

Supplementary Table 7. Information and protein analysis of *A. thaliana*.

Gene name	Rename	Number of amino acids	Molecular weight	Theoretical I pI	Instability index	Aliphatic index	GRAVY	Subcellular localization
AT1G03590.1	ATPP2C1	462	50975.47	5.24	40	74.68	-0.422	nucl
AT1G07160.1	ATPP2C2	380	40709.16	7.03	51.63	85.74	-0.223	chlo
AT1G07430.1	ATPP2C3	442	49762.8	5.93	69.14	66.11	-0.726	nucl
AT1G07630.1	ATPP2C4	662	74274.14	5.21	42.48	81.54	-0.519	nucl
AT1G09160.1	ATPP2C5	428	45780.18	6.23	33.69	90.63	-0.15	chlo
AT1G16220.1	ATPP2C6	491	54353.28	5.38	44.25	78	-0.433	nucl
AT1G17550.1	ATPP2C7	511	56061.54	4.75	51.03	93.07	-0.162	chlo
AT1G18030.1	ATPP2C8	351	38485.88	6.85	36.7	86.95	-0.303	cyto
AT1G22280.1	ATPP2C9	287	31434.55	8.64	45.44	78.15	-0.443	chlo
AT1G34750.1	ATPP2C10	282	30984.05	7.13	41.58	86.45	-0.398	cysk
AT1G43900.1	ATPP2C11	371	40582.86	5.56	46.43	82.53	-0.107	chlo
AT1G47380.1	ATPP2C12	428	46421.51	5.27	39.8	80.14	-0.339	cyto
AT1G48040.1	ATPP2C13	383	42105.54	4.83	56.95	85.09	-0.123	nucl
AT1G67820.1	ATPP2C14	445	49353.05	8.43	47.57	77.1	-0.447	chlo
AT1G68410.1	ATPP2C15	436	47040.66	8.56	38.37	84.95	-0.231	chlo
AT1G72770.1	ATPP2C16	511	55744.02	4.73	45.26	89.82	-0.179	chlo
AT1G78200.1	ATPP2C17	283	30853.92	8.8	28.52	83.39	-0.411	chlo
AT1G79630.1	ATPP2C18	504	55603.74	4.78	48.9	79.46	-0.382	nucl
AT2G20050.1	ATPP2C19	1094	121388.78	5.04	39.72	87.5	-0.292	chlo
AT2G20630.1	ATPP2C20	290	31847.14	5.88	37.88	88.41	-0.318	cyto
AT2G25070.1	ATPP2C21	355	39354.13	4.83	41.24	66.76	-0.555	nucl
AT2G25620.1	ATPP2C22	392	42673.94	5.39	61.92	73.93	-0.338	nucl
AT2G28890.1	ATPP2C23	654	72482.05	5.11	35.73	79.14	-0.527	nucl
AT2G29380.1	ATPP2C24	362	40297.12	5.34	65.05	71.02	-0.511	nucl
AT2G30020.1	ATPP2C25	396	42420.03	7.99	54.36	81.01	-0.26	chlo
AT2G30170.1	ATPP2C26	298	32284.78	5.12	32.29	93.86	-0.012	chlo
AT2G33700.1	ATPP2C27	380	41757.45	5.24	49.36	87.03	-0.229	cyto
AT2G34740.1	ATPP2C28	339	37880.53	5.39	38.88	85.34	-0.564	cyto
AT2G35350.1	ATPP2C29	783	86522.62	5.18	49.19	76.08	-0.54	chlo
AT2G40180.1	ATPP2C30	390	42595.38	6.3	41.26	71.31	-0.403	nucl
AT2G40860.1	ATPP2C31	658	72852.89	5.66	45.9	91.6	-0.168	chlo
AT2G46920.1	ATPP2C32	856	95570.63	5.26	47	69.45	-0.609	nucl
AT3G02750.1	ATPP2C33	527	57674.28	4.94	43.38	77.72	-0.258	chlo
AT3G05640.1	ATPP2C34	358	39780.14	6.47	40.2	83.35	-0.239	cyto
AT3G06270.1	ATPP2C35	348	38329.89	4.67	35.12	78.36	-0.36	cyto
AT3G09400.1	ATPP2C36	650	72380.79	6.26	46.22	78.55	-0.487	chlo
AT3G11410.1	ATPP2C37	399	43350.02	5.97	50.13	84.49	-0.299	nucl
AT3G12620.1	ATPP2C38	385	42851.24	9.39	45.78	93.43	-0.216	chlo
AT3G15260.1	ATPP2C39	289	31630.04	5.51	28.06	89.41	-0.248	cyto
AT3G16560.1	ATPP2C40	493	53613.79	5	46.76	91.93	-0.134	nucl
AT3G16800.1	ATPP2C41	351	38601.14	7.94	49.3	83.59	-0.225	nucl
AT3G17090.1	ATPP2C42	384	42489.1	6.44	38.91	82.99	-0.28	chlo
AT3G17250.1	ATPP2C43	422	47598.99	5.06	55.08	85.47	-0.192	chlo
AT3G23360.1	ATPP2C44	260	29611.85	7.02	44.06	83.19	-0.442	nucl
AT3G27140.1	ATPP2C45	245	26566.51	8.26	44.46	99.47	-0.111	cyto
AT3G51370.1	ATPP2C46	379	42179.43	8.51	47.31	87.94	-0.26	chlo
AT3G51470.1	ATPP2C47	361	39485.79	5.5	56.3	78.61	-0.343	nucl
AT3G55050.1	ATPP2C48	384	42850.84	6.71	44.46	90.08	-0.277	chlo
AT3G62260.1	ATPP2C49	384	41968.36	4.54	57.17	89.87	-0.086	cyto
AT3G63320.1	ATPP2C50	423	46802.5	5.89	44.16	89.48	-0.153	chlo
AT3G63340.1	ATPP2C51	1075	119666.36	6.16	40.71	86.56	-0.227	vacu
AT4G03415.1	ATPP2C52	468	51851.13	5.77	42.76	67.86	-0.504	chlo
AT4G08260.1	ATPP2C53	212	23322.95	6.09	26.59	97.92	0	cyto
AT4G11040.1	ATPP2C54	295	31787.49	6.31	38.05	98.03	-0.039	cyto
AT4G16580.1	ATPP2C55	467	50296.63	8.32	34.55	82.29	-0.252	chlo
AT4G26080.1	ATPP2C56	434	47505.91	5.81	49.26	80	-0.319	chlo
AT4G27800.1	ATPP2C57	388	42719.33	5.73	45.68	91.73	-0.14	chlo
AT4G28400.1	ATPP2C58	283	31018.39	7.79	33.41	87.53	-0.323	cyto
AT4G31750.1	ATPP2C59	311	33247.71	4.67	40.22	79.32	-0.283	cyto
AT4G31860.1	ATPP2C60	357	39202.82	4.97	35.66	70.78	-0.477	nucl
AT4G32950.1	ATPP2C61	326	35121.86	6.12	34.56	90.31	-0.152	cyto
AT4G33500.1	ATPP2C62	724	78923.73	4.66	50.08	84.43	-0.397	chlo
AT4G33920.1	ATPP2C63	380	42318.44	9.25	43.82	91.32	-0.319	chlo
AT4G38520.1	ATPP2C64	400	44122.99	7.74	45.43	82.88	-0.253	chlo
AT5G01700.1	ATPP2C65	382	42004.32	5.51	39.05	73.93	-0.334	chlo
AT5G02400.1	ATPP2C66	674	74838.09	5.83	45.25	75.79	-0.595	nucl
AT5G02760.1	ATPP2C67	370	41334.32	8.99	37.35	84.05	-0.325	chlo
AT5G06750.1	ATPP2C68	393	44140.21	6.41	46.14	90.25	-0.222	mito
AT5G10740.1	ATPP2C69	354	38036.24	5.32	35.28	78.81	-0.408	cyto
AT5G19280.1	ATPP2C70	591	66059.28	6.59	43.88	88.93	-0.311	chlo
AT5G24940.1	ATPP2C71	447	48119.93	5.57	41.04	69.64	-0.602	mito
AT5G26010.1	ATPP2C72	331	36521.37	5.26	40.37	84.2	-0.274	cyto
AT5G27930.1	ATPP2C73	373	41583.36	6.86	37.48	81.82	-0.328	nucl
AT5G36250.1	ATPP2C74	448	49313.99	7.13	49.5	79.13	-0.4	chlo
AT5G51760.1	ATPP2C75	416	46042.8	5.45	66.29	74.04	-0.513	nucl
AT5G53140.1	ATPP2C76	420	45786.35	4.98	42.87	73.43	-0.4	chlo
AT5G57050.1	ATPP2C77	423	46306.41	5.93	50.94	75.82	-0.338	cyto
AT5G59220.1	ATPP2C78	413	45537.55	6.07	53.25	78.09	-0.305	nucl
AT5G66080.1	ATPP2C79	385	42962.92	7.77	46.97	91.09	-0.249	chlo
AT5G66720.1	ATPP2C80	414	43873.26	7.6	44.82	75.58	-0.183	chlo