

Supplementary Material

Ammonium metabolism in *Selaginella bryopteris* in response to dehydration-rehydration and characterisation of desiccation tolerant, thermostable, cytosolic glutamine synthetase from plant

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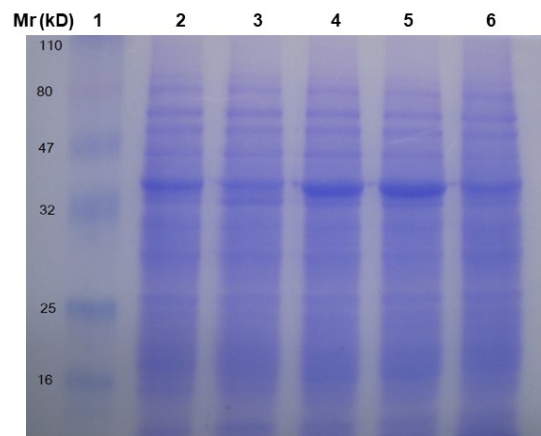


Fig. S1. SDS-PAGE analysis of total protein of *S.bryopteris* fronds at various stages of dehydration, Lane1-Molecular weight marker, Lane2-0h, Lane3-3h, Lane4-6h, Lane5-12h and Lane6 -24h. Approx. 10 μ g of protein was loaded in each lane.

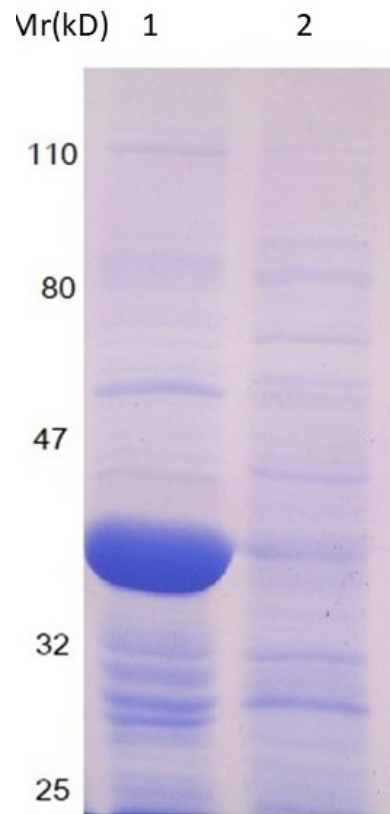


Fig. S2. SDS-PAGE analysis of chloroplastic (lane1) and cytosolic (lane 2) fractions of *S. bryopteris* fronds. Approx. 10 μ g of protein was loaded in each lane.

Table S1. Effect of dehydration (D) and rehydration (R) treatment on GS, NADH-GOGAT, aminating NADH-GDH and deaminating GDH activities of *S. bryopteris* fronds

	Time (h)	Dehydration (D)				24h-D /0h-R	Rehydration (R)			
		0	3	6	12		3	6	12	24
1.	*GS									
	(i) Absolute activity U/g of D and R plant	0.73	0.66	0.61	0.69	0.64	0.29	0.31	0.33	0.55
	(ii) Specific activity (U/mg protein)	0.63	0.66	0.63	0.58	0.50	0.49	0.52	0.46	0.58
	(iii) Activity/g dry wt.	2.02	1.57	1.30	0.86	0.71	0.76	0.86	1.00	1.77
2.	#GDH (Aminating)									
	(i) Absolute activity U/g of D and R plant	0.37	0.40	0.47	0.77	0.94	0.29	0.26	0.24	0.29
	(ii) Specific activity (U/mg protein)	0.32	0.40	0.48	0.64	0.74	0.49	0.43	0.33	0.30
	(iii) Activity/g dry wt.	1.08	0.96	1.00	0.95	1.03	0.76	0.72	0.71	0.92
	\$GDH (Deaminating)									
	(i) Absolute activity U/g of D and R plant	0.117	0.12	0.16	0.26	0.32	0.08	0.054	0.043	0.057
	(ii) Specific activity (U/mg protein)	0.102	0.12	0.17	0.22	0.25	0.13	0.09	0.06	0.06
	(iii) Activity/g dry wt	0.34	0.28	0.34	0.325	0.35	0.20	0.14	0.13	0.18
4.	@GOGAT									
	(i) Absolute activity U/g of D and R plant	0.092	0.11	0.13	0.13	0.24	0.12	0.103	0.094	0.115
	(ii) Specific activity (U/mg protein)	0.08	0.11	0.13	0.11	0.19	0.20	0.17	0.13	0.12
	(iii) Activity/g dry wt.	0.27	0.25	0.27	0.162	0.26	0.31	0.28	0.28	0.37

*1U=1.0 μmol of γ -glutamylhydroxamate min^{-1} ; #1U= 1 μmol NADH oxidised min^{-1} ; \$1U=1 μmol NAD reduced min^{-1} ; @1U= 1 μmol NADH oxidised min^{-1} .