

**a**

1	tcg agt cgg cgt cgc ttg aga gag gac ctg ttt tga gga gat ttc	45
46	aca gtg aaa aaa gcc aca cat tct tga ata tcc ggt tga ttt ttg	90
91	tcc atc atg tct ttg aga act acc aca cat ctc acc agt aac ctg	135
1	M (S) L R T (T) T H L T (S) N L	13
136	ggg cac gac ctg aac aac ccc cgc aaa gta gag gcc aag atg atc	180
14	G H D L N N P R K V E A K M I	28
181	cag ggg cca gtc acc cgt cgt gct ttc gtg gat gtt ggc aac cgt	225
29	Q G P V (T) R R A F V D V G N R	43
226	gcc att cct gtg caa ggg ccc aag gct ccc ctc aag ccc ggg gag	270
44	A I P V Q G P K A P L K P G E	58
271	atc tcc cgt aat gag tcc gtg aaa ctg cag aag ccc aaa gcc ggc	315
59	I (S) R N E (S) V K L Q K P K A G	73
316	ctc tct ggg ctg cac gcc aga tcc ggc aaa gag aat gtg aag ccc	360
74	L S G L H A R (S) G K E N V K P	88
361	ctg aag gaa gtg gta gag cat gtg gag cag atg gat gtg gag gag	405
89	L K E V V E H V E Q M D V E E	103
406	gaa gcc aag gtg gaa gaa ctg gcc att gct ttc tcc acc cag aga	450
104	E A K V E E L A I A F S (T) Q R	118
451	cta gat gtt gaa gat att gat tcc caa gac agt gat aat cct cag	495
119	L D V E D I D (S) Q D (S) D N P Q	133
496	ctt gta tct gaa tat gtg aat gat atc tac aag tac ttg cga gag	540
134	L V (S) E Y V N D I (Y) K Y L R E	148
541	ctg gag gat gcc aac aaa gtc aag gcc aga tac cta gaa ggc caa	585
149	L E D A N K V K A R (Y) L E G Q	163
586	gta att aca gga aag atg agg gca att ttg att gat tgg ctt gtc	630
164	V I T G K M R A I L I D W L V	178
631	caa gtc cac ctc cgc ttc acc ctg ctt caa gag aca ctg tat ctg	675
179	Q V H L R F (T) L L Q E T L (Y) L	193
676	act gtt gct atc att gac aga ttt ctc cag act cag agg aat ata	720
194	T V A I I D R F L Q (T) Q R N I	208
721	cca cgt aac aag cta cag tta gtt ggt gtg act gcc atg ttt att	765
209	P R N K L Q L V G V T A M F I	223
766	gct agc aaa tat gaa gaa atg tat tgc cca gaa atc ggg gac ttc	810
224	A (S) K (Y) E E M Y C P E I G D F	238
811	gca tac atc aca gac aaa gcc tac tca aag gca gag att cgt aaa	855
239	A Y I (T) D K A (Y) (S) K A E I R K	253

856	atg gag gtg acc atg ctg aat gag ctg ggc ttc aat gta tcc tat	900
254	M E V T M L N E L G F N V (S) Y	268
901	ccc ctt ccc ttg cac ttc ctg cga aga aac agc aaa gct ggc tct	945
269	P L P L H F L R R N (S) K A G (S)	283
946	ggt gat gct tct caa cat acc ttg gca aag tac ctg atg gaa ctt	990
284	V D A (S) Q H T L A K Y L M E L	298
991	tgc ttg ccc gag tac agc atg tgc cat tac aaa tcg tca atg att	1035
299	C L P E Y S M C H (Y) K S (S) M I	313
1036	gct gca tct gct ctc tgc ctt tca ctt aag ttg ctg gat ggc aat	1080
314	A A S A L C L (S) L K L L D G N	328
1081	aac tgg agc gat aca ttg act ttc tat tct cgc tac act gaa caa	1125
329	N W S D T L (T) F Y S R (Y) T E Q	343
1126	cag ctt atg cca gtc atg tgc aaa atg gca gca gtt gta gtt aag	1170
344	Q L M P V M C K M A A V V V K	358
1171	agc agt agt gcc aag caa cag gct gta aga cag aag tac aaa gcc	1215
359	(S) (S) (S) A K Q Q A V R Q K Y K A	373
1216	agc aag ttg atg aag att agt gag att ccc cag ctc aag tca aag	1260
374	(S) K L M K I (S) E I P E L K (S) K	388
1261	ctc atc aac tcg ctc gca gag aag agt gcg tct tat gca tga ggt	1305
389	L I N (S) L A E K S A S Y A -	401
1306	ggc tgc cat tta taa agt aaa tat tgt aca tgt tga atg aat gga	1350
1351	ctg gtt ttt gta cat att act tta aga tgc cag ttt gtt ttc ttt	1395
1396	ttc ata agc ttt cag att tat aaa ata ctg act acc agt att taa	1440
1441	ctt ttt att tta caa gac tag ttc tct ggg tta gca tgt aca acc	1485
1486	cag agt gac tgg ttt tgg cat cta tcc att tat cat ggt ctt cat	1530
1531	tgt att aat ata att tta gac agg aca aaa atg gct att tga taa	1575
1576	aag gaa ctt gca aag aag tat atg cta taa tgt ctt gta atg tat	1620
1621	ata tga tct gtg ata aac ttt tag tta cgt tct gta tgt ata cct	1665
1666	ata taa taa acc agt ttt atc caa gat ctg tat tcc act att ttt	1710
1711	tat gcc ttt agt tat aca ttg caa cca tat ttg tgg att gac agt	1755
1756	aaa taa gat gat tta tgg att aat gtt cat aac cat tcc ttt cct	1800
1801	ata gtt ttc agc atc acc aaa gaa aat aaa tat gca tgc ttt act	1845
1846	tta taa atg caa aag aac agg ctt gtg tgc caa ata ttg tac aca	1890
1891	ttt tat tct tta ttt tag aac cca gat gtt gat ttt atg tgc agg	1935
1936	atg cat att cct tta tgc aga tta ggt gct ttg cca aat gta att	1980
1981	tta act tct gca ctt tta aat att ccg taa att gtc aca ggt ata	2025
2026	ttt ttt gta tgg taa tgc agt ttt cgt aat tta gga tta atg aac	2070
2071	caa gga atc ctg ttt acc att att ttt gtt gta cct ttt tga tca	2115
2116	gct gct tta ggt ggt agt ggt ccc aaa act aca agg gac aaa gat	2160
2161	gga cgt tgt att tag cgg ctg taa aat agg ata gac ttg gag aaa	2205
2206	aga gga aaa atg gaa cta ttt gtt cta gtg ttg cat cct aga aga	2250
2251	gat cta gtt ctt gac caa agg atg tat taa att gtt ctc atg tgg	2295
2296	att tga cta gac taa acc tag gtg cta tat tct tac tat gta tac	2340
2341	ttc cag ttg aaa gaa atg taa atg cat gtt acc cat act gta ata	2385
2386	ttt ttc aga aaa gta aac gaa ata caa taa aaa	2418

**b**

2	tca gtt gaa cga cga aag gag aaa ctt ttt aaa act caa tta taa	46
47	ctt ctc att gcg aaa atg gac ggc aac tta tca cgt ttt ttt gaa	91
1	M D G N L (S) R F F E	10
92	gat agg aaa tct gtg cca gaa ggt gct tgt gct aca gaa ccc cag	136
11	D R K (S) V P E G A C A T E P Q	25
137	ctg aca agt gca cta tgg aaa aaa att att cag gaa aat cct tta	181
26	L T (S) A L W K K I I Q E N P L	40
182	gat att aaa agt act tct gtg tat aat gaa tat agt tta acg gat	226
41	D I K (S) (T) (S) V Y N E Y (S) L (T) D	55
227	gtt aga agt gac cat att cta gga tat agc caa gag gtt aaa gca	271
56	V R S D H I L G Y (S) Q E V K A	70
272	agt gaa cca gtg act caa gca aca tgt ttt tat gaa tgc gat aaa	316
71	(S) E P V (T) Q A T C F Y E C D K	85
317	aat aca agt acc cca tta tca aac ttt gat ata agt aca gtg tta	361
86	N T S T P L (S) N F D I (S) (T) V L	100
362	cac aga aat gag gtg gat tta cct cct gat cct ttt aag aaa ttg	406
101	H R N E V D L P P D P F K K L	115
407	aaa gat gca agt gat atc tgg gaa tca agt aca cca aga cat tca	451
116	K D A (S) D I W E S (S) (T) P R H (S)	130
452	tta tat att gac caa cat ggt aac aat agt caa aca gca agt gat	496
131	L (Y) I D Q H G N N (S) Q T A S D	145
497	aat aca att acc ttt gat agt ttc gaa agt aac cag agt cag aat	541
146	N T I T F D (S) F E S N Q (S) Q N	160
542	gac tct ggt ata tat tta gat gta gag cag aag gag atg caa ggt	586
161	D (S) G I (Y) L D V E Q K E M Q G	175
587	gcg agt agc ctg tta ttt tca acg cag tct ata aac aat att tgg	631
176	A S (S) L L F S (T) Q (S) I N N I W	190
632	ggt gca cct gga agt acc agt aac caa aac cat aat ata tca aca	676
191	G A P G S T S N Q N H N I (S) (T)	205
677	aca gat att cag cca cag gaa tat agt aag atc agt gca aca gca	721
206	(T) D I Q P Q E Y (S) K I (S) A T A	220
722	tgg gat cac ttc ctt agt ggt cag cca aca tta aac acc aaa tat	766
221	W D H F L S G Q P T L N (T) K Y	235
767	aat gta gga agt gac aat cac ttc tct aat ttg tca agc aga agt	811
236	N V G (S) D N H F S N L (S) (S) R S	250

812	aga ttc cag aac ctc cag tcc aat tac aat aac ttg aca tca cca	856
251	R F Q N L Q (S) N Y N N L (T) (S) P	265
857	gtc aac acc tgt ctt cca gta ggc agt cct cag gat aca ttt cag	901
266	V N T C L P V G (S) P Q D T F Q	280
902	cga tct gaa cca gta ttc tca caa gaa aat cag caa cca gat tta	946
281	R S E P V F (S) Q E N Q Q P D L	295
947	gtt tca ctt atg gag gaa ctg tct tta aat gaa aca ttt aat tat	991
296	V (S) L M E E L (S) L N E T F N (Y)	310
992	gga caa gga aac aac aga tca tgg tct ccc caa cat tca atg caa	1036
311	G Q G N N R S W (S) P Q H S M Q	325
1037	aaa act act agt tcc ata acc tca gtc aag ggt tgt gtg ttt tgt	1081
326	K T (T) (S) (S) I T (S) V K G C V F C	340
1082	aaa aac aac aat tac cat tct acc ttt tat agg tca cat tca tta	1126
341	K N N N Y H S (T) F Y R (S) H (S) L	355
1127	aag gat gat cgc ggt cat tgc cag tgt cct gta cta aga atg tat	1171
356	K D D R G H C Q C P V L R M Y	370
1172	gtc tgc cct ctg tgc aat gct aca ggg gat tca gca cat acc ctc	1216
371	V C P L C N A T G D S A H (T) L	385
1217	aaa tat tgc cca agg aat act gta acc cat gga gat cca ata tca	1261
486	K Y C P R N (T) V T H G D P I (S)	400
1262	gca ggt ctt ccc cca ggc aaa gtt acc aat tgg aga gag atg gca	1306
401	A G L P P G K V T N W R E M A	415
1307	aat cga atg ata tta cga cga agg aat aat caa taa ata ggc tgt	1351
416	N R M I L R R R N N Q -	426
1352	caa tac cta tga tgt tta tga cat tta tta ttt tga tgt aaa ttt	1396
1397	tat atg gat ctt tga tat ttg atg aaa atc atg gaa aat aat ttt	1441
1442	ctt aga cat ttt gaa cta ttt gtg ttt ctt act ttt atg act	1483

# c

2	aaa gaa gcg tca atg gcg tcc agt gtc tgc ggc gga cca cac tct	46
47	ttt ccg gcc ttt gta cgc tcc aca cgc gca acc ccg tca ccc tgc	91
92	ttt gtt gct tcc gaa cgt tac taa cag tgc acc acg atg tcc gag	136
1		3
		M S E
137	tcg ccg gta aaa gct gcc gag acc agt gcc agc ccc aag agc tgc	181
4	S P V K A A E T S A S P K S S	18
182	ccg tcc aag aaa gag att gat aca gca acc caa gct tta aat cac	226
19	P S K K E I D T A T Q A L N H	33
227	ttt gct cag ggc aag aga cac ttg gtt gtt ggt gac att tgc tct	271
34	F A Q G K R H L V V G D I S S	48
272	gca gtt aat tct ttg cag gag gca tgt aga cta ctc gca gag caa	316
49	A V N S L Q E A C R L L A E Q	63
317	tac ggt gaa act gct cca gag tgt ggt gat gct tat ttc tac tat	361
64	Y G E T A P E C G D A Y F Y Y	78
362	ggc cgt gca ttg ctt gaa atg gca cgc atg gag aac gga gtc tta	406
79	G R A L L E M A R M E N G V L	93
407	gga aat gct ttg gat gga gtt ccc gat gga gag gac atg gac aat	451
94	G N A L D G V P D G E D M D N	108
452	tcc cag gta gaa aat cct gaa aaa atg aca gag gat gag aag aac	496
109	S Q V E N P E K M T E D E K N	123
497	gag gta aca gaa cag gtt ggg aaa gcg ttg gaa gaa aac ttt aaa	541
124	E V T E Q V G K A L E E N F K	138
542	gat ctt gag gat gtg aca aaa agt aaa tgc gca aag cag aat gga	586
139	D L E D V T K S K S A K Q N G	153
587	gat gca aag gca gtg gag tct tca ggt gtt gag gag gag gct aaa	631
154	D A K A V E S S G V E E E A K	168
632	atg gat gta gat tca gct gga gtg tca gat tcc aaa gat gaa gat	676
169	M D V D S A G V S D S K D E D	183
677	gga ggg gag aag aaa gat aaa gta gag aag gca gaa ggg gag gaa	721
184	G G E K K D K V E K A E G E E	198
722	aag agt aaa gca gaa acc tgc gac act gat ggc acc acc act tcc	766
199	K S K A E T S D T D G T T T S	213
767	aaa gta gag gct agc tca gta gat agt gag aat gta gac aag gaa	811
214	K V E A S S V D S E N V D K E	228
812	agc cag cct gag aaa aag gaa gtt gtg gat acc aaa gat agt tcc	856
229	S Q P E K K E V V D T K D S S	243

857	aaa gag gag gca aag gaa gcg gag aag gtg acg gag gag aag gtt	901
244	<span>K E E A</span> K E <span>A E K V (T) E E K V</span>	258
902	gag aag gtt gag gct aag gag gaa gaa ggg aaa acc act gag aag	946
259	E K V E A K <span>E E E G K T (T) E K</span>	273
947	gga gag gga gag aag gaa aag gaa aag gga tca gga gac act aaa	991
274	<span>G E</span> G E K E K <span>E K G (S) G D (T) K</span>	288
992	gat gaa aag gga aag gaa gat gcc aaa gtt gaa gag gag aaa gta	1036
289	<span>D E K</span> G K E D A K V E E <span>E K V</span>	303
1037	aaa acg gaa gca aag gaa gag gaa atg gaa act gat ggc act gag	1081
304	K <span>(T)</span> E A K E E E M E <span>(T)</span> D G <span>(T)</span> E	318
1082	aag aag gaa ggc agt aca gaa ggc gag gaa gag gag gaa ggt gat	1126
319	<span>K K E G (S) (T) E G E E</span> E E E G D	333
1127	ggt gaa ggc gat ggc gat ggt gaa ggt gat gaa gaa tct caa gaa	1171
334	G E G D G D G E <span>G D (E) E (S) Q E</span>	348
1172	gaa tcc cag gat gaa gga gaa aag gag gaa ggt gcc agc cag gaa	1216
349	<span>E (S) Q D E G</span> E K <span>E E G A (S) Q E</span>	363
1217	gaa ggg gaa aag act gaa gag gat gag gaa gag gta tca aac ctg	1261
364	<span>E G E K (T) E E D E E E V (S) N L</span>	378
1262	cag ctg tct tgg gaa atg ttg gag ttg gca aag gtt atc tat cag	1306
379	<span>Q L</span> <span>(S)</span> W E M L E L <span>A K V I (Y) Q</span>	393
1307	aag caa cag gat gag aac cca gag atg gcc aag aaa gtt gcc caa	1351
394	<span>K Q Q</span> D E N P E M A K K V A Q	408
1352	gtc tac cta aaa ctt gga gaa gta ggc ttg gag agt gaa aac tat	1396
409	V Y L K L G E V G L E <span>S E N (Y)</span>	423
1397	aca cag ggt att gag gac ttc aaa caa tgt ctg caa ata cag gaa	1441
424	<span>(T) Q G I E D</span> F K Q C L Q I Q E	438
1442	aaa att ctt gag gaa gac aac agg tgt ttg gca gaa acc cat tac	1486
439	K I L E E D N R C L A E T H <span>(Y)</span>	453
1487	cag ctt ggt gta gca cac tcc ttc tca gat gac ttt gac aag gca	1531
454	Q L G V <span>A H (S) F (S) D D F D K A</span>	468
1532	att gat agc ttt aca gca gca atg aag gtt att gaa atg aga att	1576
469	<span>I D (S) F (T) A A M K</span> V I E M R I	483
1577	act aat ctt gaa aaa cgg ata aag gag aaa aag gaa tgg aca gaa	1621
484	<span>(T)</span> N L E K R I K E K K E W T E	498
1622	gag caa aga aag aaa gat gct gca gag aga cct gat cca ttc tat	1666
499	E Q R K K D A A E R <span>P D P F (Y)</span>	513
1667	aca gaa gaa ggc gag att gaa gaa tta aac aag ttg tta cca gag	1711
514	<span>(T)</span> E E G E I E E L N K L L P E	528

1712	atg aag gaa aag gtt aca gat atg gag gaa	atg aag aaa gac agc	1756
529	M K E K V (T) D M E E	M K K D (S)	543
1757	aag gac aga ctc cag aaa gca gca aag ctg	cct ctt gaa cct gtg	1801
544	K D R L Q K A A K L P L E P V		558
1802	gaa gca ttc atg gca aat gca att ggt ggc	acc tcc aaa gct gga	1846
559	E A F M A N A I G G (T) (S) K A G		573
1847	tct tca tca caa act gga ttt gat gca cct	tca agt tct aca tcc	1891
574	(S) S (S) Q (T) G F D A P (S) (S) (S) (T) (S)		588
1892	tca acc ccc aca gaa ata aag gct tcc aac	att act cat ctt gta	1936
589	(S) (T) P (T) E I K A (S) N I T H	L V	603
1937	aga aag aag agg aaa cca gaa gat gag	ggt gag gga gaa gag gtg	1981
604	R K K R K P E D E V E G E E V		618
1982	aaa aag gca aaa ggc gag aat gga gaa gct	cat gga act gct aat	2026
619	K K A K G E N G E A H G (T) A N		633
2027	gga act acc aat ggc acc aat ggg cac	tct gaa acc atg gaa acg	2071
634	G T T N G T N G H (S) E (T) M E (T)		648
2072	gag gaa aag gat acc cct tca aat ggg	gca agc act gaa gaa tta	2116
649	E E K D (T) P (S) N G A (S) (T) E E L		663
2117	aag gag aaa gca gct gaa gag atg aag	aaa aag acg gat atg atc	2161
664	(K) E K A A E E M K K K T D M (I)		678
2162	act ggg aaa acc gag gca gca tcc	tag ata cgt gta taa tgc ctt	2206
679	T G K (T) E A A S -		686
2207	taa aac act gcc agt tat tgg act aag	aac ttt tgt att tta ttg	2251
2252	taa tgg aag cca ttt tat tac cag tga	act gtg ttt taa gat tta	2296
2297	cat aat tta tta aaa atg aaa tgt aca	ttt ttt ctg ttt cta ccc	2341
2342	aac tac att gaa cat tta ggt atg aag	tga ttt ctt gcc ttg gga	2386
2387	ctg att ttt gaa gtg ccc aga tgt ggt	gct gct ggt gtg gat ggt	2431
2432	acc tga aat atg aac ttt agt tgc act	agt ttc tca att tta aac	2476
2477	ttt ttt tgg cca caa gtt ttg tat tgt	aaa ctt tca ata ttt gca	2521
2522	gtt tac tac ctg gaa atc taa cta acc	att cct gat ttt aaa tgt	2566
2567	ttt agt tga gat tta tat caa atg ctg	aat gtt tat ttc tgc cta	2611
2612	aaa cat gga att taa agg aaa atg aaa	tgc aat tac aac tgc ttt	2656
2657	att tga gga ata taa ttc taa aca	tgt aat cac aat gca gca	2698

**Figure S1.** The full-length cDNA from *in silico* analysis, deduced protein sequences of *FmCyclinB*, *FmNanos*, and *FmNASP* genes. (a) The full-length cDNA of *FmCyclinB* (b) The full-length cDNA of *FmNanos* (c) The full-length cDNA of *FmNASP*. Letters in circles are predicted phosphorylated amino acids, and sequences in boxes are predicted kinase motif sequences. Red and yellow boxes in (b) show Cys-Cys-His-Cys zinc finger motifs of Nanos.