

## SUPPLEMENTAL INFORMATION

### Quantification Peroxisome Abundance in Plants Using Small Fluorescent Probe N-BODIPY

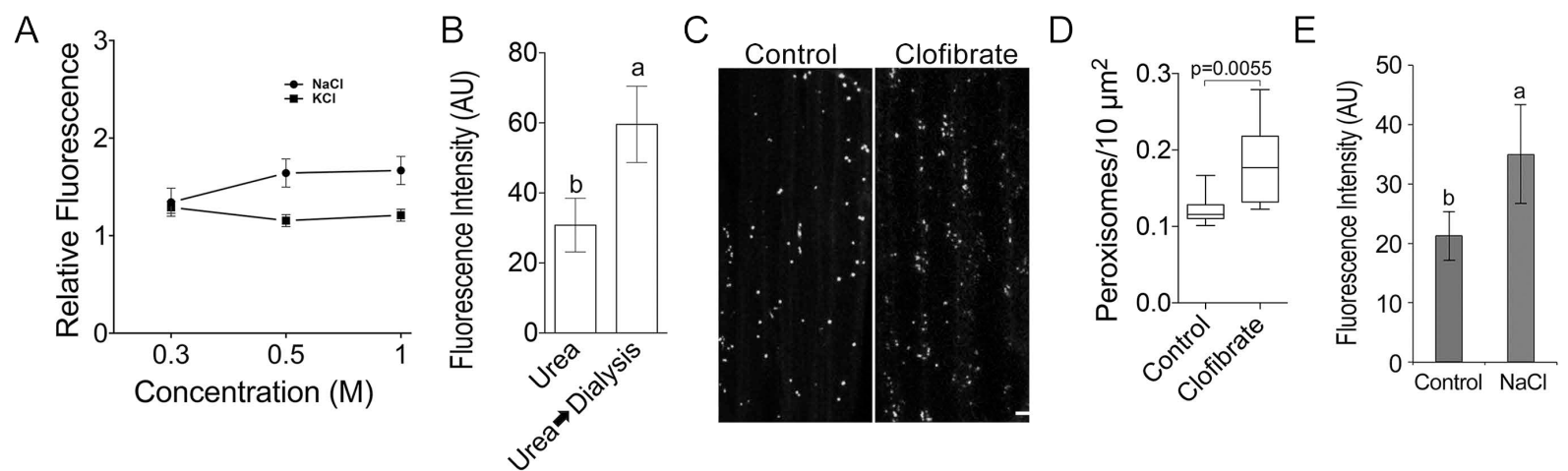
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**Supplemental table 1. List of genes used for phylogenetic analysis.**

Abbreviation	Name	Group	Protein name	Accession number
At	<i>Arabidopsis thaliana</i>	Angiosperms	PEX11A PEX11B PEX11C PEX11D PEX11E	AT1G47750 AT3G47430 AT1G01820 AT2G45740 AT3G61070
Chr	<i>Chlamydomonas reinhardtii</i>	Chlorophyta (Green algae)	ChrPEX11	gi 159471834
Dm	<i>Drosophila melanogaster</i>	Invertebrates	PEX11	gi 19922346
Gs	<i>Galdieria sulphuraria</i>	Rhodophyta (Red algae)	GsPEX11	gi 545712326
Hs	<i>Homo sapiens</i>	Vertebrates	PEX11A	gi 4505717
Hs	<i>Homo sapiens</i>	Vertebrates	PEX11B	gi 296317239
Hs	<i>Homo sapiens</i>	Vertebrates	PEX11C	gi 18087833
Kf	<i>Klebsormidium flaccidum</i>	Charophyta	KfPEX11A KfPEX11C	gi 971519848 gi 971518404
Ot	<i>Ostreococcus tauri</i>	Chlorophyta	OtPEX11.1	gi 693496001
Pp	<i>Physcomitrella patens</i>	Bryophyta (Mosses)	PpPEX11A PpPEX11B1 PpPEX11B2 PpPEX11B3	gi 168027834 gi 168005036 gi 168041391 gi 168008697
Ps	<i>Picea sitchensis</i>	Gymnosperm	PsPEX11C PsPEX11D	gi 116791870 gi 116779031
Sm	<i>Selaginella moellendorffii</i>	Lycopodiophyta	SmPEX11A SmPEX11B	gi 302808231 gi 302780655
Vc	<i>Volvox carteri f. nagariensis</i>	Chlorophyta	VnPEX11	gi 302848496

**Supplemental Table 2. List and sequences of primers.**

Primer Name	Sequence
SOS1_1_for	TCATGGCGATTTCTTTTCTG
SOS1_1_rev	TCCCAGTAAGTTGCTTGCA
SOS1_2_for	GCTACATTTCTGCTGCGTTTC
SOS1_2_rev	ATCAAGTCGCACAGATATGGC
LBb1	GCGTCGACCGCTTGCTGCAACT
ATPEX11A-F	TGCTTGGGCTGAATTGGTTG
ATPEX11A-R	CTCGATCGTCGAAGCAACAC
ATPEX11C-F	GCTTGGCAGGACTGGGATTT
ATPEX11C-R	GCTCCCCAACCTCAACCAAG
At EF1a.F	TGGTGACGCTGGTATGGTTA
At EF1a.R	TCCTTCTTGTCCACGCTCTT



**Supplemental Figure 1. Assays of N-BODIPY fluorescence and peroxisome proliferation.**

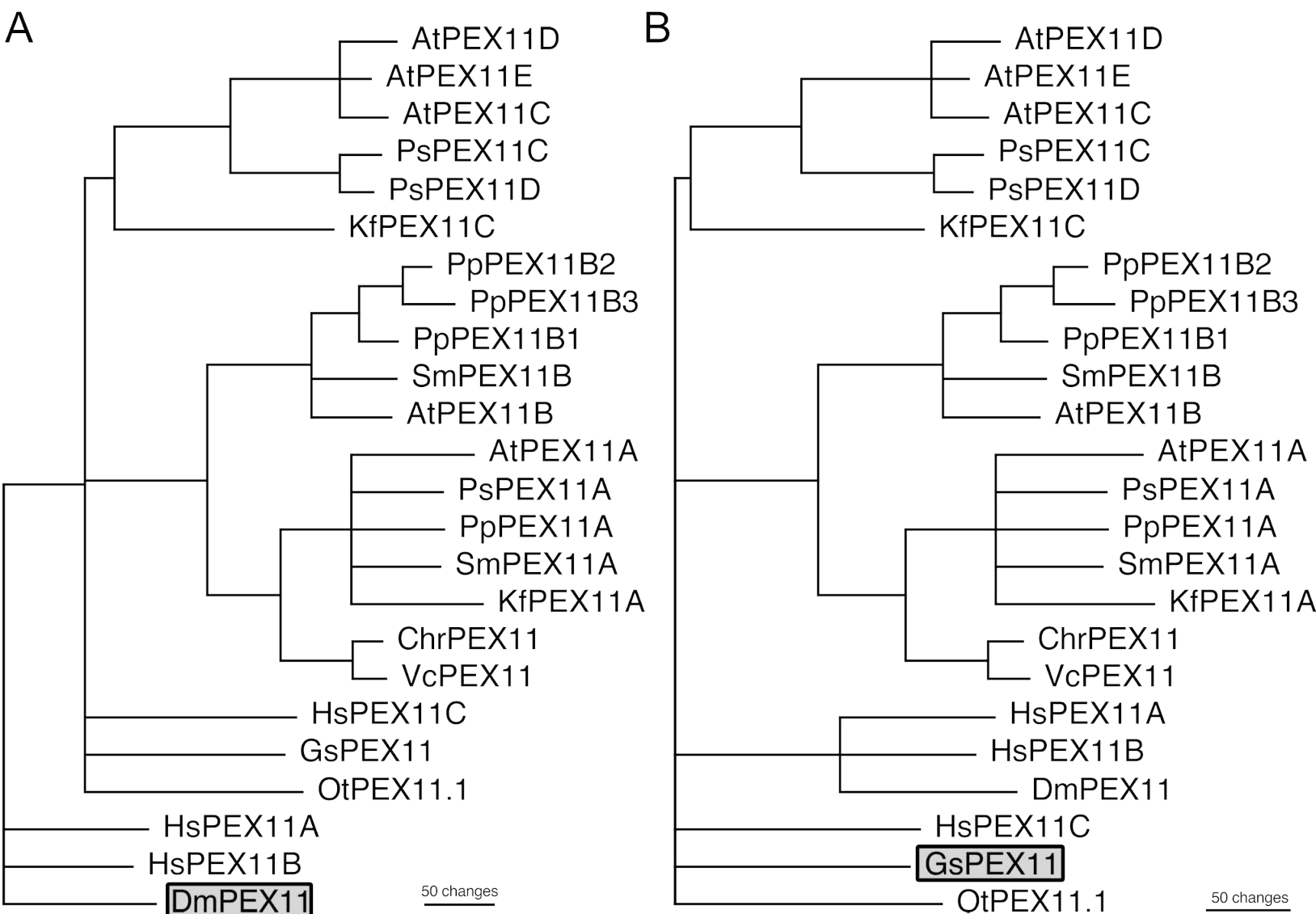
**A**, Effect of NaCl (circles) or KCl (squares) on N-BODIPY fluorescence in protein extracts. Error bars show mean values of three biological and three technical repeats  $\pm$ SD. The difference between the measurements was not statistically significant (one-way ANOVA; N=6). Values were normalized by fluorescence values of the protein extract in water.

**B**, Recovery of N-BODIPY fluorescence following denaturation by 4 M urea. The total protein extract was supplemented with 4 M urea (Urea) and then dialyzed against distilled water for 16 hrs (Urea Dialysis). Error bars show mean values of three technical repeats  $\pm$ SD.

**C**, Effect of clofibrate on peroxisomes. Fluorescence microscopy images of root epidermis cells in the differentiation zone of *A. thaliana* seedlings expressing CSY3-GFP. Scale bar 10  $\mu\text{m}$ .

**D**, Effect of clofibrate on the density of peroxisomes (calculated per 10  $\mu\text{m}^2$ ) in epidermis cells. Error bars show mean values of ten biological repeats  $\pm$ SD; p-value indicate the significance of the difference between treated and untreated sample in the unpaired t-test with Welch's correction (n=20).

**E**, Fluorescence of N-BODIPY in total protein extract from *Arabidopsis* leaf 5 hours after irrigation with water or 0.3 M NaCl. Error bars show mean values of five biological repeats  $\pm$ SD. The difference between mean values denoted by the distinct letter is statistically significant (P<0.05, t-test).



**Supplemental Figure 2. Phylogenograms of PEX11 genes.**

**A**, *Drosophila melanogaster* PEX11 was used as an outgroup.

**B**, *Galdieria sulphuraria* PEX11 was used as an outgroup.

The outgroup sequences are highlighted.