

	+1			
<i>O. sativa</i>	-----MASNAAAAA	VSLDQAVAASAAFSSRKQLRLPAAARGGMRVVRARGRREA	51	
<i>S. halepense</i>	-----			
<i>Z. mays</i>	-----			
<i>B. distachyon</i>	-----MAMAGATT	MAASKAAA	VSLDRAAGPTASSNLSRRLRMPARSARGRLRLRGR	50
<i>TaEPSPS-7A1</i>	-----MAMAAAAT	VASASSSA	VSLDRAAPAHPRRLRMPAARAAHRGAVRLWGPR	50
<i>TaEPSPS-7D1</i>	-----			
<i>TaEPSPS-4A1</i>	-----			
		cTP-cleavage site	exon 2 start	
		↓	↓	
<i>O. sativa</i>	VVVASASSSSVAAPAA	<u>KAEEIVLQ</u>	PIREISGAVQLPGSKSLSNRILLLSALSEGTTVVDN	111
<i>S. halepense</i>	-----	<u>GAEEIVLQ</u>	PIKEISGTVKLPGSKSLSNRILLLAALSEGTTVVDN	44
<i>Z. mays</i>	-----	<u>AGAAEIVLQ</u>	PIKEISGTVKLPGSKSLSNRILLLAALSEGTTVVDN	45
<i>B. distachyon</i>	GGVVLAAASVAAPAAP	<u>AGAAEEVVLQ</u>	PIREISGAVQLPGSKSLSNRILLLSALSEGTTVVDN	110
<i>TaEPSPS-7A1</i>	GAAARATSVAAPAAP	<u>AGAAEEVVLQ</u>	PIREISGAVQLPGSKSLSNRILLLSALSEGTTVVDN	110
<i>TaEPSPS-7D1</i>	-----		-----GTTVVDN	7
<i>TaEPSPS-4A1</i>	-----		-----GTTVVDN	7
<i>O. sativa</i>	LLNSEDVHYMLEALKALGLSVEADKVAKRAVVVGC	GKFPVEKDAKEEVQLFLGNAGTAM		171
<i>S. halepense</i>	LLNSEDVHYMLGALNTLGLSVEADKVAKRAVAVG	CGGKFPVED-AKEEVQLFLGNAGTAM		103
<i>Z. mays</i>	LLNSEDVHYMLGALRTLGLSVEADKAAKRAVVVGC	GKFPVED-AKEEVQLFLGNAGTAM		104
<i>B. distachyon</i>	LLNSEDVHYMLEALKALGLSVEADKVAKRAVVVGC	SGKFPVEKDAKEEVQLFLGNAGTAM		170
<i>TaEPSPS-7A1</i>	LLNSEDVHYMLEALEALGLSVEADKVAKRAVVVGC	GGRFPVEKDAKEEVKLFLGNAGTAM		170
<i>TaEPSPS-7D1</i>	LLNSEDVHYMLEALEALGLSVEADKVAKRAVVVGC	GGRFPVEKDAKEEVKLFLGNAGTAM		67
<i>TaEPSPS-4A1</i>	LLNSEDVHYMLEALEALGLSVEADKVAKRAVVVGC	GGRFPVEKDAKEEVKLFLGNAGTAM		67

Additional file 6. Conservation of the predicted signal peptide cleavage site. Partial amino acid sequences of the deduced TaEPSPS-7A1, TaEPSPS-7D1, and TaEPSPS-4A1 were aligned with EPSPS of other grasses including *O. sativa* [GenBank:AAL06593], *S. halepense* [AEP26126], *Z. mays* [CAA44974], and *B. distachyon* [XP_003557242]. The locations of the chloroplastic signaling peptide cleavage sites predicted by PredSL are underlined. The exon 2 start site and the predicted cleavage site of chloroplastic signal peptide (cTP) are marked.