.308	0.300	0.305
		0.315	0.307	0.305	0.308	0.304	0.303	0.310
		0.320	0.309	0.307	0.306	0.305	0.306	0.318

Appendix B12: Absorbance value of pseudo stem extracts of *A. scabra* for MRC-5 cells

Treatment Duration (hour)	Extracts	Concentration (µg/ml)						
		Negative	100	75	50	25	10	1
24	Methanol	0.549	0.549	0.503	0.507	0.453	0.417	0.451
		0.565	0.564	0.527	0.482	0.412	0.481	0.442
		0.659	0.611	0.545	0.528	0.501	0.504	0.496
	Hexane	0.554	0.305	0.475	0.513	0.328	0.409	0.280
		0.499	0.283	0.358	0.489	0.333	0.322	0.336
		0.460	0.333	0.369	0.430	0.412	0.368	0.396
	Chloroform	0.500	0.489	0.413	0.391	0.260	0.275	0.374
		0.472	0.417	0.367	0.370	0.242	0.298	0.347
		0.446	0.409	0.346	0.317	0.261	0.232	0.346
	Water	0.440	0.414	0.41	0.415	0.418	0.42	0.415
		0.445	0.417	0.415	0.418	0.414	0.413	0.425
		0.450	0.419	0.417	0.416	0.415	0.416	0.42
48	Methanol	0.499	0.373	0.452	0.461	0.473	0.406	0.394
		0.524	0.408	0.435	0.415	0.388	0.343	0.367
		0.425	0.320	0.398	0.341	0.322	0.274	0.243
	Hexane	0.344	0.023	0.152	0.289	0.306	0.323	0.294
		0.346	0.015	0.100	0.242	0.332	0.230	0.238
		0.356	0.012	0.130	0.245	0.278	0.236	0.229
	Chloroform	0.373	0.135	0.083	0.196	0.285	0.366	0.235
		0.350	0.144	0.116	0.172	0.249	0.346	0.291
		0.324	0.122	0.103	0.168	0.247	0.280	0.285
	Water	0.445	0.424	0.42	0.425	0.438	0.42	0.435
		0.450	0.42	0.425	0.428	0.434	0.433	0.435
		0.440	0.419	0.427	0.426	0.435	0.426	0.43
72	Methanol	0.489	0.473	0.486	0.447	0.480	0.421	0.395
		0.477	0.406	0.474	0.428	0.463	0.412	0.425
		0.454	0.397	0.444	0.447	0.419	0.431	0.419
	Hexane	0.437	0.032	0.098	0.230	0.377	0.429	0.386
		0.434	0.029	0.085	0.227	0.398	0.421	0.398
		0.414	0.031	0.062	0.194	0.376	0.413	0.394
	Chloroform	0.478	0.129	0.129	0.195	0.454	0.472	0.383
		0.472	0.115	0.109	0.146	0.453	0.483	0.392
		0.452	0.134	0.117	0.126	0.436	0.444	0.390
	Water	0.440	0.314	0.31	0.315	0.318	0.318	0.315
		0.445	0.317	0.315	0.318	0.314	0.313	0.31
		0.450	0.319	0.317	0.316	0.315	0.316	0.32

Appendix C: Percentage of inhibition (%) of the *A. scabra* extracts

Appendix C1: Percentage of inhibition (%) of leaf extracts of *A. scabra* for MCF7 cells

Treatment duration (hour)	Extracts	Concentration (µg/ml)	Percentage of growth inhibition (%)				
			Test 1	Test 2	Test 3	Average	Standard deviation
24	Methanol	100	55.60	49.80	49.90	51.8	3.32
		75	42.90	51.10	39.90	44.6	5.80
		50	16.70	19.20	28.60	21.5	6.27
		25	15.70	9.40	20.30	15.1	5.47
		10	1.20	0.40	4.30	2.0	2.06
		1	3.50	6.20	16.10	8.6	6.63
	Hexane	100	82.9	79.4	83.8	82.0	2.32
		75	78.9	71.2	74.3	74.8	3.87
		50	68.6	67.7	71.1	69.1	1.76
		25	47.0	39.1	43.2	43.1	3.95
		10	33.1	24.6	18.6	25.4	7.29
		1	11.1	2.0	5.6	6.2	4.58
	Chloroform	100	79.1	82.4	82.2	81.2	1.85
		75	70.0	69.4	72.3	70.6	1.53
		50	52.1	41.1	50.3	47.8	5.90
		25	28.3	30.0	25.4	27.9	2.33
		10	4.6	0.0	5.8	3.5	3.06
		1	0.9	2.9	1.5	1.8	1.03
	Water	100	9.9	3.9	4.8	6.2	3.24
		75	3.0	14.5	3.6	7.0	6.47
		50	9.9	10.8	12.0	10.9	1.05
		25	9.6	11.7	10.9	10.7	1.06
		10	3.4	11.9	12.0	9.1	4.94
		1	0.6	0.3	0.9	0.6	0.30
48	Methanol	100	67.5	71.0	75.5	71.3	4.01
		75	75.9	73.9	79.7	76.5	2.95
		50	51.1	47.7	42.4	47.1	4.38
		25	9.9	0.8	1.1	3.9	5.17
		10	0.0	4.9	1.8	2.2	2.48
		1	10.7	12.0	16.7	13.1	3.16
	Hexane	100	87.3	90.4	87.2	88.3	1.82
		75	82.5	85.7	81.8	83.3	2.08
		50	79.4	86.5	84.8	83.6	3.71
		25	66.5	66.0	76.1	69.5	5.69
		10	6.2	10.5	7.7	8.1	2.18
		1	9.0	16.1	12.4	12.5	3.55
	Chloroform	100	85.3	88.4	90.4	88.0	2.57
		75	75.7	78.4	79.2	77.8	1.83
		50	80.4	74.8	72.9	76.0	3.90
		25	53.2	50.1	47.8	50.4	2.71
		10	0.5	3.6	11.0	5.0	5.39
		1	3.9	3.3	1.2	2.8	1.42

Appendix C1 continued.

	Water	**100**	10.7	16.7	13.7	13.7	3.00
		75	7.0	19.8	11.0	12.6	6.55
		50	5.4	1.3	1.1	2.6	2.43
		25	8.8	4.3	14.5	14.5	5.11
		10	2.5	7.8	7.9	6.1	3.09
		1	17.1	18.4	15.3	16.9	1.56
72	**Methanol**	**100**	75.10	78.0	79.20	77.4	2.11
		75	77.0	73.70	74.7	75.1	1.69
		50	40.6	43.0	40.60	41.4	1.39
		25	11.0	25.0	30.60	22.2	10.10
		10	0.0	18.5	14.30	10.9	9.70
		1	10.00	12.1	12.4	11.5	1.31
	Hexane	**100**	87.4	88.4	88.3	88.0	0.55
		75	86.9	88.4	87.2	87.5	0.79
		50	81.60	83.0	85.2	83.3	1.81
		25	11.0	25.0	30.6	22.2	10.10
		10	19.60	28.40	26.70	24.90	4.67
		1	7.0	4.1	5.5	5.5	1.45
	Chloroform	**100**	87.3	86.0	87.7	87.0	0.89
		75	80.6	81.0	79.9	80.5	0.56
		50	74.6	78.5	78.7	77.3	2.31
		25	49.3	50.9	50.2	50.1	0.80
		10	19.8	15.9	21.3	19.0	2.79
		1	5.9	2.5	9.7	6.0	3.60
	Water	**100**	10.7	3.0	3.7	5.8	4.26
		75	11.4	1.0	12.5	8.3	6.35
		50	0.1	5.1	8.2	4.5	4.09
		25	11.8	5.3	10.6	9.2	3.46
		10	17.4	4.9	8.2	10.2	6.48
		1	14.4	6.5	15.60	12.2	4.94

Appendix C2: Percentage of inhibition (%) of rhizome extracts of *A. scabra* for MCF7 cells

Treatment duration (hour)	Extracts	Concentration (µg/ml)	Percentage of growth inhibition (%)				
			Test 1	Test 2	Test 3	Average	Standard deviation
24	Methanol	100	11.9	21.0	24.1	19.0	6.34
		75	12.7	24.6	21.4	19.6	6.16
		50	11.0	13.0	13.7	12.6	1.40
		25	3.2	14.5	1.4	6.4	7.10
		10	17.3	15.4	20.9	17.9	2.79
		1	15.7	12.2	14.9	14.3	1.83
	Hexane	100	71.0	69.5	69.1	69.9	1.00
		75	45.8	47.1	45.1	46.0	1.01
		50	33.1	25.7	31.5	30.1	3.89
		25	18.2	15.6	20.9	18.2	2.65
		10	30.4	13.3	20.6	21.4	8.58
		1	21.6	10.1	10.1	13.9	6.64
	Chloroform	100	79.1	82.9	78.1	80.0	2.53
		75	59.8	57.9	49.2	55.6	5.65
		50	58.8	60.2	53.5	57.5	3.53
		25	28.8	25.9	11.9	22.2	9.04
		10	24.3	14.3	1.8	13.5	11.27
		1	8.6	8.6	6.5	7.9	1.21
	Water	100	14.2	16.4	24.8	18.5	5.59
		75	14.5	9.9	12.6	12.3	2.31
		50	14.5	13.9	5.4	11.3	5.09
		25	5.8	22.2	17.1	15.0	8.39
		10	12.3	18.4	14.6	15.1	3.08
		1	12.5	16.0	19.4	16.0	3.45
48	Methanol	100	0.3	28.4	11.8	13.5	14.13
		75	4.0	11.5	18.2	11.2	7.10
		50	5.0	7.8	10.0	7.6	2.51
		25	8.2	16.7	17.5	14.1	5.15
		10	0.3	16.4	8.7	8.5	8.05
		1	5.8	16.7	12.9	11.8	5.53
	Hexane	100	83.8	86.8	84.6	85.1	1.55
		75	69.1	68.3	66.2	67.9	1.50
		50	31.5	28.3	22.7	27.5	4.45
		25	12.0	21.9	8.2	14.0	7.07
		10	5.6	9.7	4.8	6.7	2.63
		1	9.1	11.3	8.3	9.6	1.55
	Chloroform	100	78.1	75.1	79.4	77.5	2.21
		75	71.6	73.6	78.2	74.5	3.38
		50	73.5	76.1	71.9	73.8	2.12
		25	0.9	10.7	8.8	6.8	5.20
		10	0.5	5.2	6.9	4.2	3.32
		1	2.4	6.3	13.5	7.4	5.63

Appendix C2 continued.

	Water	**100**	8.3	1.6	5.8	5.2	3.39
		75	10.1	2.7	4.4	5.7	3.88
		50	11.6	15.0	7.8	11.5	3.60
		25	9.1	9.1	9.6	9.3	0.29
		10	6.8	5.0	15.8	9.2	5.79
		1	4.5	12.2	15.2	10.6	5.52
72	**Methanol**	**100**	15.4	21.8	21.8	19.7	3.70
		75	14.5	19.5	17.5	17.2	2.52
		50	10.6	20.6	20.3	17.2	5.69
		25	14.0	17.8	18.7	16.8	2.49
		10	2.8	3.5	1.9	2.7	0.80
		1	0.0	0.0	1.4	0.5	0.81
	Hexane	**100**	92.4	93.3	92.7	92.8	0.46
		75	87.4	89.4	87.8	88.2	1.06
		50	32.3	32.3	36.2	33.6	2.25
		25	17.7	19.3	15.5	17.5	1.91
		10	1.0	6.2	0.2	2.5	3.26
		1	0.4	2.2	2.5	1.7	1.14
	Chloroform	**100**	88.3	89.7	87.4	88.5	1.16
		75	84.9	88.2	84.6	85.9	2.00
		50	77.8	80.6	74.8	77.7	2.90
		25	18.9	15.6	15.7	16.7	1.88
		10	4.2	1.5	1.6	2.4	1.53
		1	6.3	3.8	5.8	5.3	1.32
	Water	**100**	1.9	8.4	2.9	4.4	3.50
		75	7.3	14.2	5.8	9.1	4.48
		50	14.2	21.6	8.8	14.9	6.43
		25	14.3	23.7	18.5	18.8	4.71
		10	6.5	7.1	5.8	6.5	0.65
		1	0.6	4.7	1.5	2.3	2.15

Appendix C3: Percentage of inhibition (%) of roots extracts of *A. scabra* for MCF7 cells

Treatment duration (hour)	Extracts	Concentration (µg/ml)	Percentage of growth inhibition (%)				
			Test 1	Test 2	Test 3	Average	Standard deviation
24	Methanol	100	77.8	74.7	71.3	74.6	3.25
		75	63.3	51.9	54.2	56.5	6.03
		50	34.2	22.6	22.0	26.3	6.88
		25	21.0	15.2	12.0	16.1	4.56
		10	10.7	2.1	4.7	5.8	4.41
		1	8.3	5.1	8.4	7.3	1.88
	Hexane	100	89.6	84.7	82.6	85.6	3.59
		75	79.1	67.2	74.5	73.6	6.00
		50	44.7	44.5	39.5	42.9	2.95
		25	27.7	12.1	16.6	18.8	8.03
		10	6.5	2.8	5.8	5.0	1.97
		1	3.3	0.6	2.6	2.2	1.40
	Chloroform	100	80.3	76.5	76.1	77.6	2.32
		75	59.2	52.5	58.1	56.6	3.59
		50	29.4	33.5	42.6	35.2	6.76
		25	22.8	29.0	28.5	26.8	3.44
		10	0.0	4.0	7.5	3.8	3.75
		1	10.1	4.5	5.5	6.7	2.99
	Water	100	0.0	2.5	0.0	0.8	1.44
		75	0.0	5.9	0.0	2.0	3.41
		50	10.0	9.6	4.9	8.2	2.84
		25	15.7	13.5	1.2	10.1	7.81
		10	0.2	2.1	1.1	1.1	0.95
		1	1.3	9.2	0.0	3.5	4.98
48	Methanol	100	84.5	85.3	85.0	84.9	0.40
		75	82.2	85.6	82.0	83.3	2.02
		50	61.0	48.1	50.9	53.3	6.79
		25	20.6	20.0	9.1	16.6	6.47
		10	4.7	4.6	2.0	3.8	1.53
		1	1.2	7.0	12.7	7.0	5.75
	Hexane	100	91.5	89.6	89.6	90.2	1.10
		75	94.6	93.1	92.8	93.5	0.96
		50	90.5	77.1	74.9	80.8	8.44
		25	40.7	33.5	17.0	30.4	12.15
		10	1.8	0.6	2.6	1.7	1.01
		1	1.6	6.5	0.8	3.0	3.09
	Chloroform	100	87.6	86.6	81.9	85.4	3.04
		75	84.4	78.3	84.9	82.5	3.67
		50	79.9	81.8	62.2	74.6	10.81
		25	24.9	30.7	22.2	25.9	4.34
		10	2.9	6.1	1.6	3.5	2.32
		1	5.9	4.9	10.6	7.1	3.04

Appendix C3 continued.

	Water	**100**	0.0	0.7	2.8	1.2	1.46
		75	13.2	6.8	1.6	7.2	5.81
		50	5.0	1.9	7.4	4.8	2.76
		25	2.8	4.6	6.7	4.7	1.95
		10	4.7	3.0	8.6	5.4	2.87
		1	9.4	3.4	12.4	8.4	4.58
72	**Methanol**	**100**	82.0	83.6	90.6	85.4	4.57
		75	80.0	82.9	82.9	81.9	1.67
		50	5.6	10.3	13.0	9.6	3.74
		25	40.8	41.2	44.2	42.1	1.86
		10	10.0	4.0	7.3	7.1	3.00
		1	10.0	0.9	3.3	4.7	4.72
	Hexane	**100**	90.4	89.9	87.7	89.3	1.44
		75	91.5	87.9	87.3	88.9	2.27
		50	71.3	75.8	65.7	70.9	5.06
		25	10.3	12.6	5.6	9.5	3.57
		10	5.5	6.0	10.8	7.4	2.93
		1	2.1	6.4	0.0	2.8	3.26
	Chloroform	**100**	83.4	88.4	87.2	86.3	2.61
		75	79.5	77.1	80.4	79.0	1.71
		50	60.0	71.2	64.3	65.2	5.65
		25	5.2	7.3	1.3	4.6	3.04
		10	11.2	13.1	12.4	12.2	0.96
		1	2.8	5.3	3.8	4.0	1.26
	Water	**100**	0.8	18.8	1.7	7.1	10.14
		75	0.5	1.2	2.7	1.5	1.12
		50	4.7	4.7	1.3	3.6	1.96
		25	1.0	0.6	4.8	2.1	2.32
		10	6.0	5.9	1.6	4.5	2.51
		1	0.0	0.5	1.6	0.7	0.82

Appendix C4: Percentage of inhibition (%) of pseudo stems extracts of *A. scabra* for MCF7 cells

Treatment duration (hour)	Extracts	Concentration (µg/ml)	Percentage of growth inhibition (%)				
			Test 1	Test 2	Test 3	Average	Standard deviation
24	Methanol	100	23.6	15.1	25.0	21.2	5.36
		75	18.8	35.4	25.5	26.6	8.35
		50	0.0	11.4	12.6	8.0	6.95
		25	1.2	9.1	0.4	3.6	4.81
		10	2.3	8.5	2.4	4.4	3.55
		1	0.8	5.2	8.2	4.7	3.72
	Hexane	100	44.8	49.3	50.0	48.0	2.82
		75	44.8	42.4	42.8	43.3	1.29
		50	35.7	30.9	34.6	33.7	2.51
		25	17.7	20.7	23.3	20.6	2.80
		10	6.2	14.6	22.4	14.4	8.10
		1	4.5	6.3	14.3	8.4	5.22
	Chloroform	100	61.4	55.7	54.1	57.1	3.84
		75	57.9	20.1	48.9	42.3	19.75
		50	30.4	28.3	38.2	32.3	5.22
		25	7.8	0.0	5.5	4.4	4.01
		10	6.0	0.0	6.9	4.3	3.75
		1	8.0	20.5	13.7	14.1	6.26
	Water	100	12.6	8.6	8.4	9.9	2.37
		75	10.2	8.6	20.1	13.0	6.23
		50	24.5	15.2	16.7	18.8	4.99
		25	4.4	13.1	7.5	8.3	4.41
		10	12.2	8.6	19.8	13.5	5.72
		1	26.1	7.9	14.5	16.2	9.21
48	Methanol	100	14.5	21.8	20.4	18.9	3.87
		75	12.4	16.8	13.6	14.3	2.27
		50	13.4	0.0	14.3	9.2	8.01
		25	14.0	0.0	6.4	7.5	7.01
		10	5.1	8.2	5.2	6.2	1.76
		1	14.0	14.4	16.4	14.9	1.29
	Hexane	100	73.3	68.3	76.4	72.7	4.09
		75	34.7	39.3	38.5	37.5	2.46
		50	10.1	9.3	13.3	10.9	2.12
		25	3.5	5.8	2.5	7.5	1.69
		10	0.0	0.0	0.7	0.2	0.40
		1	5.5	3.9	2.7	4.0	1.40
	Chloroform	100	63.8	71.8	74.7	70.1	5.65
		75	65.1	58.4	61.1	61.5	3.37
		50	16.2	24.8	23.0	21.3	4.54
		25	4.1	8.2	4.6	7.5	2.24
		10	0.0	3.0	0.7	1.2	1.57
		1	0.0	10.3	19.1	9.8	9.56

Appendix C4 continued.

	Water	**100**	12.2	7.6	7.2	9.0	2.78
		75	16.4	12.7	9.6	12.9	3.40
		50	12.7	14.1	13.2	13.3	0.71
		25	15.1	8.4	10.4	7.5	3.44
		10	12.6	3.9	11.1	9.2	4.65
		1	16.4	14.4	20.6	17.1	3.16
72	**Methanol**	**100**	12.4	15.6	13.6	13.9	1.62
		75	1.2	5.4	8.9	5.2	3.86
		50	2.0	1.9	0.9	1.6	0.61
		25	1.3	1.0	0.0	7.5	0.68
		10	5.5	2.4	2.0	3.3	1.92
		1	7.5	2.8	4.6	5.0	2.37
	Hexane	**100**	84.9	84.8	85.6	85.1	0.44
		75	58.8	59.6	59.8	59.4	0.53
		50	16.4	23.3	33.9	24.5	8.81
		25	3.3	4.6	9.7	7.5	3.38
		10	2.4	0.3	1.7	1.5	1.07
		1	0.0	5.3	0.8	2.0	2.86
	Chloroform	**100**	91.2	89.5	89.3	90.0	1.04
		75	75.2	74.4	72.1	73.9	1.61
		50	37.5	33.9	35.0	35.5	1.84
		25	11.6	4.7	11.2	7.5	3.87
		10	0.5	0.0	2.1	0.9	1.10
		1	3.4	0.2	1.0	1.5	1.67
	Water	**100**	4.3	9.8	10.7	8.3	3.46
		75	0.7	4.1	9.2	4.7	4.28
		50	12.8	5.1	12.9	10.3	4.47
		25	8.3	8.2	6.2	7.5	1.18
		10	0.7	7.0	9.7	5.8	4.62
		1	5.1	6.9	4.5	5.5	1.25

Appendix C5: Percentage of inhibition (%) of leaf extracts of *A. scabra* for SKOV-3 cells

Treatment duration (hour)	Extracts	Concentration (µg/ml)	Percentage of growth inhibition (%)				
			Test 1	Test 2	Test 3	Average	Standard deviation
24	Methanol	100	87.7	79.6	70.2	79.2	8.76
		75	68.7	77.5	64.8	70.3	6.51
		50	53.6	51.4	41.5	48.8	6.45
		25	42.7	31.4	27.8	34.0	7.77
		10	5.7	1.2	0.0	2.3	3.00
		1	18.6	14.6	8.9	14.0	4.87
	Hexane	100	92.7	93.0	86.4	90.7	3.73
		75	90.2	87.5	91.3	89.7	1.96
		50	87.2	81.3	85.1	84.5	2.99
		25	79.2	74.7	78.3	77.4	2.38
		10	62.1	47.4	58.5	56.0	7.66
		1	20.4	15.7	9.7	15.3	5.36
	Chloroform	100	92.6	88.2	94.1	91.6	3.07
		75	84.5	85.8	86.7	85.7	1.11
		50	73.1	85.6	80.4	79.7	6.28
		25	61.0	59.4	51.3	57.2	5.20
		10	25.4	26.0	26.1	25.8	0.38
		1	17.8	0.2	9.3	9.1	8.80
	Water	100	0.4	2.0	0.4	0.9	0.92
		75	0.0	2.9	0.0	1.0	1.67
		50	0.6	9.9	9.9	6.8	5.37
		25	0.0	8.3	0.0	2.8	4.79
		10	4.7	16.3	7.1	9.4	6.12
		1	6.0	18.0	7.5	10.5	6.54
48	Methanol	100	87.3	87.2	88.8	87.8	0.9
		75	82.2	80.9	79.0	80.7	1.61
		50	67.0	74.0	72.4	71.1	3.67
		25	17.8	18.4	31.4	22.5	7.68
		10	1.5	4.2	9.9	5.2	4.29
		1	2.0	9.4	6.7	6.0	3.74
	Hexane	100	94.2	94.2	93.6	94.0	0.35
		75	95.7	95.3	94.4	95.1	0.67
		50	90.2	89.8	91.2	90.4	0.72
		25	81.7	82.9	85.1	83.2	1.72
		10	64.5	68.8	70.9	68.1	3.26
		1	0.9	3.3	1.7	2.0	1.22
	Chloroform	100	92.6	93.2	96.0	93.9	1.81
		75	93.5	95.7	92.5	93.9	1.64
		50	89.6	90.7	88.8	89.7	0.95
		25	73.5	80.7	81.8	78.7	4.51
		10	5.5	21.7	20.9	16.0	9.13
		1	2.3	2.7	0.6	1.9	1.12

Appendix C5 continued.

	Water	**100**	5.5	12.6	9.4	9.2	3.56
		75	13.0	7.7	6.9	9.2	3.32
		50	2.5	3.2	8.5	4.7	3.28
		25	7.7	11.1	8.6	9.1	1.76
		10	8.6	7.4	13.1	9.7	3.00
		1	6.2	10.6	10.1	10.4	0.35
72	**Methanol**	**100**	91.3	92.6	90.9	91.6	0.89
		75	93.0	92.5	91.2	92.2	0.93
		50	81.0	77.6	78.7	79.1	1.73
		25	28.9	31.3	27.9	29.4	1.75
		10	0.0	0.5	0.0	0.2	0.29
		1	1.8	2.3	1.1	1.7	0.60
	Hexane	**100**	97.0	97.4	95.3	96.6	1.12
		75	97.7	97.0	97.8	97.5	0.44
		50	96.5	96.7	96.5	96.6	0.12
		25	87.7	88.5	90.9	89.0	1.67
		10	77.7	69.8	76.5	74.7	4.26
		1	0.7	0.0	0.1	0.3	0.38
	Chloroform	**100**	97.9	96.7	98.3	97.6	0.83
		75	98.1	98.2	98.2	98.2	0.06
		50	94.2	96.9	94.8	95.3	1.42
		25	90.4	89.8	85.3	88.5	2.79
		10	16.0	30.4	18.3	21.6	7.74
		1	1.6	0.8	1.3	1.2	0.40
	Water	**100**	15.3	9.6	8.7	11.2	3.58
		75	11.3	3.9	30.4	15.2	13.67
		50	4.5	5.0	0	3.2	2.75
		25	1.9	14.2	0	5.4	7.71
		10	17.9	5.3	12.2	11.8	6.31
		1	7.0	3.0	3.6	4.5	2.16

Appendix C6: Percentage of inhibition (%) of rhizome extracts of *A. scabra* for SKOV-3 cells

Treatment duration (hour)	Extracts	Concentration (µg/ml)	Percentage of growth inhibition (%)				
			Test 1	Test 2	Test 3	Average	Standard deviation
24	Methanol	100	11.4	19.4	8.6	13.1	5.60
		75	13.5	26.4	11.2	17.0	8.19
		50	12.9	21.9	22.7	19.2	5.44
		25	18.2	30.7	6.9	18.6	11.91
		10	26.1	32.7	20.1	26.3	6.30
		1	15.1	29.0	19.7	21.3	7.08
	Hexane	100	73.0	66.1	70.3	69.8	3.48
		75	67.9	64.6	63.8	65.4	2.17
		50	64.1	50.7	39.9	51.6	12.12
		25	16.2	7.6	0.7	8.2	7.77
		10	28.6	23.5	21.3	24.5	3.74
		1	32.6	23.7	14.6	23.6	9.00
	Chloroform	100	65.6	60.6	60.8	62.3	2.83
		75	55.6	62.4	63.6	60.5	4.31
		50	48.7	43.3	53.5	48.5	5.10
		25	33.8	21.8	44.2	33.3	11.21
		10	22.7	13.0	11.2	15.6	6.19
		1	21.5	19.0	22.1	20.9	1.64
	Water	100	4.1	12.4	7.5	8.0	4.17
		75	2.9	8.7	4.0	5.2	3.08
		50	11.2	6.7	1.9	6.6	4.65
		25	11.8	19.4	9.1	13.4	5.34
		10	11.8	13.3	0	8.4	7.28
		1	2.8	2.6	7.0	4.1	2.48
48	Methanol	100	18.1	10.3	13.7	14.0	3.91
		75	20.0	20.6	13.4	18.0	3.99
		50	15.3	17.4	25.2	19.3	5.22
		25	12.7	20.9	9.9	14.5	5.72
		10	14.6	25.9	13.9	18.1	6.74
		1	19.4	23.6	13.5	18.8	5.07
	Hexane	100	94.2	89.9	95.2	93.1	2.32
		75	82.4	75.8	85.3	81.2	4.87
		50	86.2	67.4	69.4	74.3	10.33
		25	15.9	13.2	38.6	22.6	13.95
		10	7.3	12.5	32.6	17.5	13.36
		1	14.8	9.6	25.5	16.6	8.11
	Chloroform	100	90.4	94.9	93.4	92.9	2.29
		75	87.7	81.2	78.4	82.4	4.77
		50	66.5	84.3	70.3	73.7	9.37
		25	27.6	35.7	47.2	36.8	9.85
		10	9.7	4.0	3.7	5.8	3.38
		1	1.2	5.1	3.7	3.3	1.98

Appendix C6 continued.

	Water	**100**	0.0	5.3	3.7	3.0	2.72
		75	2.9	7.4	13.9	8.1	5.53
		50	10.0	18.1	3.8	10.6	7.17
		25	8.5	7.4	19.7	11.9	6.81
		10	5.1	7.6	12.3	8.3	3.66
		1	1.9	8.0	3.8	4.6	3.12
72	**Methanol**	**100**	1.3	4.4	0.0	1.9	2.26
		75	3.8	20.5	17.1	13.8	8.83
		50	1.1	33.5	21.3	18.6	16.36
		25	25.0	19.4	12.5	19.0	6.26
		10	10.7	25.5	7.7	14.6	9.53
		1	8.4	34.2	10.2	17.6	14.40
	Hexane	**100**	98.9	99.5	99.7	99.4	0.42
		75	93.8	96.4	91.1	93.8	2.65
		50	89.4	85.7	84.3	86.5	2.64
		25	40.2	48.4	57.6	48.7	8.70
		10	15.2	17.3	28.7	20.4	7.26
		1	12.0	4.3	13.7	10.0	5.01
	Chloroform	**100**	99.8	99.9	99.6	99.8	0.15
		75	97.0	95.7	98.8	97.2	1.56
		50	90.3	93.6	94.5	92.8	2.21
		25	42.7	52.9	54.2	49.9	6.30
		10	38.8	28.2	31.7	32.9	5.40
		1	10.4	18.5	4.8	11.2	6.89
	Water	**100**	12.4	20.3	5.7	12.8	7.31
		75	16.5	20.8	5.7	14.3	7.78
		50	13.7	5.0	12.7	10.5	4.76
		25	0	19.4	4.5	8.0	10.15
		10	2.7	12.1	9.9	8.2	4.92
		1	0.0	2.1	0.0	0.7	1.21

Appendix C7: Percentage of inhibition (%) of root extracts of *A. scabra* for SKOV-3 cells

Treatment duration (hour)	Extracts	Concentration (µg/ml)	Percentage of growth inhibition (%)				
			Test 1	Test 2	Test 3	Average	Standard deviation
24	Methanol	100	65.3	62.3	70.1	65.9	3.93
		75	70.2	65.6	66.4	67.4	2.46
		50	42.6	41.3	52.2	45.4	5.95
		25	4.2	0.1	7.1	3.8	3.52
		10	7.9	7.3	5.6	6.9	1.19
		1	17.2	8.2	7.3	10.9	5.47
	Hexane	100	89.1	85.9	87.4	87.5	1.60
		75	83.6	80.8	80.4	81.6	1.74
		50	71.0	80.4	77.6	76.3	4.83
		25	33.9	34.6	31.1	33.2	1.85
		10	0.7	0.0	0.5	0.4	0.36
		1	12.9	0.6	6.4	6.6	6.15
	Chloroform	100	74.4	69.8	71.0	71.7	2.39
		75	63.8	57.5	64.2	61.8	3.76
		50	60.6	48.7	57.4	55.6	6.16
		25	19.1	17.6	31.3	22.7	7.51
		10	0.8	0.0	0.1	0.3	0.44
		1	11.3	11.1	22.8	15.1	6.70
	Water	100	0.0	0.0	11.3	3.8	6.52
		75	1.5	4.6	13.0	6.4	5.95
		50	17.2	7.7	24.8	16.6	8.57
		25	21.4	14.6	21.6	19.2	3.98
		10	7.1	8.0	9.8	8.3	1.37
		1	17.7	4.7	4.7	9.0	7.51
48	Methanol	100	96.3	95.5	94.8	95.5	0.75
		75	97.8	96.4	94.4	96.2	1.71
		50	88.6	89.3	89.7	89.2	0.56
		25	95.2	89.6	88.5	91.1	3.59
		10	5.0	19.5	12.3	12.3	7.25
		1	16.2	17.7	10.6	14.8	3.74
	Hexane	100	98.1	97.3	98.2	97.9	0.49
		75	96.0	95.1	95.4	95.5	0.46
		50	94.8	94.1	95.2	94.7	0.56
		25	87.9	86.1	87.2	87.1	0.91
		10	2.3	20.4	6.4	9.7	9.49
		1	5.4	0.0	1.6	2.33	3.00
	Chloroform	100	97.5	96.9	98.1	97.5	0.6
		75	92.6	91.7	92.3	92.2	0.46
		50	90.0	89.8	87.7	89.2	1.27
		25	90.0	87.7	88.0	88.6	1.25
		10	4.6	7.8	7.7	6.7	1.82
		1	14.6	11.6	6.5	10.9	4.10

Appendix C7 continued.

	Water	**100**	3.7	5.6	3.9	4.4	1.04
		75	0.0	2.2	12.3	4.8	6.56
		50	9.4	10.0	8.2	9.2	0.92
		25	12.8	10.9	5.2	9.6	3.96
		10	7.3	2.1	9.6	6.3	3.84
		1	21.0	1.2	15.4	12.5	10.21
72	**Methanol**	**100**	99.8	99.0	99.0	99.3	0.46
		75	97.6	95.4	95.2	96.1	1.33
		50	92.0	87.5	89.2	89.6	2.27
		25	14.9	8.0	41.8	21.6	17.86
		10	13.4	0.6	17.3	10.4	8.74
		1	0.0	1.4	14.7	5.4	8.11
	Hexane	**100**	99.8	99.9	99.9	99.9	0.06
		75	99.0	99.0	99.4	99.1	0.23
		50	96.2	94.5	96.1	95.6	0.95
		25	79.5	68.5	63.7	70.6	8.10
		10	6.4	4.3	16.9	9.2	6.75
		1	0.9	10.0	29.2	13.4	14.45
	Chloroform	**100**	98.1	98.2	98.9	98.4	0.44
		75	94.9	94.8	95.0	94.9	0.10
		50	90.7	92.3	91.3	91.4	0.81
		25	47.3	57.2	64.9	56.5	8.82
		10	3.9	7.5	8.8	6.7	2.54
		1	13.8	0.9	10.8	8.5	6.75
	Water	**100**	19.7	7.1	0.0	8.9	9.98
		75	22.3	9.3	15.7	15.8	6.50
		50	16.3	2.1	3.2	7.2	7.90
		25	5.8	0.0	1.1	2.3	3.08
		10	13.8	7.5	12.6	11.3	3.35
		1	4.4	0.0	6.2	3.5	3.19

Appendix C8: Percentage of inhibition (%) of pseudo stem extracts of *A. scabra* for SKOV-3 cells

Treatment duration (hour)	Extracts	Concentration (µg/ml)	Percentage of growth inhibition (%)				
			Test 1	Test 2	Test 3	Average	Standard deviation
24	Methanol	100	27.3	27.0	33.5	29.3	3.67
		75	4.5	3.8	3.4	3.9	0.56
		50	4.5	3.8	3.4	3.9	0.56
		25	9.4	6.3	14.1	9.9	3.93
		10	7.6	5.7	10.8	8.0	2.58
		1	0.0	2.2	0.9	1.0	1.11
	Hexane	100	87.4	88.7	86.7	87.6	1.01
		75	87.4	86.0	88.8	87.4	1.40
		50	72.9	72.3	78.3	74.5	3.30
		25	27.4	32.7	28.6	29.6	2.78
		10	5.2	16.2	12.2	11.2	5.57
		1	7.7	6.6	8.2	7.5	0.82
	Chloroform	100	84.1	80.1	81.8	82.0	2.01
		75	76.8	72.8	73.6	74.4	2.12
		50	58.6	46.8	51.3	52.2	5.96
		25	35.6	27.8	35.9	33.1	4.59
		10	7.6	0.0	9.5	5.7	5.03
		1	5.1	0.0	8.5	4.5	4.28
	Water	100	26.6	18.8	15.2	20.2	5.83
		75	18.8	21.3	22.3	20.8	1.80
		50	9.4	10.2	18.9	12.8	5.27
		25	20.4	17.7	13.3	17.1	3.58
		10	19.0	26.8	22.7	22.8	3.90
		1	12.3	13.4	21.7	15.8	5.14
48	Methanol	100	50.3	54.3	53.4	52.7	2.10
		75	19.4	30.5	23.1	24.3	5.65
		50	1.4	11.3	8.9	7.2	5.16
		25	0.8	0.4	0.4	0.5	0.23
		10	0.6	8.0	0.2	2.9	4.39
		1	12.0	8.4	10.7	10.4	1.82
	Hexane	100	96.5	97.0	97.2	96.9	0.36
		75	88.3	90.7	89.5	89.5	1.20
		50	84.3	85.5	83.5	84.4	1.01
		25	30.3	31.2	18.6	26.7	7.03
		10	2.5	6.7	0.0	3.1	3.39
		1	2.3	14.7	7.9	8.3	6.21
	Chloroform	100	94.6	94.7	95.1	94.8	0.26
		75	93.2	92.2	91.5	92.3	0.85
		50	84.3	86.3	84.5	85.0	1.10
		25	49.2	45.6	38.8	44.5	5.28
		10	0.0	17.8	2.2	6.7	9.70
		1	13.9	22.5	20.0	18.8	4.42

Appendix C8 continued.

	Water	**100**	4.3	0.0	9.5	4.6	4.76
		75	2.8	6.2	13.1	7.4	5.25
		50	11.6	20.8	20.5	17.6	5.23
		25	2.0	17.7	6.0	8.6	8.16
		10	12.2	17.8	24.6	18.2	6.21
		1	12.6	21.2	15.5	16.4	4.38
72	**Methanol**	**100**	44.0	42.4	24.5	37.0	10.83
		75	23.5	26.7	17.6	22.6	4.62
		50	1.1	0.8	0.0	0.6	0.57
		25	17.9	8.7	6.8	11.1	5.94
		10	1.2	10.4	1.7	4.4	5.17
		1	3.3	9.2	10.3	7.6	3.76
	Hexane	**100**	95.2	95.7	95.7	95.5	0.29
		75	95.3	96.2	96.1	95.9	0.49
		50	92.4	93.4	96.3	94.0	2.03
		25	20.8	20.3	21.5	20.9	0.60
		10	9.6	15.1	10.5	11.7	2.95
		1	4.9	0.8	12.4	6.0	5.88
	Chloroform	**100**	94.9	95.4	95.4	95.2	0.29
		75	93.2	93.0	92.0	92.7	0.64
		50	92.7	94.9	95.0	94.2	1.30
		25	25.0	22.9	33.5	27.1	5.61
		10	7.1	1.4	8.5	5.7	3.76
		1	7.9	16.5	9.5	11.3	4.57
	Water	**100**	15.6	20.5	16.3	17.5	2.65
		75	3.1	2.7	0.7	2.2	1.29
		50	14.4	14.6	19.1	16.0	2.66
		25	14.6	13.5	0.2	9.4	8.02
		10	6.6	24.4	0.0	10.3	12.62
		1	3.6	8.4	5.7	5.9	2.41

Appendix C9: Percentage of inhibition (%) of leaf extracts of *A. scabra* for MRC-5 cells

Treatment duration (hour)	Extracts	Concentration (µg/ml)	Percentage of growth inhibition (%)				
			Test 1	Test 2	Test 3	Average	Standard deviation
24	Methanol	100	20.8	5.6	19.0	15.1	8.31
		75	11.7	13.6	8.4	11.2	2.63
		50	2.5	7.8	7.5	5.9	2.98
		25	0.4	12.3	3.4	5.4	6.19
		10	4.7	6.3	7.5	6.2	1.40
		1	11.0	4.8	9.5	8.4	3.23
	Hexane	100	90.6	92.2	90.2	91.0	1.06
		75	86.5	89.6	91.9	89.3	2.71
		50	88.6	88.0	90.5	89.0	1.31
		25	38.2	31.1	35.5	34.9	3.58
		10	12.0	6.5	4.0	7.5	4.09
		1	11.2	6.2	13.8	10.4	3.86
	Chloroform	100	88.8	89.0	89.3	89.0	0.25
		75	89.7	83.4	91.4	88.2	4.21
		50	45.9	54.0	47.4	49.1	4.31
		25	10.3	21.7	22.2	18.1	6.73
		10	7.2	11.2	10.7	9.7	2.18
		1	10.0	20.1	15.9	15.3	5.07
	Water	100	10.1	6.8	4.9	7.3	2.63
		75	11.6	11.1	8.1	10.3	1.89
		50	6.8	3.6	0.0	3.5	3.40
		25	16.8	11.1	14.9	14.3	2.90
		10	14.9	11.1	6.4	10.8	4.26
		1	15.5	16.2	13.9	15.2	1.18
48	Methanol	100	93.4	94.6	94.6	94.2	0.69
		75	88.5	84.7	69.0	80.7	10.34
		50	29.2	30.6	31.3	30.4	1.07
		25	12.3	14.8	16.9	14.7	2.30
		10	13.4	8.3	8.7	10.1	2.84
		1	4.9	11.8	3.0	6.6	4.63
	Hexane	100	90.0	86.8	87.5	88.1	1.68
		75	94.4	88.8	82.9	88.7	5.75
		50	91.8	88.2	84.3	88.1	3.75
		25	93.8	92.1	91.6	92.5	1.15
		10	29.3	18.9	20.6	22.9	5.58
		1	29.5	2.5	5.7	12.6	14.75
	Chloroform	100	78.1	79.9	74.1	77.4	2.97
		75	81.8	78.0	78.2	79.3	2.14
		50	80.5	91.8	90.2	87.5	6.11
		25	32.2	39.9	40.1	37.4	4.50
		10	0.3	2.4	11.7	4.8	6.07
		1	7.6	6.7	2.2	5.5	2.89

Appendix C9 continued.

	Water	**100**	35.6	34.6	17.2	29.1	10.35
		75	36.6	38.2	18.2	31.0	11.11
		50	25.9	35.5	18.6	26.7	8.48
		25	24.1	6.3	13.1	14.5	8.98
		10	16.6	7.3	0.4	8.1	8.13
		1	11.8	10.0	1.5	7.8	5.50
72	**Methanol**	**100**	86.3	89.2	84.1	86.5	2.56
		75	79.3	76.8	75.6	77.2	1.89
		50	15.2	16.1	19.3	16.9	2.15
		25	2.8	17.9	10.1	10.3	7.55
		10	8.5	5.0	4.4	6.0	2.21
		1	0.0	11.0	8.3	6.4	5.73
	Hexane	**100**	95.2	94.6	93.9	94.6	0.65
		75	92.6	93.3	95.0	93.6	1.23
		50	93.9	92.5	92.6	93.0	0.78
		25	93.4	92.9	90.2	92.2	1.72
		10	9.9	9.0	11.5	10.1	1.27
		1	0.6	0.6	3.0	1.4	1.39
	Chloroform	**100**	91.8	93.9	92.8	92.8	1.05
		75	91.2	93.6	90.5	91.8	1.63
		50	92.3	93.0	91.8	92.4	0.60
		25	20.6	18.9	15.4	18.3	2.65
		10	5.8	9.8	5.7	7.1	2.34
		1	0.0	0.7	0.6	0.4	0.38
	Water	**100**	20.1	25.8	23.5	23.1	2.87
		75	12.6	20.0	15.3	16.0	3.74
		50	10.9	8.0	1.1	6.7	5.03
		25	9.0	9.2	15.0	11.1	3.41
		10	0.3	11.6	0.2	4.0	6.55
		1	3.4	9.0	5.8	6.1	2.81

Appendix C10: Percentage of inhibition (%) of rhizome extracts of *A. scabra* for MRC-5 cells

Treatment duration (hour)	Extracts	Concentration (µg/ml)	Percentage of growth inhibition (%)				
			Test 1	Test 2	Test 3	Average	Standard deviation
24	Methanol	100	24.5	24.0	17.3	21.9	4.02
		75	17.5	21.1	9.2	15.9	6.10
		50	22.7	4.2	5.9	10.9	10.23
		25	22.0	1.0	4.7	9.2	11.21
		10	7.5	12.5	12.3	10.8	2.83
		1	15.9	4.7	0.6	7.1	7.92
	Hexane	100	63.3	62.4	79.2	68.3	9.45
		75	62.6	56.2	64.1	61.0	4.20
		50	13.3	23.9	4.9	14.0	9.52
		25	0.5	0.8	1.4	0.9	0.46
		10	6.2	3.4	12.3	7.3	4.55
		1	11.8	2.8	6.6	7.1	4.52
	Chloroform	100	64.0	64.8	75.9	68.2	6.65
		75	51.9	49.5	65.8	55.7	8.80
		50	13.2	15.3	13.1	13.9	1.24
		25	1.1	9.8	1.3	4.1	4.97
		10	9.6	25.9	10.7	15.4	9.11
		1	1.9	0.0	13.4	5.1	7.25
	Water	100	22.4	20.6	23.6	22.2	1.51
		75	17.8	10.5	31.7	20.0	10.77
		50	14.3	9.6	19.4	14.4	4.90
		25	5.5	7.3	11.8	8.2	3.24
		10	17.1	4.2	14.5	11.9	6.82
		1	16.6	16.4	25.1	19.4	4.97
48	Methanol	100	23.9	31.7	20.9	25.5	5.57
		75	20.1	29.6	15.7	21.8	7.10
		50	20.5	23.1	14.3	19.3	4.52
		25	19.6	32.0	20.9	24.2	6.81
		10	18.7	28.6	12.3	19.9	8.21
		1	18.7	26.2	12.5	19.1	6.86
	Hexane	100	95.4	95.2	93.6	94.7	0.99
		75	94.0	95.2	96.3	95.2	1.15
		50	67.8	76.9	75.9	73.5	4.99
		25	3.1	9.0	5.8	6.0	2.95
		10	2.2	3.5	2.5	2.7	0.68
		1	2.2	9.4	10.8	7.5	4.61
	Chloroform	100	91.6	92.6	92.9	92.4	0.68
		75	92.5	90.6	90.3	91.1	1.19
		50	86.2	87.6	84.2	86.0	1.71
		25	13.6	11.9	9.5	11.7	2.06
		10	18.0	20.9	20.6	19.8	1.59
		1	26.6	26.4	24.8	25.9	0.99

Appendix C10 continued.

	Water	**100**	8.3	10.8	3.4	7.5	3.76
		75	7.7	14.4	17.6	13.2	5.05
		50	4.1	10.4	13.6	9.4	4.83
		25	3.5	9.4	12.3	8.4	4.48
		10	1.4	12.8	7.0	7.1	5.70
		1	6.2	7.8	11.7	8.6	2.83
72	**Methanol**	**100**	8.4	18.5	25.2	17.4	8.46
		75	5.6	7.4	2.5	5.2	2.48
		50	9.3	12.5	24.6	15.5	8.07
		25	8.6	10.6	12.9	10.7	2.15
		10	7.0	15.2	15.6	12.6	4.85
		1	9.6	3.9	13.6	9.0	4.87
	Hexane	**100**	97.0	96.0	95.3	96.1	0.85
		75	97.0	94.4	95.1	95.5	1.35
		50	44.9	39.5	22.4	35.6	11.75
		25	1.4	0.0	0.7	0.7	0.70
		10	21.7	17.9	5.6	15.1	8.42
		1	0.0	15.0	0.9	5.3	8.41
	Chloroform	**100**	90.8	93.0	93.0	92.3	1.27
		75	96.0	97.8	97.0	96.9	0.90
		50	64.7	67.6	68.9	67.1	2.15
		25	3.6	12.6	7.7	8.0	4.51
		10	5.5	1.3	2.1	3.0	2.23
		1	4.3	1.1	0.5	2.0	2.04
	Water	**100**	7.9	8.2	8.2	8.1	0.17
		75	7.2	11.9	10.5	9.9	2.41
		50	3.7	7.8	6.1	5.9	2.06
		25	3.1	6.8	4.7	4.9	1.86
		10	1.0	2.9	0.0	1.3	1.47
		1	5.8	5.1	4.1	5.0	0.85

Appendix C11: Percentage of inhibition (%) of root extracts of *A. scabra* for MRC-5 cells

Treatment duration (hour)	Extracts	Concentration (µg/ml)	Percentage of growth inhibition (%)				
			Test 1	Test 2	Test 3	Average	Standard deviation
24	Methanol	100	93.9	92.4	96.2	94.2	1.91
		75	95.6	92.6	95.0	94.4	1.59
		50	28.5	39.0	40.0	35.8	6.37
		25	16.3	20.3	28.7	21.8	6.33
		10	28.5	36.0	34.1	32.9	3.90
		1	26.8	31.8	23.0	27.2	4.41
	Hexane	100	95.9	95.0	92.8	94.6	1.59
		75	95.5	94.2	88.8	92.7	3.84
		50	96.3	96.5	96.3	96.4	0.12
		25	23.9	21.7	23.9	23.2	1.27
		10	21.8	25.1	22.8	23.2	1.69
		1	2.4	7.9	9.3	6.5	3.65
	Chloroform	100	92.0	93.1	96.6	93.9	2.40
		75	93.2	94.7	93.9	93.9	0.75
		50	97.9	94.4	95.8	96.0	1.76
		25	24.3	27.8	22.9	25.0	2.52
		10	28.5	31.0	24.6	28.0	3.23
		1	14.6	16.7	11.1	14.1	1.83
	Water	100	7.5	5.9	6.1	6.5	0.87
		75	6.2	6.3	6.5	6.3	0.15
		50	4.2	3.6	4.6	4.1	0.50
		25	2.5	2.3	2.7	2.5	0.20
		10	2.1	0.4	0.4	1.0	0.98
		1	5.2	5.3	4.2	4.9	0.61
48	Methanol	100	87.0	91.7	68.4	82.4	12.32
		75	79.9	83.7	74.8	79.5	4.47
		50	92.2	89.6	88.8	90.2	1.78
		25	1.2	0.3	7.5	3.0	3.92
		10	12.0	0.6	2.0	4.9	6.22
		1	29.9	3.7	9.2	14.3	13.82
	Hexane	100	75.8	76.5	75.8	76.0	0.40
		75	75.5	71.2	70.1	72.3	2.85
		50	79.4	79.4	71.6	76.8	4.50
		25	43.0	42.7	40.6	42.1	1.31
		10	19.1	27.3	23.0	23.1	4.10
		1	13.3	21.8	28.4	21.2	7.57
	Chloroform	100	68.2	71.1	64.7	68.0	3.20
		75	66.9	74.4	80.9	74.1	7.01
		50	69.2	76.3	76.6	74.0	4.19
		25	5.7	17.2	10.4	11.1	5.78
		10	3.3	3.2	11.5	6.0	4.76
		1	4.3	0.0	7.6	4.0	3.81

Appendix C11 continued.

	Water	**100**	1.5	1.9	2.6	2.0	0.56
		75	0.0	2.4	3.1	1.8	1.63
		50	1.2	1.7	3.3	2.1	1.10
		25	0.5	2.7	3.6	2.3	1.59
		10	2.4	2.9	3.3	2.9	0.45
		1	1.2	1.2	0.5	1.0	0.40
72	**Methanol**	**100**	91.4	87.8	86.8	88.7	2.42
		75	94.3	92.7	88.1	91.7	3.22
		50	90.9	93.9	92.2	92.3	1.50
		25	5.7	2.8	8.5	5.7	2.85
		10	0.0	2.8	0.8	1.2	1.44
		1	4.7	11.3	4.4	6.8	3.90
	Hexane	**100**	93.4	92.4	94.2	93.3	0.90
		75	93.4	94.4	97.0	94.9	1.86
		50	89.2	90.6	95.1	91.6	3.08
		25	13.2	48.9	54.4	38.8	22.37
		10	0.5	8.7	10.0	6.4	5.15
		1	1.3	5.9	18.8	8.7	9.07
	Chloroform	**100**	84.0	86.7	92.1	87.6	4.12
		75	89.7	89.9	88.7	89.4	0.64
		50	90.6	95.1	94.2	93.3	2.38
		25	10.3	16.2	32.1	19.5	11.28
		10	13.8	8.7	4.6	9.0	4.61
		1	0.0	6.1	7.4	4.5	3.95
	Water	**100**	1.9	2.5	3.4	2.6	0.75
		75	0.0	3.2	4.1	2.4	2.15
		50	1.6	2.2	4.4	2.7	1.47
		25	0.6	3.5	4.7	2.9	2.11
		10	3.2	3.8	4.4	3.8	0.60
		1	1.6	1.6	0.6	1.3	0.58

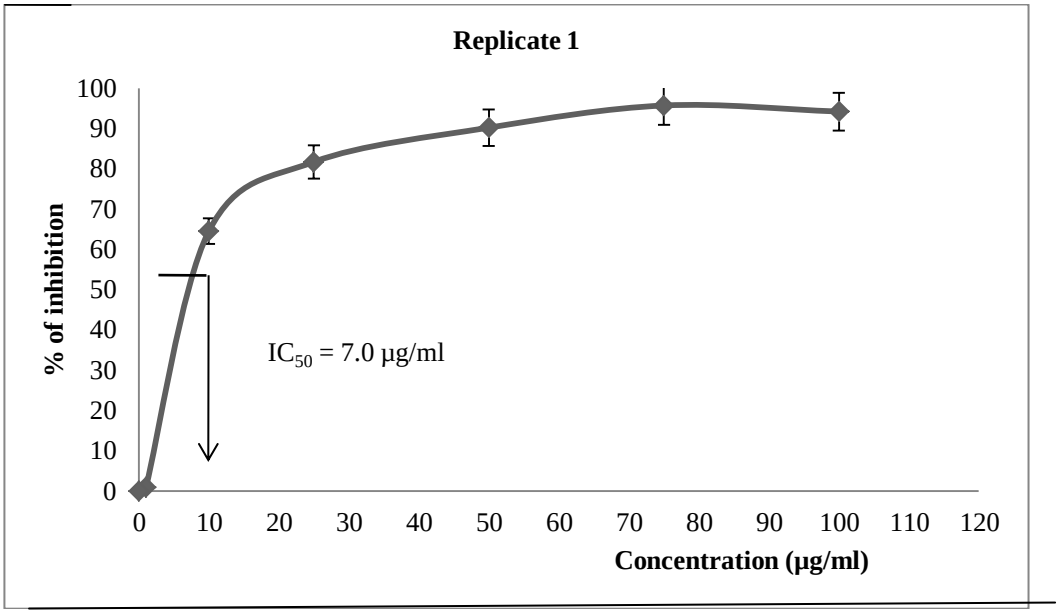
Appendix C12: Percentage of inhibition (%) of pseudo stem extracts of *A. scabra* for MRC-5 cells

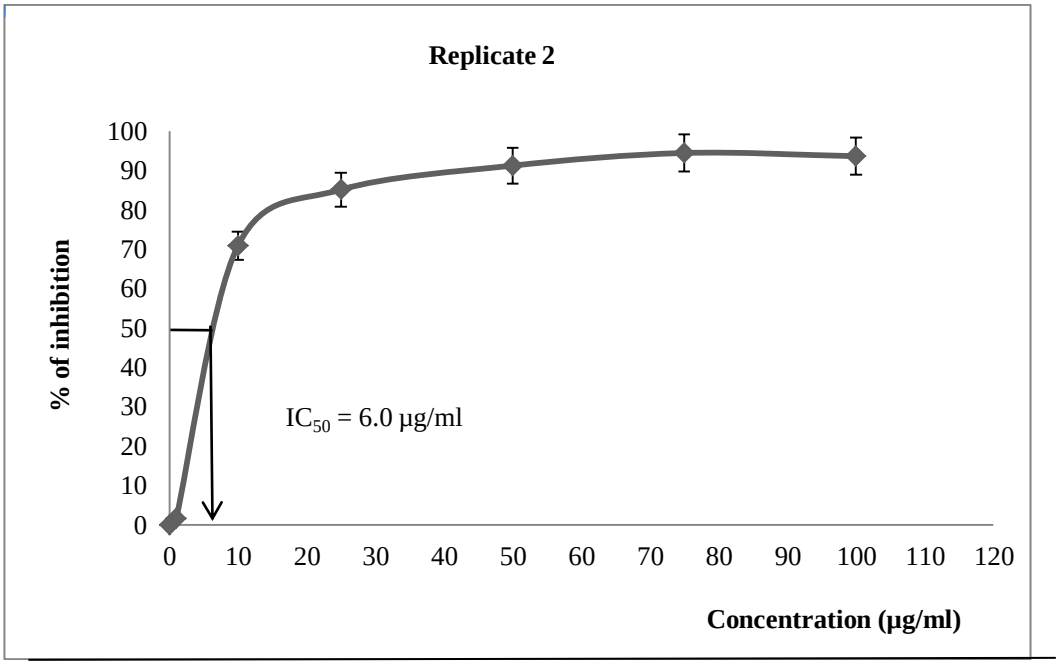
Treatment duration (hour)	Extracts	Concentration (µg/ml)	Percentage of growth inhibition (%)				
			Test 1	Test 2	Test 3	Average	Standard deviation
24	Methanol	100	0.0	0.2	7.3	2.5	4.16
		75	8.4	6.7	17.3	10.8	5.69
		50	7.7	14.7	19.9	14.1	6.12
		25	17.5	27.1	24.0	22.9	4.9
		10	24.0	14.9	23.5	20.8	5.12
		1	17.9	21.8	24.7	21.5	3.41
	Hexane	100	44.9	43.3	27.6	38.6	9.56
		75	14.3	28.3	19.8	20.8	7.05
		50	7.4	2.0	6.5	5.3	2.89
		25	40.8	33.3	10.4	28.2	15.84
		10	26.2	35.5	20.0	27.2	7.80
		1	49.5	32.7	13.9	32.0	17.81
	Chloroform	100	2.2	11.7	8.3	7.4	4.81
		75	17.4	22.2	22.4	20.7	2.83
		50	21.8	21.6	28.9	24.1	4.16
		25	48.0	48.7	41.5	46.1	3.97
		10	45.0	36.9	48.0	43.3	5.74
		1	25.2	26.5	22.4	24.7	2.10
	Water	100	5.9	6.3	6.9	6.4	0.50
		75	6.8	6.7	7.3	6.9	0.32
		50	5.7	6.1	7.6	6.5	1.00
		25	5.0	7.0	7.8	6.6	1.44
		10	4.5	7.2	7.6	6.4	1.69
		1	5.7	4.5	6.7	5.6	1.10
48	Methanol	100	25.3	22.1	24.7	24.0	1.70
		75	9.4	17.0	6.4	10.9	5.46
		50	7.6	20.8	19.8	16.1	7.35
		25	5.2	26.0	24.2	18.5	11.52
		10	18.6	34.5	35.5	29.5	9.48
		1	21.0	30.0	42.8	31.3	10.96
	Hexane	100	93.3	95.7	96.6	95.2	1.71
		75	55.8	71.1	63.5	63.5	7.65
		50	16.0	30.1	31.2	25.8	8.48
		25	11.0	4.0	21.9	12.3	9.02
		10	6.1	33.5	35.5	33.7	16.43
		1	14.5	31.2	35.7	27.1	11.17
	Chloroform	100	63.8	58.9	62.3	61.7	2.51
		75	77.7	66.9	68.2	70.9	5.90
		50	47.5	50.9	48.1	48.8	1.81
		25	23.6	28.9	23.8	25.4	3.00
		10	1.9	1.1	13.6	33.7	7.00
		1	37.0	16.9	12.0	22.0	13.25

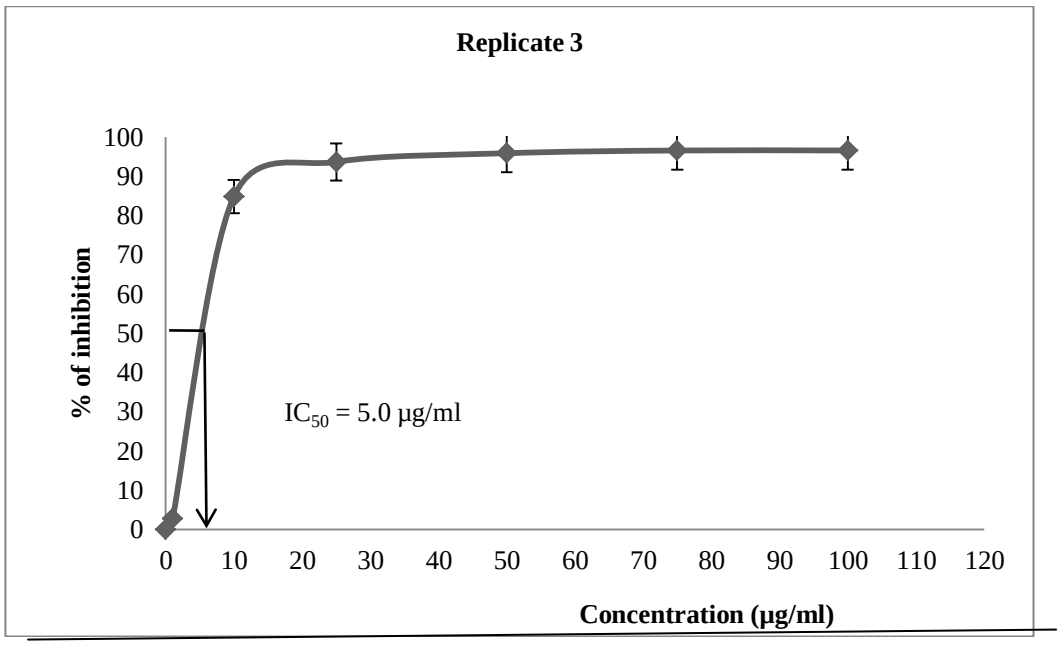
Appendix C12 continued.

	Water	**100**	4.7	6.7	4.8	5.4	1.13
		75	5.6	5.6	3.0	4.7	1.50
		50	4.5	4.9	3.2	4.2	0.89
		25	1.6	3.6	1.1	2.1	1.32
		10	5.6	3.8	3.2	4.2	1.25
		1	2.2	3.3	2.3	2.6	0.61
72	**Methanol**	**100**	3.3	14.9	12.6	10.3	6.14
		75	0.6	0.6	2.2	1.1	0.92
		50	8.6	10.3	1.5	6.8	4.67
		25	1.8	2.9	7.7	4.1	3.14
		10	13.9	13.6	5.1	10.9	5.00
		1	19.2	10.9	7.7	12.6	5.94
	Hexane	**100**	92.7	93.3	92.5	92.8	0.42
		75	77.6	80.4	85.0	81.0	3.74
		50	47.4	47.7	53.1	49.4	3.21
		25	13.7	8.3	9.2	10.4	2.89
		10	1.8	3.0	0.2	1.7	1.40
		1	11.7	8.3	4.8	8.3	3.45
	Chloroform	**100**	73.0	75.6	70.4	73.0	2.60
		75	73.0	76.9	74.1	74.7	2.01
		50	59.2	69.1	72.1	66.8	6.75
		25	5.0	4.0	3.5	4.2	0.76
		10	1.3	0.0	1.8	1.0	0.93
		1	19.9	16.9	13.7	16.8	3.10
	Water	**100**	28.6	28.8	29.1	28.8	0.25
		75	29.5	29.2	29.6	29.4	0.21
		50	28.4	28.5	29.8	28.9	0.78
		25	27.7	29.4	30.0	29.0	1.19
		10	27.7	29.7	29.8	29.1	1.18
		1	28.4	30.3	28.9	29.2	0.98

Appendix D: Example of calculation of IC_{50} value of the hexane extract of leaf sample for SKOV-3 cells







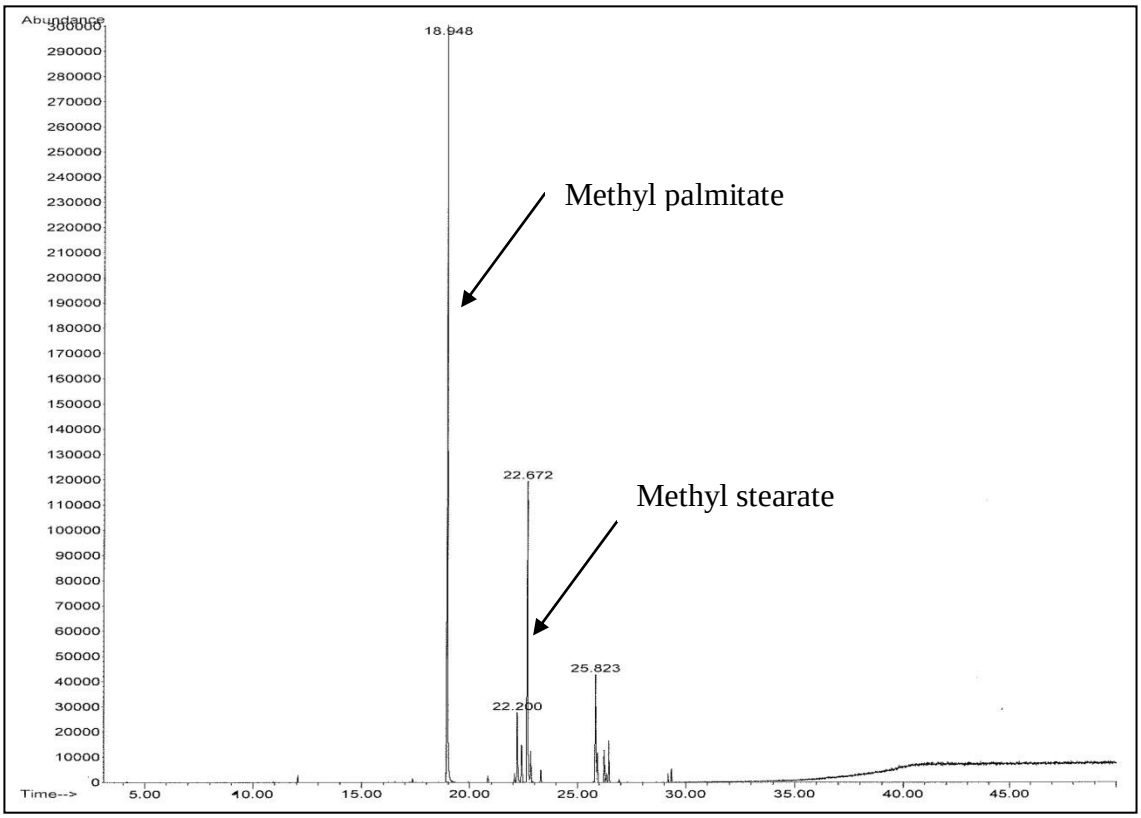
IC_{50} values are obtained by extrapolation from the graph of percentage of inhibition against varying concentrations of the extract/fraction as shown above.

$$IC_{50} \text{ of the hexane extract} = \frac{\text{Average of } IC_{50} \text{ value from three Replicate}}{3}$$

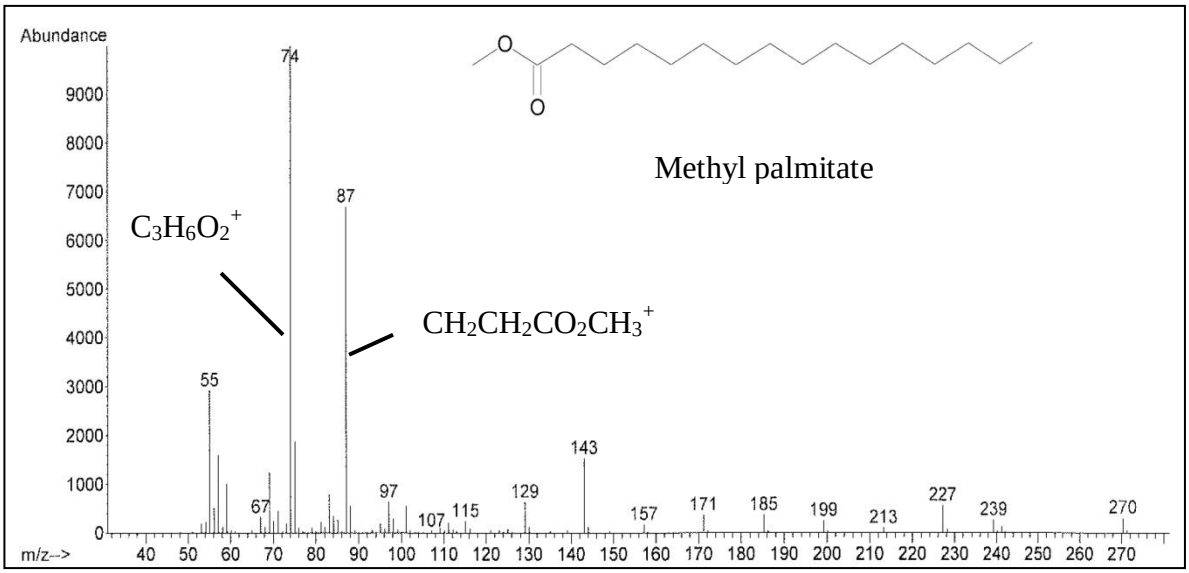
$$= \frac{7.0\ \mu g.ml + 6.0\ \mu g/ml + 5.0\ \mu g/ml}{3}$$

$$= 6.0\ \mu g/ml \pm 1.00$$

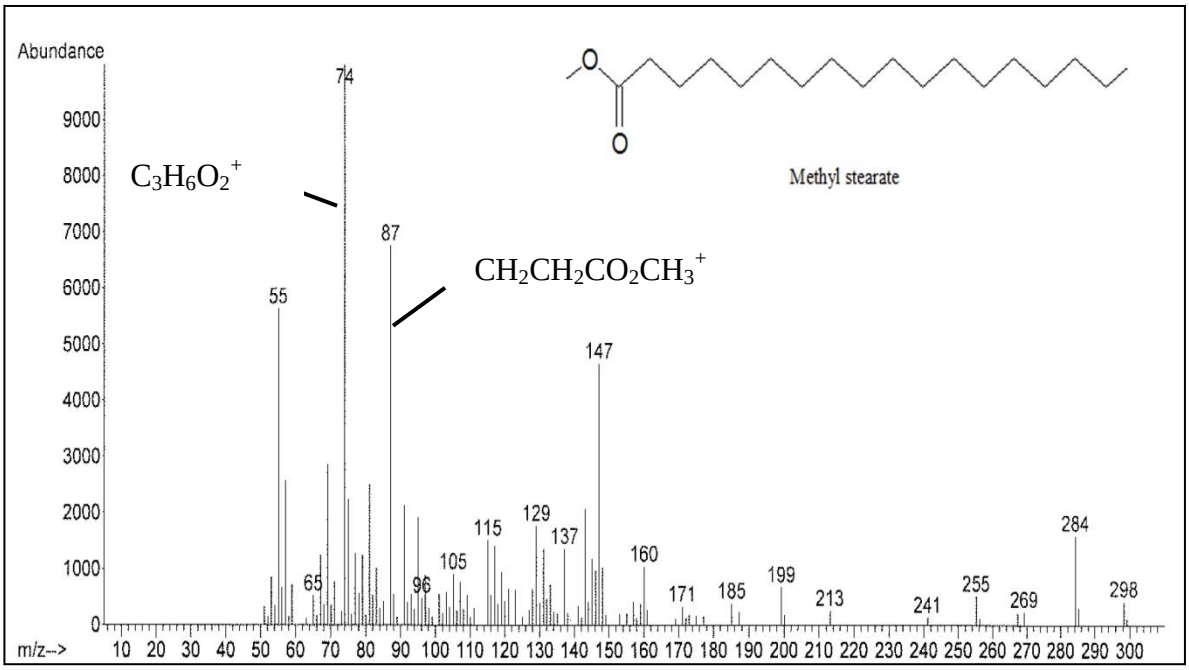
Appendix E: Gas chromatogram of leaf hexane extract of *A. scabra*



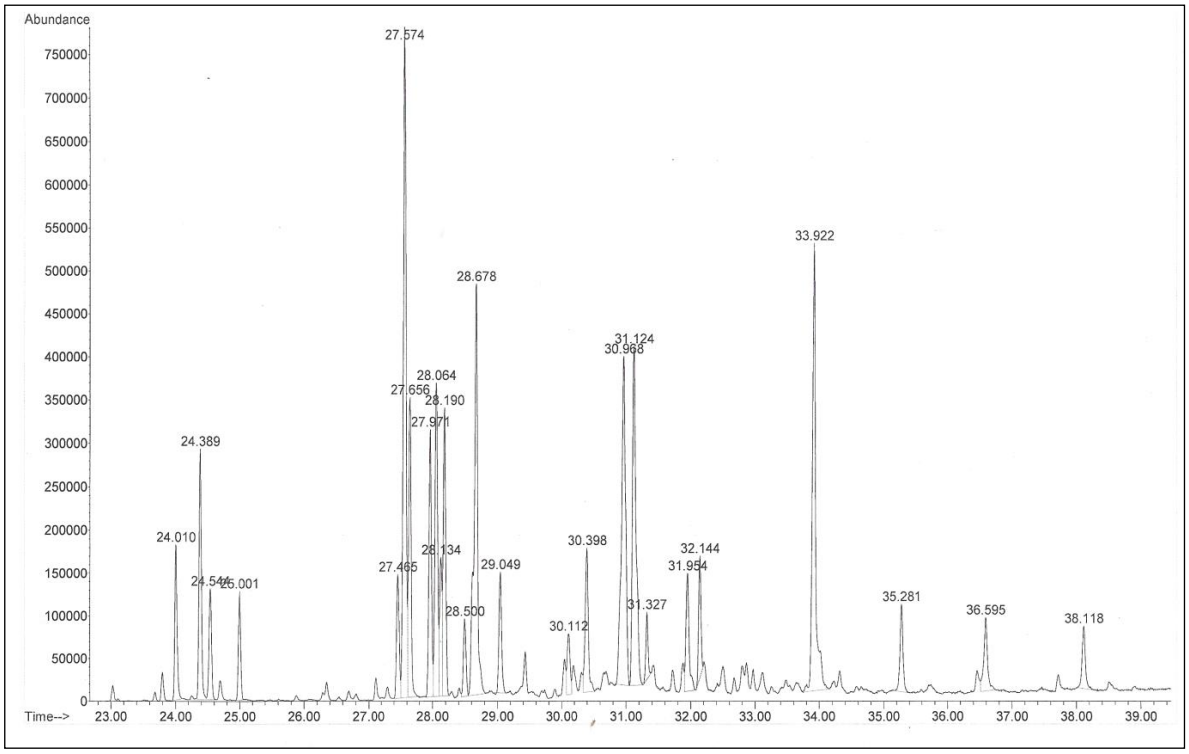
Appendix E1: Mass spectrum of methyl palmitate



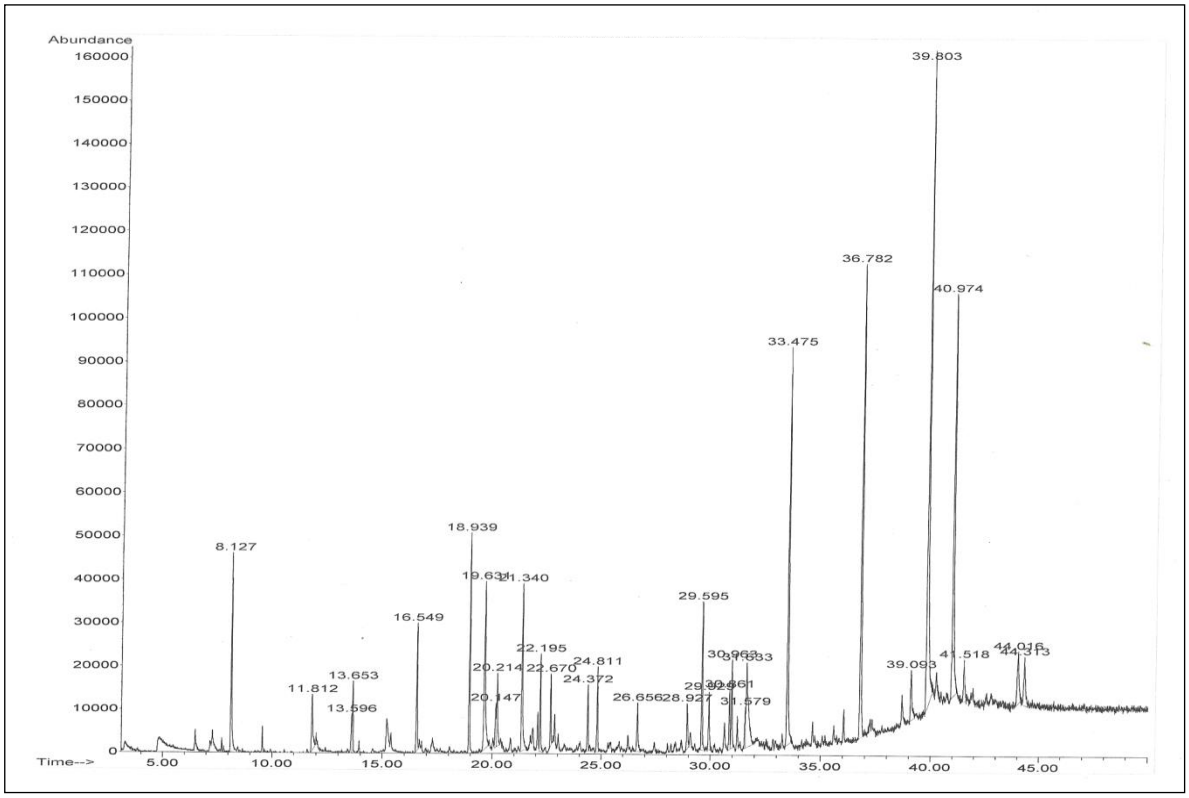
Appendix E2: Mass spectrum of methyl stearate



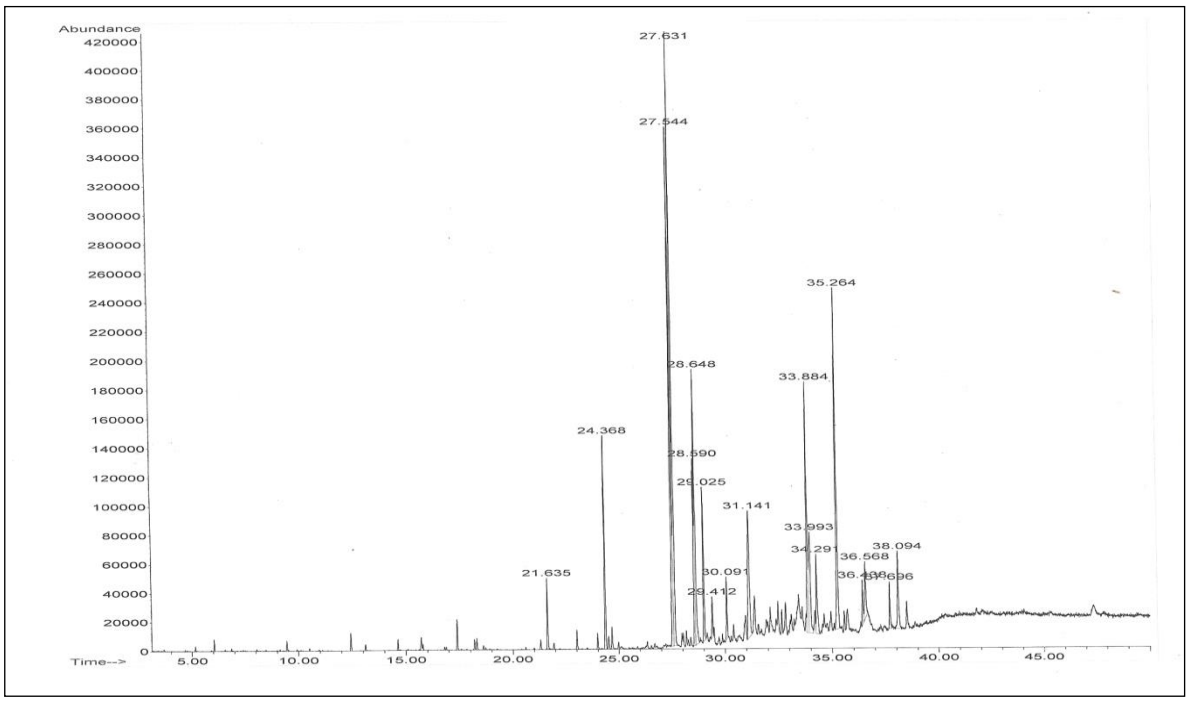
Appendix F: Gas chromatogram of leaf chloroform extract of *A. scabra*



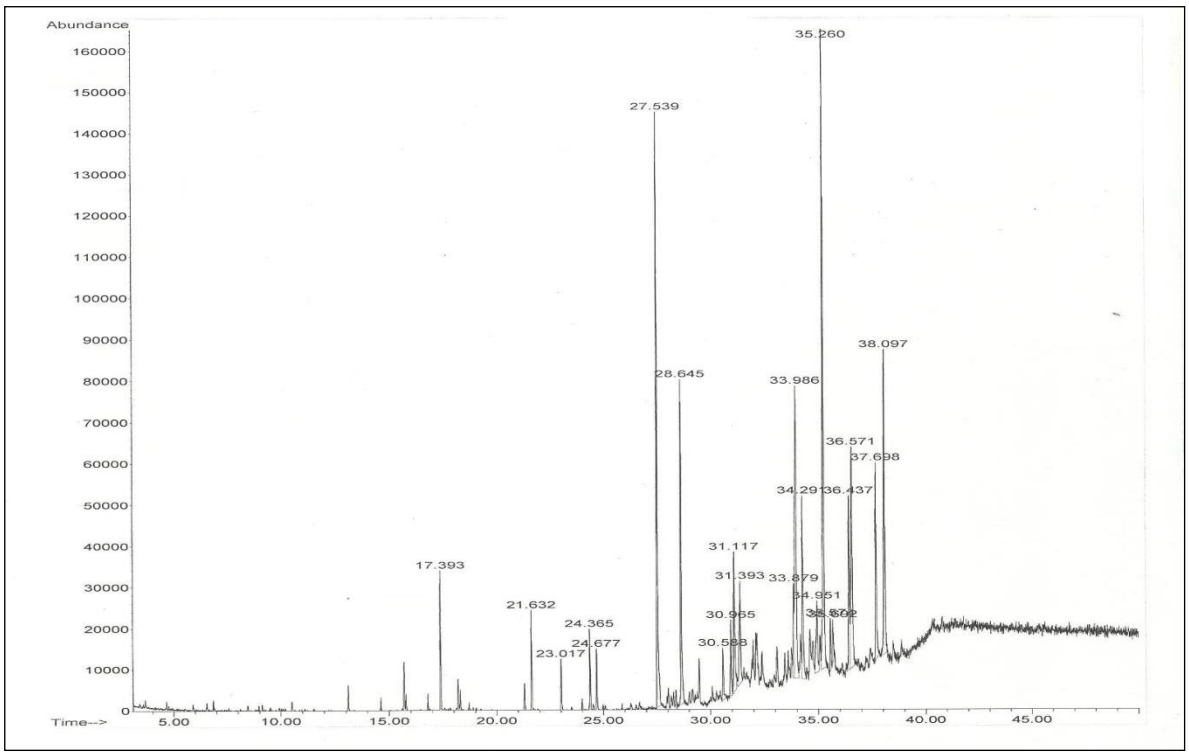
Appendix G: Gas chromatogram of rhizome chloroform extract of *A. scabra*



Appendix H: Gas chromatogram of fraction LC4



Appendix I: Gas chromatogram of sub-fraction VLC9



Appendix J: Gas chromatogram of fraction RC5