:abidopsis Intron Splice-Site Mutations

.ven below is a table of Arabidopsis mutants to intron splice site sequences
ıd their splicing behaviour. This was compiled by John W.S. Brown, Scottish
:op Research Institute. The original table was published in, Brown, J.W.S.
.996) Arabidopsis intron mutations and pre-mRNA splicing. The Plant Journal 1(
'1-780.

'19/04- This page is no longer actively maintained. For a more comprehensive
.sting of mutations in Splice Sites please use TAIR's Polymorphism/Allele
earch
ıttp://www.arabidopsis.org/servlets/Search?action=new_search&type=polyallele)
ıd select SPLICE JUNCTION under the polymorphism site parameter.

:abidopsis mutants with mutations to intron splice site sequences and their
)licing behaviour

splice site mutants

ıtant	**Gene**	**Intron**	**Splice Site Mutation**	**Splicing behavior***	**RNA Analysis**	**Reference**
ıx1-22	AUX1	IVS5	:GU to :GA	Activation of cryptic 5' splice site 34nt upstream.	RT-PCR	Marchant and Bennet 1996
:a	RUBISCO ACTIVASE	IVS3	:GU to :AU	Splicing block due to accumulation of lariat-exon intermediate.	Northern Primer extension	Orozco et al., 1993; Liu and Filipowic: 1996
ıyB-103	PHYB	IVS1	:GU to :AU	Unspliced transcript detected by RT-PCR. May lead to splicing block due to accumulation of lariat-exon	RT-PCR Northern	Bradley et al., 1995

				intermediate.		
)y-1	SPINDLY	EXON8	G:GU to A:GU	Exon 8 skipped.	RT-PCR	Jacobsen e al., 1996
:t1-1 :t1-3	DE-ETIOLATED	IVS1	G +5 to A	Unspliced	Northern	Pepper et al., 1994

splice site Mutants

ıtant	**Gene**	**Intron**	**Splice Site Mutation**	**Splicing behavior***	**RNA Analysis**	**I**
:4(2YY6)	CHS	IVS1	AG:G to AA:G	Splicing to first AG: downstream (1nt)	RT-PCR	I e 1
)p1-6	CONSTITUTIVE PHOTOMORPHOGENIC (COP 1)	IVS4	AG:U to GG:U	1) Splicing to first AG: downstream (16nt);		
activation : cryptic 3')lice site)nt upstream ı IVS4;						
activation : cryptic 3')lice site 'nt upstream ı IVS4;						
unspliced.	RT-PCR	McNellis et al., 1994				
'8-2	PHYA	IVS4	AG:G to AA:G	Not determined - preliminary PCR results detect unspliced. Next AG: downstream after 1 or 16nt.	-	I a
ı1-1	GA1	IVS12	AG:G to AA:G	Not determined - next AG:	-	S I 1

				after 1 nt.		
:p4-2	ASA1	IVS6	AG:C to AA:C	Not determined - next AG: after 14 nt.	-	
;-1	AGAMOUS	IVS4	AG:G to AA:G	Not determined - next AG: after 1 nt.	-	
)1-1	APETALA1	IVS3	AG:G to AA:G	Not determined - next AG: after 1 nt.	-	
)1-3	APETALA1	IVS5	Not given	Not determined	-	
:t1-6	DET1	IVS1	AG:G to AA:G	Not determined - next AG: after 1 nt.	-	
)p1-11	COP1	IVS12	AG:G to AA:G	1) splicing to first AG: downstream (1 nt);		
unspliced - 'S 12 ıcluded.	RT-PCR	McNellis et al., 1994				
)p1-3	COP1	IVS12	Not determined	1) unspliced - IVS 12 included;		
wild type, ıefficient)licing.	RT-PCR	McNellis et al., 1994				
:m-3	SHOOT-MERISTEMLESS	IVS1	AG:G to AA:G	Not determined	-	
!8	GNOM	IVS2	AG:A to AA:A	Not determined - next AG: after 4 and 10 nt.	-	
;-4	AGAMOUS	IVS5	AG:A to AA:A	1) Exon 6 skipped;		
activation : downstream :anchpoint/3')lice site in	RT-PCR	Sieburth et al., 1995				

xon 6.						
by-2	SPINDLY	IVS7	AG:A to AA:A	Exon 8 skipped	RT-PCR	
bp1-8	COP1		Not determined	Exon 11 skipped.	-	
bp1-1	COP1		Not determined	Exon 6 skipped.	-	
bp1-2	COP1		Not determined	Exon 6 skipped.	-	

predicted splicing patterns are given in italics.
In many cases where RT-PCR was performed, sequencing of products determined
ıe exact splicing event.