

Nucleotide sequence of the 5.2 kbp barley chloroplast DNA fragment, containing *psbB-psbH-petB-petD* gene cluster

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This sequence is a 5.2 kbp Pst I - Kpn I fragment of barley chloroplast DNA, containing *psbB*, *psbH*, *petB* and *petD* genes. This genes code for 47 kDa protein and 10 kDa phosphoprotein of photosystem II, cytochrome b6 and subunit 4 of b6/f cytochrome complex, respectively. Sequence showed close similarity to the corresponding maize chloroplast DNA fragment (see Curr.Genet., 1987, 12:69) not only in the coding, but also in the intergenio regions. Deduced amino acid sequences are shown. Supposed N-terminal extensions (alternative splicing) of *petB* and *petD* are shown in small letters.

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CTGCAGTGGCCATGTTTACGGCAGTGGAGCAGAGATAGCCTGATGTCCGGCGGTGCTTTTGCSTTACGCCACCCGCCSTCAGTACTGACAGGAGGGACAGCTGATAGAAACAGA 120
                                psbB ---->
                                M G L P W Y R V H T V V L N D P G R L L S
AGCCACTGGAGCAGCTCAAAAACACCCATCATACTAATCAGTAAGTTGGCAGCATCAATGGSTTGCCTTGGTATCGTGTTCATACTGTCTATTTGAATGATCCGGGTCSATTECTTT 240
V H I M H T A L V S G W A G S M A L Y E L A V F D P S D P V L D P M N R Q G M F
CGTGTCATATAATGCACACAGCTCTAGTTCTGTGGTGGCTGGCTCAATGGCTTTATACGAATTAGCAGTTTTTGTATCCCTCTGATCTGTCTGATCCCAATGTGGAGACAGGTATGT 360
V I P F M T R L G I T D S W G G W S I S G G T V T M P G I W S Y E G V A A T H I
TCSTAATCCCTTCATGACTCGTTTAGGAATACGGAATCGTGGGGTGGTTGGAGTATTTCCAGGAGGACTGTAAACAAATCCGGGTATTTGGAGTATGAGGTGTGGAGCTACGCATA 480
V F S G L C F L A A I M H M V Y W D L E I F S D E R T G K P S L D L P K I F G I
TTGTGTTTCTGGCTGTGTGTTCTTGGCAGCAGTCTGGCATTGGGTATATTGGAGCTAGAAATATCTCTGATGAGCGGACGGAAACCCCTCTTTGGATTTGCCAAGATCTTTGGAA 600
H L F L A G V A C F G F G A F N V T G L Y G P G I W V S D P V G L T G K V Q A V
TTCAATTATTCTTCAGGGGGTGGCTGTGCTTTGGCTTTGGGGCATTTCATGTAAACGGTTTGTATGGTCCCTGGGATATGGGTATCCGATCTTATGGACTAAGCTGGAAAGTACAGCTG 720
N P A W G A E G F D P F V P G G I A S H H I A A G T L G I L A G L F H L S V R P
TAATCCAGCTGGGGTGGAGAGSTTTTGTATCTTTTGTCCGGGGGAATAGCTCTCATCATATATGCTGCGGGTACATTGGGTATATTAGCGGGCTTATTCATCTTAGTGTCCGTC 840
P Q R L Y K G L R M G N I E T V L S S S I A A V F F A A F V V A G T M W Y G S A
CGCCTCAAGCTCTATATAAGGATTACGATATGGCAATATGAAAGTACTTCCAGTAGTATCGTCTGCTGTTTTTTTTGCAAGCTTTCGATGTTCTGGAAGTATGTTGGTATGGTCCAG 960
T T P I R A E L F G P T R Y Q W D Q G V F Q Q E I Y R R V S N G L A E N L S L S E A
CAAGCAGCCCAATCGAATTATTTGGGCTACTCGTTATCAGTGGGATCAGGGATACTTTCAGCAAGAAATATATCGAAGAGTTAGCAATGGTTAGCCGAAATCTAGTTTATCAGAG 1080
W S K I P E K L A F V D Y I G N M P A K G G L F R A G S M D N G D G I A V G W I
CTTGGTCTAAGATCCGAAATATAGCTTTTATGATATATGGTAAATATCCGGCAAAAGGGGATATTCCAGAGCGGGCTCAATGGACATGGGGATGGGAATAGCTTGTGGATGGT 1200
G H P V F R D K E G R E L F V R R M P T F F E T F P V V L V D E E G I V R A D V
TAGGACATCCGCTCTTAGAGATAAAGAGAGCAGTCACTTTTGTACCCSSTATGCTACTTTTTTGAACAATTTCCGGTTGTTTGGTAGATAGGGAGGGAATGTTTAGAGCGGACG 1320
P F R R A E S K Y S V E Q V G V T V E F Y G G E L N G V M Y S D P A T V K K Y A
TTCTTTTAGAGAGCAGAAATCCAAATATAGTGTGAAACAGTAGGCTACGGTGGAGTCTATGTTGGCAGAACTAATGGAGTAAATATTCTGATCTCTACTCTTAAAAAATATG 1440
R R S Q L G E I F E L D R A T L K S D G V F R S S P R G M F T F G H A T F A L I
CGAGCGCTCAATAGGGGAATTTTGAATAGACCGGCTACTTTGAAATCCGATGGTGTTTTTCCAGCAGCTCAGGGGGTGGTGTCTTGGTCACTTTTGGTCACTACTCTTGGCTTGG 1560
F F F G H I M H G A R T L F R D V F A G I D P D L D A Q V E F G T F Q K V G D P
TCTCTTTTTCCAGCAGATTTGGCATGGCTAGAACATGTTCCGAGATGTTTTTGCCTGATATTGATCCAGATTTGGATGCTCAAGTGGATTTGGAAATCCAAAAGTGGGAGATC 1680
T T K K Q A V ter
CAACTCAAGAAAGCAGGCTGTGATACACATGTTATGATGATCTTCACTCTCTTTTTGATTTGACATCCCACTCTTCTTTGACTCTTTTCTTTATATGGAAATCT 1800
CCCAATGCAAAATGATAGTGTGGAGTATAAATGTTAAATAAACACAGTCAATCTATGGAGCATGGTTTATACGTTCCCTTTAGTTTCCAGCTTAGGGAAATTTTTTCCCT 1920
ATCTCTCCAGAGACCACTTAGGTTCCACCACTCCAACTAAGAAATAAATAATTCATTTAGTAAAGAGTCTCCAGATAGGGGACCTTCACTAATATAGTCTCCGSTGTT 2040
TTGAAATGGATCTCTAATTTGATGGAGGGTTGCCAAACCGGTTATATAGGCATACCCAGTAAAGCTTACAAGTAAACAGATATGGAGATGGCAGTAAAGTGTCTGTTCCATTTT 2160

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