

**Suppl. Fig 3.** Top : List of maize  $\beta$ -Expansins genes and putative genes studied with corresponding names, GB# of assembled ESTs and genomic DNA. Bottom : Aligement of translated sequences. ZmEXPB1 to ZmEXPB11 have been published and named by Wu et al 2001a and Li et al 2003a.

Deposited name	Gene name	Genebank accession#				TIGR TC Contig member #	in sillico specificity ?	full or partial genomic
		representative ESTs or ETG	cDNA (a)	TIGR Contig	TIGR Genomic DNA (c)			
	ZmEXPB1		AF332174	TC279802	AZM5_12008	108	pollen/anther	full
	ZmEXPB2		AF332175	TC310573	AZM5_9615	48	no	full
	ZmEXPB3		AF332176	TC310577	AZM5_9614	21	no	full
	ZmEXPB4		AF332177	TC288029	AZM5_7010	28	no	partial
	ZmEXPB5		AF332178	TC280518	AZM5_2613	13	no	full
	ZmEXPB6		AF332179	TC305980	AZM5_9616	15	no	full
	ZmEXPB7		AF332180	TC280517	AZM5_2612	17	no	full
	ZmEXPB8		AF332181	TC310570	AZM5_9612	28	no	partial
	ZmEXPB9		AY197352	TC281284	AZM5_010	35	pollen/anther	partial
	ZmEXPB10		AY104125	TC292647	AZM5_126156	103	pollen/anther	partial
	ZmEXPB11		AY104999	TC292651	AZM5_122131	20	no	partial
ZmEXPB12		DV515050		TC287648	AZM5_7380	34	no	partial
ZmEXPB13		DY400881		TC280521	AZM5_977	18	no	partial
ZmEXPB14		BG320486		TC280520	AZM5_2611	14	no	full
ZmEXPB15		DV031017		TC311993	AZM5_12097	13	no	full
ZmEXPB16		DV503456		TC289097	AZM5_84662	11	no	partial
ZmEXPB17		CA405004		TC311991	lacking	11	no	
ZmEXPB18		BQ538460		TC310578	AZM5_9613	10	no	full
ZmEXPB19		CF635809		TC287642	AZM5_88389	6	no	full
ZmEXPB20		BM267903		TC310589	AZM5_89613	5	no	full
ZmEXPB21		DV493220		TC308480	AZM5_17733	3	no	full
ZmEXPB22		BG873846		BG873846 (b)	AZM5_7658	1		full
		(a) published by Wu et al 2001 Plant Physiol or Li et al 2003 Plant Physiol						
		(b) singleton						
		(c) Blast search October 2006						
		(d) <i>partial</i> means that sequence extends beyond BAC end						

1 10 20 30 40 50 60 70 80 90 100 110 120 130  
AF332174\_ZnEXPB1 MGSLLVNIHVYVAVLALVYAGGSCGPPKVPVPPGNTITNYNGKLTARATYVGPNGAGAPDNGGACGIKN-VNLPYPSGHTACGN  
AY197352\_ZnEXPB9 MGSLLANNIHVYVAVLALVYVGGSCGPPKVPVPPGNTITNYNGKLTARATYVGPNGAGAPDNGGACGIKN-VNLPYPSGHTACGN  
AY104125\_ZnEXPB10 MAVNVRTMSSNRQVAVYVAVL VFLVYGGANGCAPPKVPVPPGNTITATYGDLDLAKATYVGPNGAGAPDNGGACGIKN-VNLPYPSGHTACGN  
AY104999\_ZnEXPB11 HTAVSYTMSLVRQVAVLAVFLVYGGANGCAPPKVPVPPGNTITATYGDLDLAKATYVGPNGAGAPDNGGACGIKN-VNLPYPSGHTACGN  
AF332175\_ZnEXPB2 MGSFSSLPAARALLVLLALLAGGACREARQDRAADAGA--EMFNTEARAVYVGPNGAGAPDNGGACGIKN-VNLPYPSGHTACGN  
AF332181\_ZnEXPB8 MRQHSFSPSRAARALLVLLALLAGGACREARQDRAADAGTGTENYASDAVYVGPNGAGAPDNGGACGIKN-VNLPYPSGHTACGN  
AF332176\_ZnEXPB3 HAVLWMMSSSLSSRAVRAARLLCLLVHAGSDGTRHNSNNGGSGSSSSKSHKGGGGRAHRAPTTSPYSPSPAGNNSSDDG-ALNARATYVGPNGAGAPDNGGACGIKN-VNLPYPSGHTACGN  
AF332178\_ZnEXPB5 MASTSSFKVLAALGALIFSLVLYGSCARPANFTASDFADPN-HEARATYVGPNGAGAPDNGGACGIKN-VNLPYPSGHTACGN  
AF332180\_ZnEXPB7 MATLSSKVALGAPLFLLLVTCGSCARPANFTASDFADPN-HEARATYVGPNGAGAPDNGGACGIKN-VNLPYPSGHTACGN  
TC280520\_ZnEXPB14 MAATSSSSSTVVALRALLFLLVTCGSCARPANFTASDFADPN-HEARATYVGPNGAGAPDNGGACGIKN-VNLPYPSGHTACGN  
TC280521\_ZnEXPB13 MSVQSKVVALGALIF--LVSYGSTRIVNFNASHITDTPY-HVAARATYVGPNGAGAPDNGGACGIKN-VNLPYPSGHTACGN  
AF332179\_ZnEXPB6 NATALSFKALALRALLSMY--VSGARRAQKRNATTA--SQDRSLLSYSSG-ALPAKATYVGPNGAGAPDNGGACGIKN-VNLPYPSGHTACGN  
TC310578\_ZnEXPB18 NATALSKCALAVARALLSVYSVYVYGARARQQPSHNSDSESSQDRSLLSYSSG-ALPAKATYVGPNGAGAPDNGGACGIKN-VNLPYPSGHTACGN  
AF332177\_ZnEXPB4 MAKLWTL--AAVYVLSLVSPITACRKLKPKPKPSYRRPKPKVYGSYRPPVARRNHTATPSPSYVYGGGLSGAGATYVGPNGAGAPDNGGACGIKN-VNLPYPSGHTACGN  
TC287648\_ZnEXPB12 MAKSYTLLF-VALLVLLVSPITACSRKLAKP-NKP-----KPTHKPA-----ARVTPGSNHTDIPAVS--RAYGSGGALS-AGATYVGPNGAGAPDNGGACGIKN-VNLPYPSGHTACGN  
TC287642\_ZnEXPB19 MAKSCITLLFGTVLVLLLLVSPITACSRKLAKPTNKH-----RPHKPA-----A-VRRASNHTATPVS--DAYGSGGALS-AGATYVGPNGAGAPDNGGACGIKN-VNLPYPSGHTACGN  
TC311993\_ZnEXPB15 MATKYLRCFVLAARVACLRLRPGNPF-ELHRLKSGSDGAGATYVGPNGAGAPDNGGACGIKN-VNLPYPSGHTACGN  
TC289097\_ZnEXPB16 MASTLQLLSIATLALFFLHPCASTDEFHRELWGSNGI-ATYVGPNGAGAPDNGGACGIKN-VNLPYPSGHTACGN  
B6873846\_ZnEXPB22 RGPDDXGACGFKH-TNQYPPSHHTSCGN  
TC310589\_ZnEXPB20  
TC308380\_ZnEXPB21  
TC311991\_ZnEXPB17  
Consensus ..at.yg...gag.d..ggacg.....p...n...g.

131 140 150 160 170 180 190 200 210 220 230 240 250 260  
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AY197352\_ZnEXPB9 VPIFKDGGKGCSCYEVRC--KEKPECSGNPVTYITDM---NYEPIAPYHFDLSGAFGSLAKPGLNOKLRHCIGDMVEFRVRYCKYPAAGQKLVFHEIEKGNPNYLAVLVYKVVADGDVLMETDQKL--  
AY104125\_ZnEXPB10 VPIFKDGGKGCSCYEVRC--KEKPECSGNPVTYITDM---NYEPIAPYHFDLSGAFGSLAKPGLNOKLRHCIGDMVEFRVRYCKYPAAGQKLVFHEIEKGNPNYLAVLVYKVVADGDVLMETDQKL--  
AY104999\_ZnEXPB11 VPIFKDGGKGCSCYEVRC--KEKPECSGNPVTYITDM---NYEPIAPYHFDLSGAFGSLAKPGLNOKLRHCIGDMVEFRVRYCKYPAAGQKLVFHEIEKGNPNYLAVLVYKVVADGDVLMETDQKL--  
AF332175\_ZnEXPB2 QPLFKDGGKGCSCYQIRC--RKDPSCSGRTETVITDM---NYYPVSKYHFDLSGTAFGRALAKPGLNOKLRHSGIIEFTRVPCFFP--GLKIGFVVEEYSSPYFAVLYVEFDGGDGVVQVQLHEAKTA  
AF332181\_ZnEXPB8 QPLFKDGGKGCSCYQIRC--RKDPSCSGRTETVITDM---NYYPVSKYHFDLSGTAFGRALAKPGLNOKLRHSGIIEFTRVPCFFP--GLKIGFVVEEYSSPYFAVLYVEFDGGDGVVQVQLHEAKTA  
AF332176\_ZnEXPB3 EPIFKDGGKGCSCYQIRC--KAPACSGVAVETVITDM---NYYPVAPYHFDLSGTAFGRALAKPGLNOKLRHSGIIEFTRVPCFFP--GLKIGFVVEEYSSPYFAVLYVEFDGGDGVVQVQLHEAKTA  
AF332178\_ZnEXPB5 QPLFKDGGKGCSCYQIRC--QNHAPACSGNPETVITDM---NYYPVAKYHFDLSGTAFGRALAKPGLNOKLRHSGIIEFTRVPCFFP--GLKIGFVVEEYSSPYFAVLYVEFDGGDGVVQVQLHEAKTA  
AF332180\_ZnEXPB7 EPLFKDGGKGCSCYQIRC--QNHAPACSGNPETVITDM---NYYPVAKYHFDLSGTAFGRALAKPGLNOKLRHSGIIEFTRVPCFFP--GLKIGFVVEEYSSPYFAVLYVEFDGGDGVVQVQLHEAKTA  
TC280520\_ZnEXPB14 EPLFKDGGKGCSCYQIRC--QNHAPACSGNPETVITDM---NYYPVAKYHFDLSGTAFGRALAKPGLNOKLRHSGIIEFTRVPCFFP--GLKIGFVVEEYSSPYFAVLYVEFDGGDGVVQVQLHEAKTA  
TC280521\_ZnEXPB13 QPLFKDGGKGCSCYQIRC--VNHAPACSGNPETVITDM---NYYPVAKYHFDLSGTAFGRALAKPGLNOKLRHSGIIEFTRVPCFFP--GLKIGFVVEEYSSPYFAVLYVEFDGGDGVVQVQLHEAKTA  
AF332179\_ZnEXPB6 EPIFKDGGKGCSCYQIRC--KAPACSGVAVETVITDM---NYYPVAPYHFDLSGTAFGRALAKPGLNOKLRHSGIIEFTRVPCFFP--GLKIGFVVEEYSSPYFAVLYVEFDGGDGVVQVQLHEAKTA  
TC310578\_ZnEXPB18 EPIFKDGGKGCSCYQIRC--KAPACSGVAVETVITDM---NYYPVAPYHFDLSGTAFGRALAKPGLNOKLRHSGIIEFTRVPCFFP--GLKIGFVVEEYSSPYFAVLYVEFDGGDGVVQVQLHEAKTA  
AF332177\_ZnEXPB4 TPLVYRGGEGCAGCYEVK--TTNAAACSGQPVTYITDQSPGGLFPGVEYHFDMSGTAMGAMAPGNADRLRSRAGLTIQYKRVPCYKYS--GVNIATFVDDQGNPNFYFVLEVIEFDGGDGLSARVLMHEAG--  
TC287648\_ZnEXPB12 PSLFKDGGKGCSCYQIRC--DSNAPACSGPATVYITDPCPGVLAERAHFDMSGTSMGAMAPGNADRLRSRAGLTIQYKRVPCYKYS--GVNIATFVDDQGNPNFYFVLEVIEFDGGDGLSARVLMHEAG--  
TC287642\_ZnEXPB19 PSLFKDGGKGCSCYQIRC--DSNAPACSGPATVYITDPCPGVLAERAHFDMSGTSMGAMAPGNADRLRSRAGLTIQYKRVPCYKYS--GVNIATFVDDQGNPNFYFVLEVIEFDGGDGLSARVLMHEAG--  
TC311993\_ZnEXPB15 PSIFQNGKGCSCYQVVC--TGNHACSGSPVTYVITDPCPGVLAERAHFDMSGTSMGAMAPGNADRLRSRAGLTIQYKRVPCYKYS--GVNIATFVDDQGNPNFYFVLEVIEFDGGDGLSARVLMHEAG--  
TC289097\_ZnEXPB16 SSIYDSGKGCSCYQVVC--TGNHACSGSPVTYVITDPCPGVLAERAHFDMSGTSMGAMAPGNADRLRSRAGLTIQYKRVPCYKYS--GVNIATFVDDQGNPNFYFVLEVIEFDGGDGLSARVLMHEAG--  
B6873846\_ZnEXPB22 EPLFKDGGKGCSCYQIRC--KAPACSGVAVETVITDM---NYYPVAPYHFDLSGTAFGRALAKPGLNOKLRHSGIIEFTRVPCFFP--GLKIGFVVEEYSSPYFAVLYVEFDGGDGVVQVQLHEAKTA  
TC310589\_ZnEXPB20  
TC308380\_ZnEXPB21  
TC311991\_ZnEXPB17  
Consensus ...f..gkcgcy...c.....csg...v.itd.....p...ghfslgstafga#akp6...#.LR.a6iidi%#.RVpC..p G...!.F.!#.GsnpnYLAVLVYe%g.g#gd.v.v#n#....

261 270 280 290 300 310 320 330 340 350 360 370 377  
AF332174\_ZnEXPB1 ---SRAEKPKLSHGAIRKMDT---AKALKGPFSSIRL TSESGKVIKADVIPANRHPDVAVYTSNVQFY  
AY197352\_ZnEXPB9 ---SRAEKPKLSHGAIRKMDT---AKALKGPFSSIRL TSESGKVIKADVIPANRHPDVAVYTSNVQFY  
AY104125\_ZnEXPB10 ---SDTYELPKHSHGAIKRDSD---DKPLKGPLTVRL TTEGGTKSVYDDVIPANRHPDVAVYTSNVQFY  
AY104999\_ZnEXPB11 ---SDTYELPKHSHGAIKRDSD---DKPLKGPLTVRL TTEGGTKSVYDDVIPANRHPDVAVYTSNVQFY  
AF332175\_ZnEXPB2 RGPPTGRHAPHSRSHGSIKRDMDT---NHRHQPFSIRIRNESGKTLVANNVIPANRHPDVAVYTSNVQFY  
AF332181\_ZnEXPB8 RGPPTGRHAPHSRSHGSIKRDMDT---NHRHQPFSIRIRNESGKTLVANNVIPANRHPDVAVYTSNVQFY  
AF332176\_ZnEXPB3 DGEPTGVHAPHSRSHGSIKRDMDT---RRPLQGPFSIRIRNESGKTLVANNVIPANRHPDVAVYTSNVQFY  
AF332178\_ZnEXPB5 ---SGYHAPHSRSHGSIKRDMDT---NHRHQPFSIRIRNESGKTLVANNVIPANRHPDVAVYTSNVQFY  
AF332180\_ZnEXPB7 ---SGYHAPHSRSHGSIKRDMDT---NHRHQPFSIRIRNESGKTLVANNVIPANRHPDVAVYTSNVQFY  
TC280520\_ZnEXPB14 ---SGYHAPHSRSHGSIKRDMDT---NHRHQPFSIRIRNESGKTLVANNVIPANRHPDVAVYTSNVQFY  
TC280521\_ZnEXPB13 ---SGYHAPHSRSHGSIKRDMDT---NHRHQPFSIRIRNESGKTLVANNVIPANRHPDVAVYTSNVQFY  
AF332179\_ZnEXPB6 ---SGYHAPHSRSHGSIKRDMDT---NHRHQPFSIRIRNESGKTLVANNVIPANRHPDVAVYTSNVQFY  
TC310578\_ZnEXPB18 ---SGYHAPHSRSHGSIKRDMDT---NHRHQPFSIRIRNESGKTLVANNVIPANRHPDVAVYTSNVQFY  
AF332177\_ZnEXPB4 ---VHTPHANNHGAIRKMDT---GRKLKAPFSLRL TSDSRVLAANNVIPANRHPDVAVYTSNVQFY  
TC287648\_ZnEXPB12 ---CG---THTPHANNHGAIRKMDT---GRKLKAPFSLRL TSDSRVLAANNVIPANRHPDVAVYTSNVQFY  
TC287642\_ZnEXPB19 ---CG---THTPHANNHGAIRKMDT---GRKLKAPFSLRL TSDSRVLAANNVIPANRHPDVAVYTSNVQFY  
TC311993\_ZnEXPB15 ---GG---GAMPHQSHGAIKRDSD---GDLQAPFSVRL TSGSRTVVASNVIPAGHTPGATYRSVNVFDM--N  
TC289097\_ZnEXPB16 ---GGTIGQVPHQSHGAIKRDSD---GDLQAPFSVRL TSGSRTVVASNVIPAGHTPGATYRSVNVFDM--N  
B6873846\_ZnEXPB22 TGKPTGVHTPHANNHGAIRKMDT---APRHQAP  
TC310589\_ZnEXPB20 ---ARRHTPHNSHGSIRKMDT---NHRHQPFSIRIRNESGKTLVANNVIPANRHPDVAVYTSNVQFY  
TC308380\_ZnEXPB21 ---AGQVPHQSHGAIKRDSD---GDLQAPFSVRL TSGSRTVVASNVIPAGHTPGATYRSVNVFDM--N  
TC311991\_ZnEXPB17 ARRSAAHAPHSRSHGAIKRDSD---GDLQAPFSVRL TSGSRTVVASNVIPAGHTPGATYRSVNVFDM--N  
Consensus .....g.H.N..SHGa!wr.ds ...lqgPfs.r.lc...sg..lva..vipa.u.p...urs.v.....