

Supplementary Tables:

PHYSIOCHEMICAL PROPERTIES									
Protein Id	L	M.Wt	PI	- R	+ R	EC	II	AI	GRAVY
Q24210	898	100911	5.83	123	99	95200	42.1	89.48	-0.272
Q10KY3	600	66278.9	8.58	72	77	63175	44.4	83.97	-0.246
Q43531	520	57886.9	5.74	73	63	30410	48.89	94.5	-0.268
Q6RET7	523	58367	5.57	75	67	40225	43.48	89.45	-0.2999
O14936	926	105123	5.99	129	109	98180	46.42	84.32	-0.426
O70589	926	105109	5.99	129	109	98180	46.21	84.21	-0.427
Q62915	909	103259	6.04	126	107	98180	46.56	84.5	-0.419
Q6DEH3	491	55828.7	6.71	64	61	64455	46.08	82.26	-0.44
Q6DGS3	554	62384.1	7.94	66	68	66975	50.05	83.47	-0.432
Q14012	370	41337.1	5.12	57	40	48985	37.09	87.81	-0.283
Q91YS8	374	41624.3	5.19	57	42	48985	40.41	83.24	-0.337
Q63450	374	41638.4	5.19	57	42	48985	40.63	83.5	-0.331
Q6P2M8	343	38499.9	6.28	45	40	44140	40.33	91.02	-0.269
Q9QYK9	343	38518.9	6.02	45	38	44140	46.49	88.75	-0.285
O70150	343	38438.8	6.02	45	38	44140	45.4	89.88	-0.29
Q8IU85	385	42913.8	6.77	51	50	50225	41.17	81.09	-0.364
Q8BW96	385	42918.7	6.73	51	50	50225	41.97	80.34	-0.38
Q96NX5	476	53086.9	7.83	53	55	52340	46.19	81.72	-0.311
Q91VB2	477	53296.1	8.22	53	57	52340	49.49	79.48	-0.344
Q7TNJ7	476	53179	8.36	52	57	52340	48.84	80.06	-0.332
Q00771	414	46889.2	6.59	63	61	41620	40.82	85.05	-0.501
O14408	382	43532.4	6.34	60	56	45505	51.84	80.92	-0.566
Q9P7I2	335	38163.7	8.94	38	45	43570	38	77.22	-0.407
P27466	446	50296.2	5.82	74	67	41620	45.74	85.7	-0.571
Q00168	530	59919.9	7.07	69	68	63090	41.29	81.19	-0.467
Q9UQM7	478	54029.6	6.73	62	59	66975	47.92	84.5	-0.374
P11798	478	54114.7	6.61	63	59	66975	47.5	84.5	-0.386
Q5RCC4	478	54087.7	6.61	63	59	66975	47.5	84.5	-0.38
P11275	478	54114.7	6.61	63	59	66975	47.5	84.5	-0.386
Q3MHJ9	542	60482	6.89	64	62	63090	42.4	82.66	-0.343
Q13554	664	72726.8	8.06	71	74	68840	53.38	79.68	-0.365
P28652	542	60460.8	6.87	64	62	63090	42.82	82.29	-0.358
P08413	542	60401.8	6.73	64	61	63090	41.98	82.29	-0.353
Q2HJF7	488	55293.2	7.28	62	62	61475	44.47	81.17	-0.409
Q5ZKI0	479	54202.9	6.66	62	59	61475	43.25	82.51	-0.385
Q13557	499	56369.4	6.81	63	61	66975	42.48	81.34	-0.401
Q6PHZ2	499	56369.4	6.81	63	61	66975	42.48	81.34	-0.401
Q95266	499	56389.4	6.81	63	61	66975	43.2	81.34	-0.4
O77708	533	60010.4	6.86	66	64	68465	43.79	81.28	-0.437
P15791	533	60080.6	6.84	66	64	66975	44.79	82.01	-0.424

Q9DG02	475	53932.6	6.66	62	59	61475	43.91	85.45	-0.385
Q13555	558	62609.1	7.9	66	68	63090	53.45	79.05	-0.474
Q923T9	529	59606.8	7.32	64	64	63090	50	82.44	-0.439
P11730	527	59038.1	7.63	63	64	63090	47.72	82.77	-0.402
O42844	504	56609.3	6.04	67	58	54570	36.67	84.11	-0.373
P22517	447	50447.4	5.72	69	60	41495	47.02	93.09	-0.423
Q16566	473	51925.5	5.6	67	58	48860	31.64	90.95	-0.219
P08414	469	52627.5	4.83	84	57	48860	43.89	81.07	-0.504
P13234	474	53151.1	4.85	86	58	48860	51.35	81.27	-0.508
Q07250	415	46491.5	9.11	47	55	35660	44.87	96.31	-0.214
Q8N5S9	505	55735.4	5.55	74	61	41870	53	86.69	-0.406
Q8VBY2	505	55837.6	5.69	73	62	41995	52.87	84.36	-0.42
P97756	505	55907.7	5.68	74	62	41995	53.72	84.75	-0.428
Q96RR4	588	64731.7	6.25	76	70	35255	59.72	78.74	-0.469
Q8C078	588	64617.5	5.65	79	67	40630	59.43	76.24	-0.511
O88831	587	64446.2	5.65	79	67	35255	60.57	76.71	-0.498

Where L= Length, -R= Negatively charged amino acids, + R= Positively charged amino acids, II=Instability index, AI=Aliphatic Index, PI=Theoretical Isoelectric Point and EC=Extinction Coefficient

Table 1: Physiochemical properties of considered CAM kinase sequences.

SECONDARY STRUCTURE				
Protein ID	Alpha helix (%)	Extended strand (%)	Beta turn (%)	Random coil (%)
Q24210	38.2	17.15	7.46	37.19
Q10KY3	45.33	8.33	7.33	39
Q43531	47.31	10	9.23	33.46
Q6RET7	50.86	8.99	8.03	32.12
O14936	38.55	15.33	7.67	38.44
O70589	38.55	15.33	7.67	38.44
Q62915	39.93	14.52	7.26	38.28
Q6DEH3	40.33	16.09	7.54	36.05
Q6DGS3	41.52	13	7.04	38.45
Q14012	40.81	14.86	7.03	37.3
Q91YS8	37.43	13.9	6.15	42.51
Q63450	38.5	12.03	7.22	42.25
Q6P2M8	46.06	13.7	5.54	34.69
Q9QYK9	42.57	13.41	8.75	35.28
O70150	41.4	13.7	7	37.9
Q8IU85	41.82	15.58	6.23	36.36
Q8BW96	44.16	13.77	7.27	34.81
Q96NX5	32.35	13.24	6.09	48.32
Q91VB2	31.66	14.88	5.45	48.01
Q7TNJ7	33.19	13.24	6.72	46.85
Q00771	44.69	13.77	5.8	35.75
O14408	47.12	14.4	7.85	30.63
Q9P7I2	43.28	15.52	7.46	33.73
P27466	44.62	14.13	6.28	34.98
Q00168	43.96	14.53	6.23	35.28
Q9UQM7	41.21	14.64	8.16	35.98
P11798	39.75	14.23	8.16	37.87
Q5RCC4	39.96	14.23	7.32	38.49
P11275	39.75	14.23	8.16	37.87
Q3MHJ9	40.41	15.31	6.83	37.45
Q13554	37.65	13.1	7.23	42.02
P28652	38.93	14.39	7.75	38.93
P08413	38.93	14.76	7.38	38.93
Q2HJF7	40.37	15.37	8.2	36.07
Q5ZKI0	44.26	15.03	8.14	32.57
Q13557	42.08	15.23	8.02	34.67
Q6PHZ2	42.08	15.23	8.02	34.67
Q95266	42.08	15.03	7.62	35.27
O77708	39.59	15.01	7.69	37.71
P15791	42.03	14.07	7.5	36.4
Q9DG02	44.42	14.95	8.42	32.21
Q13555	37.81	4.7	6.81	40.68

Q923T9	38.37	17.39	7.56	36.67
P11730	40.04	14.8	6.83	38.33
O42844	31.94	12.1	7.34	48.61
P22517	45.86	14.09	7.38	32.66
Q16566	44.4	14.59	6.13	34.88
P08414	45.2	12.79	6.18	35.82
P13234	46.2	13.71	5.06	35.02
Q07250	46.99	10.6	6.51	35.9
Q8N5S9	26.34	12.87	4.36	56.44
Q8VBY2	27.13	13.27	4.55	55.05
P97756	29.11	12.48	3.96	54.46
Q96RR4	24.49	17.01	7.82	50.68
Q8C078	23.3	17.69	6.8	52.21
O88831	25.72	16.7	7.5	50.09

Table 2: Secondary structure features of considered CAM kinase sequences.

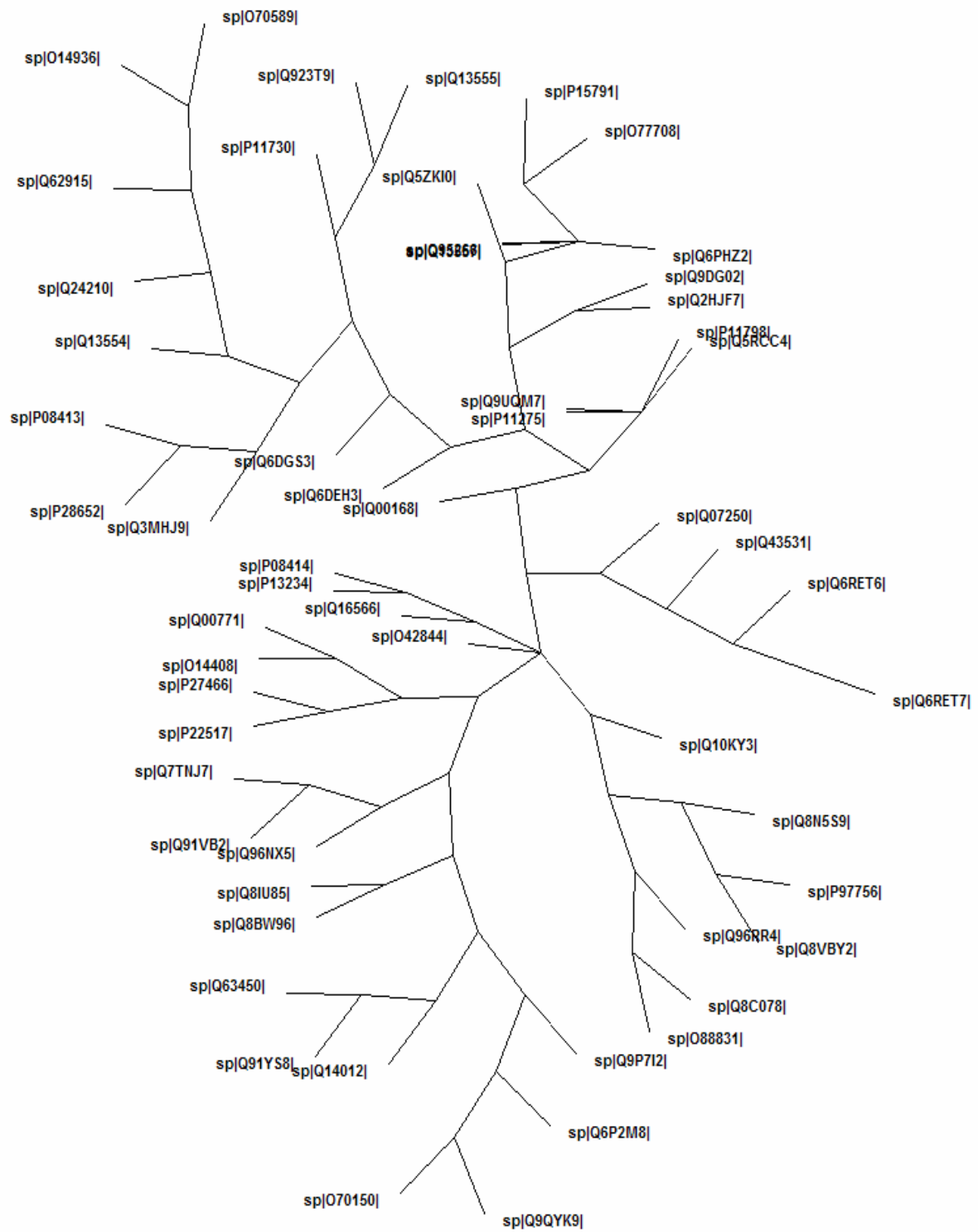


Figure 7: Tree constructed with PHYLIP 3.68 package parsimony method where 1000 replicates and 5 random seed number were considered during the execution of seqboot program. (SUPPLEMENT)