

Supplementary material:

Table 1: Various parameters computed using ExPASy's ProtParam tool of AGPase in selected plants

Protein	Accession no	Length	Molecular weight	pI	-R	+R	EC	II	AI	Gravy
Wheat (LS)	P12299	522	57808.7	6.12	65	60	45435	42.86	80.52	-0.253
Wheat (SS)	P30523	473	52147.4	5.54	62	50	46550	35.91	90.76	-0.226
Rice(LS)	Q688T8	519	57653.7	6.34	63	59	44070	35.72	82.85	-0.212
Rice (SS)	P15280	514	56104.0	6.58	59	57	46675	42.56	90.37	-0.159
Maize (LS)	P55241	516	57071.0	6.16	60	55	44195	38.88	85.06	-0.207
Maize (SS)	Q947C0	475	52197.7	5.46	59	50	52050	33.35	91.87	-0.164
Barley (LS)	P30524	523	57932.6	6.17	65	60	45560	43.13	80.75	-0.242
Barley (SS)	P55238	513	56049.2	6.11	60	55	46675	36.52	91.72	-0.118
Potato (LS)	P55243	483	53602.3	8.92	55	62	46090	36.44	88.03	-0.214
Potato (SS)	P23509	521	57240.3	6.73	61	60	46675	44.18	91.21	-0.196
Arabidopsis (LS)	P55229	522	57673.8	8.02	61	63	47705	42.22	92.87	-0.174
Arabidopsis (SS)	P55228	520	56650.5	6.13	59	55	46675	34.86	93.04	-0.131

PI- isoelectric point; R- number of negatively & positively charged residue; EC- extinction coefficient; II-instability index; AI- aliphatic index, Gravy-Grand average of hydrophaticity

Table 2: Secondary structure prediction of AGPase through SOPMA

Protein	α Helix	β_{10} Helix	Pi Helix	β Bridge	Extended Strand	β Turn	Bend Region	Random Coil	Ambiguous States	Other States
Wheat(LS)	24.33	0.00	0.00	0.00	22.03	7.28	0.00	46.36	0.00	0.00
Wheat(SS)	22.62	0.00	0.00	0.00	22.41	6.77	0.00	48.20	0.00	0.00
Rice(LS)	25.24	0.00	0.00	0.00	21.97	6.55	0.00	46.24	0.00	0.00
Rice (SS)	25.29	0.00	0.00	0.00	22.18	7.20	0.00	45.33	0.00	0.00
Maize (LS)	25.58	0.00	0.00	0.00	22.48	7.56	0.00	44.38	0.00	0.00
Maize (SS)	22.95	0.00	0.00	0.00	23.37	6.32	0.00	47.37	0.00	0.00
Barley (LS)	24.09	0.00	0.00	0.00	22.56	7.27	0.00	46.08	0.00	0.00
Barley (SS)	25.93	0.00	0.00	0.00	22.61	6.63	0.00	44.83	0.00	0.00
Potato(LS)	24.84	0.00	0.00	0.00	24.02	7.04	0.00	44.10	0.00	0.00
Potato(SS)	24.57	0.00	0.00	0.00	22.46	5.37	0.00	47.60	0.00	0.00
Arabidopsis(LS)	24.71	0.00	0.00	0.00	23.18	6.90	0.00	45.21	0.00	0.00
Arabidopsis (SS)	25.00	0.00	0.00	0.00	24.81	6.54	0.00	43.65	0.00	0.00

Table 3: Motif prediction of AGPase in selected plants

Protein	Motif ID	Motif description	Start	End	Pattern
Wheat (LS)	PS00808	ADP_GLC_PYROPHOSPH_1	96	115	GGGtGTqLfpLTstrAtPAV
	PS00809	ADP_GLC_PYROPHOSPH_2	185	193	WFrGTADAV
	PS00810	ADP_GLC_PYROPHOSPH_3	301	311	ASMGVYVFkrD
Wheat (SS)	PS00808	ADP_GLC_PYROPHOSPH_1	49	68	GGGaGTrLypLTtkrAkPAV
	PS00809	ADP_GLC_PYROPHOSPH_2	138	146	WFqGTADAV
	PS00810	ADP_GLC_PYROPHOSPH_3	250	260	ASMGIVYVIskH
Rice (LS)	PS00808	ADP_GLC_PYROPHOSPH_1	93	112	GGGtGTqLfpLTstrAtPAV
	PS00809	ADP_GLC_PYROPHOSPH_2	182	190	WFqGTADAV
	PS00810	ADP_GLC_PYROPHOSPH_3	298	308	ASMGVYVFkrD
Rice (SS)	PS00808	ADP_GLC_PYROPHOSPH_1	90	109	GGGaGTrLypLTtkrAkPAV
	PS00809	ADP_GLC_PYROPHOSPH_2	179	187	WFqGTADAV
	PS00810	ADP_GLC_PYROPHOSPH_3	291	301	ASMGIVYVIskN
Maize (LS)	PS00808	ADP_GLC_PYROPHOSPH_1	90	109	GGGtGSqLfpLTstrAtPAV
	PS00809	ADP_GLC_PYROPHOSPH_2	179	187	WFqGTADSI
	PS00810	ADP_GLC_PYROPHOSPH_3	295	305	ASMGIVYVfkd
Maize (SS)	PS00808	ADP_GLC_PYROPHOSPH_1	51	70	GGGaGTrLypLTtkrAkPAV
	PS00809	ADP_GLC_PYROPHOSPH_2	140	148	WFqGTADAV
	PS00810	ADP_GLC_PYROPHOSPH_3	252	262	ASMGIVYVfskD
Barley (LS)	PS00808	ADP_GLC_PYROPHOSPH_1	97	116	GGGtGTqLfpLTstrAtPAV
	PS00809	ADP_GLC_PYROPHOSPH_2	186	194	WFrGTADAV
	PS00810	ADP_GLC_PYROPHOSPH_3	302	312	ASMGVYVFkrD

	PS00808	ADP_GLC_PYROPHOSPH_1	89	108	GGGaGTrLypLTkkrAkPAV
Barley	PS00809	ADP_GLC_PYROPHOSPH_2	178	186	WFqGTADAV
(SS)	PS00810	ADP_GLC_PYROPHOSPH_3	290	300	ASMGIVVIskH
	PS00808	ADP_GLC_PYROPHOSPH_1	55	74	GGGaGTrLfpLTkkrAkPAV WFqGTAHAV
Potato	PS00809	ADP_GLC_PYROPHOSPH_2	146	154	
(LS)					
Potato	PS00808	ADP_GLC_PYROPHOSPH_1	97	116	GGGaGTrLypLTkkrAkPAV
(SS)	PS00809	ADP_GLC_PYROPHOSPH_2	186	194	WFqGTADAV
	PS00810	ADP_GLC_PYROPHOSPH_3	298	308	ASMGIVVIskD
Arabidopsis	PS00808	ADP_GLC_PYROPHOSPH_1	96	115	GGGaGTrLfpLTkkrAkPAV
(LS)	PS00809	ADP_GLC_PYROPHOSPH_2	186	194	WFqGTADAV
	PS00810	ADP_GLC_PYROPHOSPH_3	301	311	ASMGVYVfkkE
Arabidopsis	PS00808	ADP_GLC_PYROPHOSPH_1	96	115	GGGaGTrLypLTkkrAkPAV
(SS)	PS00809	ADP_GLC_PYROPHOSPH_2	185	193	WFqGTADAV
	PS00810	ADP_GLC_PYROPHOSPH_3	297	307	ASMGIVVsrD