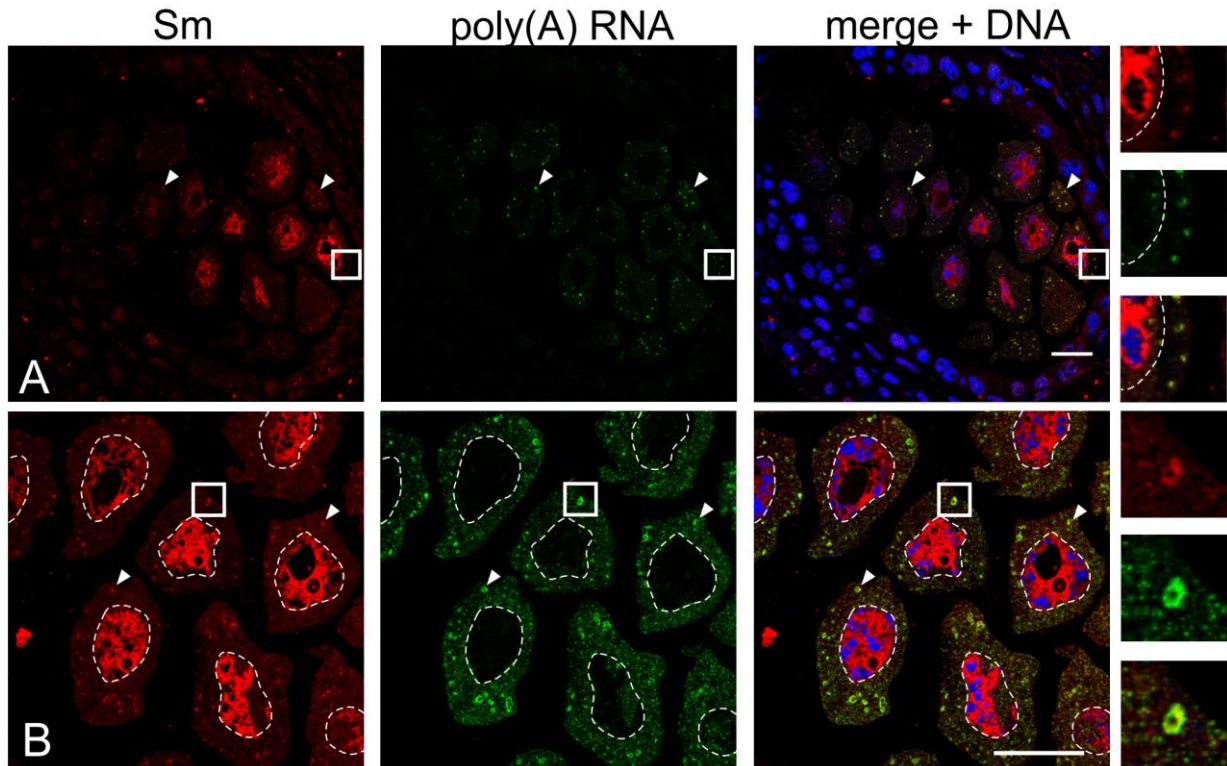
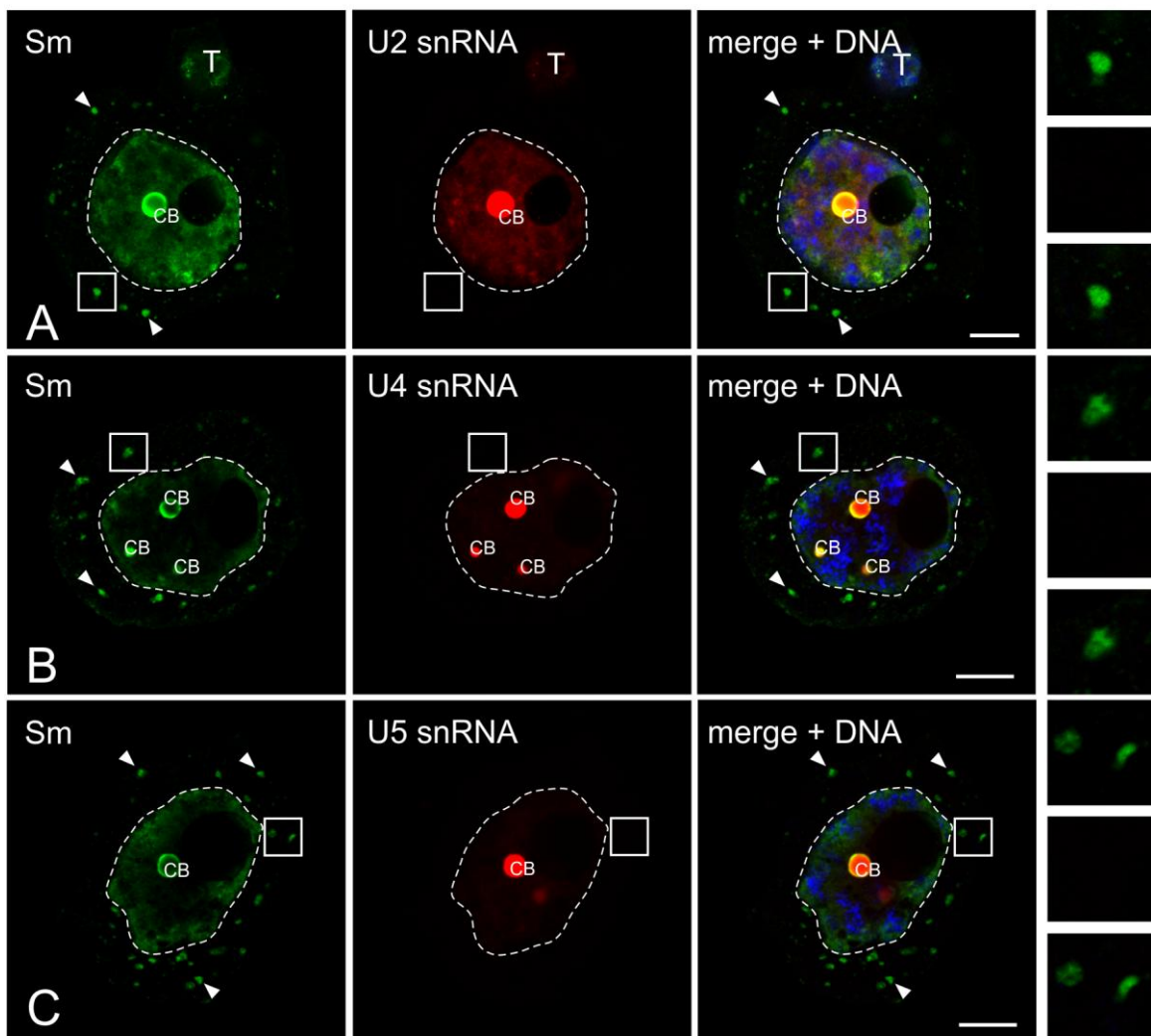


**Supplementary Fig. 1** Localization of the Sm proteins and poly(A) RNA on semithin sections of anther *Larix decidua* Mill.



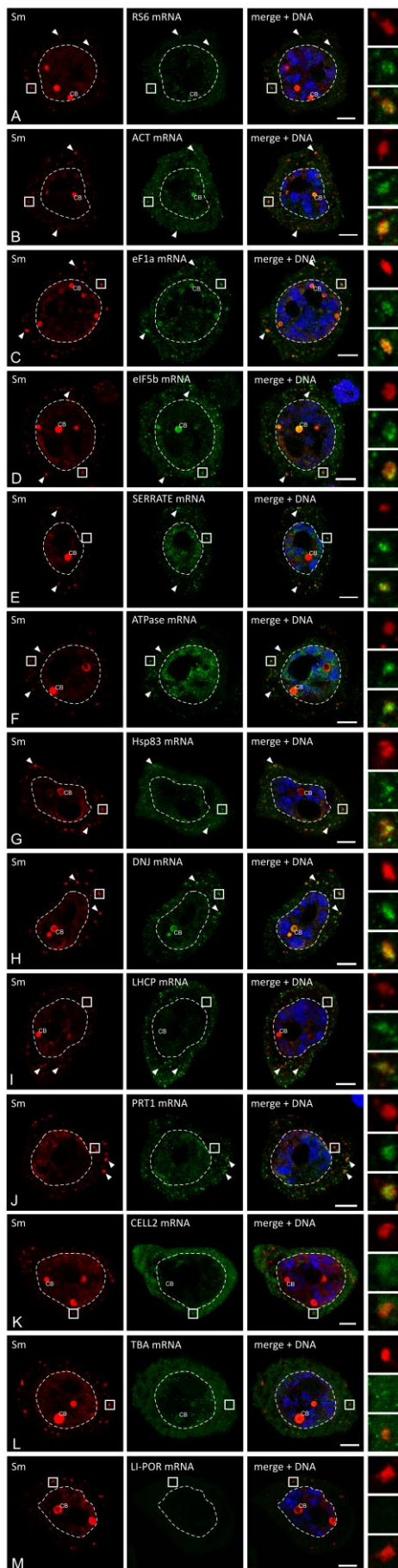
In the cytoplasm, visible colocalizing fluorescent foci (arrowheads). Bar - 25  $\mu$ m.

**Supplementary Fig. 2 Analysis of Sm protein distribution during colocalization with selected splicing U snRNAs.**



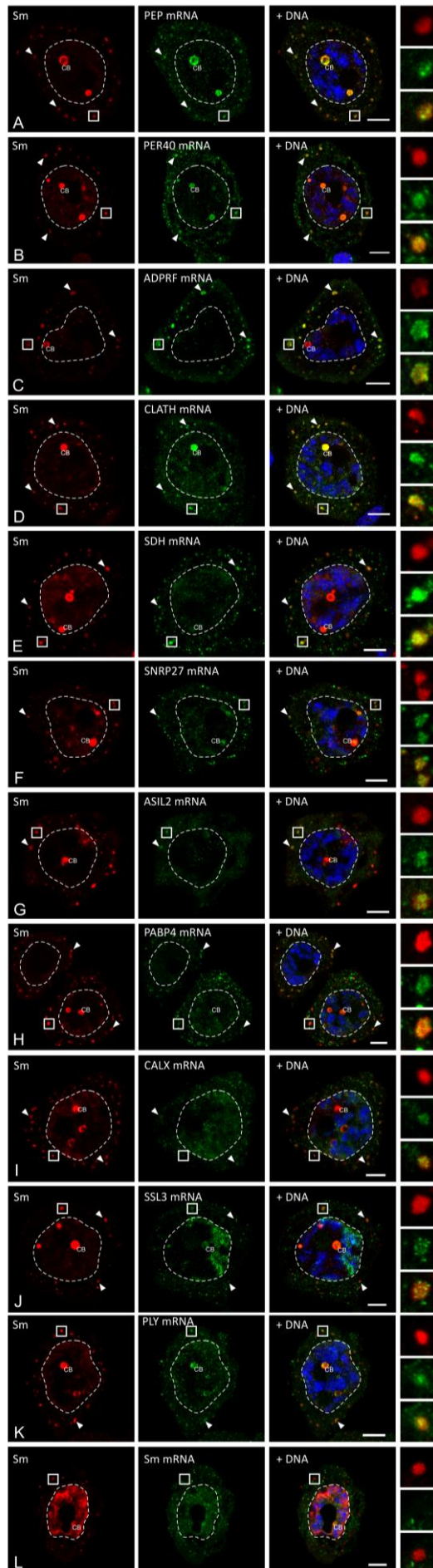
**A**, U2 snRNA; **B**, U4 snRNA; **C**, U5 snRNA. There was no accumulation of U snRNAs in the S-bodies (arrowheads). The right panel represents the magnification of the cytoplasm, which is marked with a square. CB - Cajal body. Bar - 10  $\mu$ m.

**Supplementary Fig. 3**  
**Localization of mRNA precipitating with Sm proteins *in situ*.**



The results presented represent the stages of the IV - VI poly(A) RNA cycle. Numerous clusters of mRNA that colocalized with Sm proteins (caves) are visible in the cytoplasm. The right panel represents the magnification of the cytoplasm, which is marked with a square. RS6 - small ribosome subunit protein S6; RL 37a - large ribosome subunit protein 37a; eF1a - translation factor 1a; eIF5b - translation factor 5b; ATPase - ATPase; KIN12b - kinesin 12b-like protein; LHCP - chlorophyll binding protein ab; NAD7 - NADH 7 dehydrogenase subunit, PRT1 - ubiquitin-dependent ligand PRT1; ACT - actin; Hsp83 - heat shock protein 83; DNJ - protein with DNaj domain; and CB - Cajal body. Bar 10  $\mu$ m.

**Supplementary Fig. 4**  
**Localization of the reference mRNAs and Sm proteins *in situ*.**



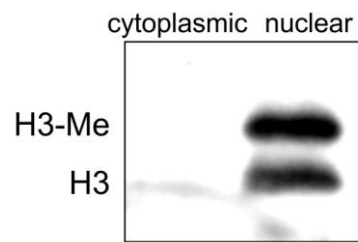
The results presented represent the stages of the IV - VI poly(A) RNA cycle. Numerous clusters of fluorescence showing colocalization with the Sm proteins (caves), can be seen in the cytoplasm. The right panel represents the magnification of the cytoplasm, which is marked with a square. PEP - plastid RNA polymerase; PER40 - peroxidase 40; ADPRF - ADP ribosylation factor; CLATH - clathrin; SDH - succinate dehydrogenase; SNRP27 - small nucleotide ribonucleoprotein 27; ASIL2 - transcription factor ASIL2; PABP4 - poly(A) 4 binding protein; CALX - calnexin; SSL3 - a protein similar to stictosidine 3 synthase; PLY - pectin lyase; and CB - Cajal body. Bar 10  $\mu$ m.



**Supplementary Fig. 5 Real-time RT PCR primers and probe sequences used for *in situ* hybridization.**

Name	Sequence (5' – 3')	Labeling
<b>PCR</b>		
F_U2 snRNA	ATACCTTTCTCGGCCTTTTGGC	-
R_U2 snRNA	CAGGCTNGTGCTNTAGTGCAAC	-
F_5S rRNA	GTGCGATCATACCAGCGTTA	-
R_5S rRNA	CCCATCCCAGCACTACTCTA	-
<b><i>in situ</i> hybridization</b>		
poly(A)	T(T) <sub>29</sub>	Cy3
U1 snRNA	TCAGTGGGAGATGCTAGGTAGAC	Cy3
U2 snRNA	ATATTAAACTGATAAGAACAGATACTACACTTG	Cy3
U4 snRNA	GGAAATAGTTTTCAACCAGCAATAGAC	Cy3
U5 snRNA	TATCTTTAGTAAAAGGCGAAAGAATAGTT	Cy3
5S rRNA	GAGGTCACCCATCCTAGTACTACTCTC	Cy3
RS6 mRNA	TTCCTTTGCAGAGTCAATGGTGTCAACAAGCC	DIG
RL 37a mRNA	TGGCCATTACTCTTCTTACCTTCTTCAGCTT	DIG
eF1a mRNA	TGGTGACCTTTGCACCAGTGGGATCCTTCT	DIG
eIF5b mRNA	TCTTCACACCAAGTTCATCTGCAAGCTCACGAG	DIG
SERRATE mRNA	GTTCCATAGTAATCCAATCCATGAACTCGCCA	DIG
ATPase mRNA	ACCATGTAGTGTCTTTGAGCATGTGCCATT	DIG
KIN12B mRNA	TTCATTGACAATTGCCTTATTCTGTATCGCCTT	DIG
LHCP mRNA	AACGCAGCCAAGCGCCCCAACATGGCCCATCT	DIG
NAD7 mRNA	TCCATGGATAGTTTCATTTGACATCGTGATGG	DIG
PRT1 mRNA	TGTTGAGAGAAGCCTAATCAGACCCGTGTA	DIG
ACT mRNA	TCTTCTGGAGCAACTCGAAGCTCATTGTAGA	DIG
Hsp83 mRNA	ACAGTCATAACACCACCTGCTGTCTCGAGAC	DIG
DNJ mRNA	TCTTTAAGGGCATCCTCTCCATACTGGTCA	DIG
PEP mRNA	TGTAACCCGTGCATAAGGTCCACTCGAACGTGC	DIG
PER40 mRNA	TGAATGTTGCACAACGTGCCTTTCCTATTGTA	DIG
ADPRF mRNA	TCATCCCTTGCTTCTACAACACGGTCTCTGT	DIG
CLATH mRNA	TGCAAGATTCACAGCAAGCTCTAGATTATTGAGC	DIG
SDH mRNA	ACTTGTTTCGTCTTTCATAGACCTCCCCACCAAT	DIG
SNRP27 mRNA	TCGGAATCCCCAATTTCTTCATCATCTC	DIG
ASIL2 mRNA	TCCAGATCCATCATCTGCTGATGCTTCACCA	DIG
PABP4 mRNA	ACTCCATAAAGCCATAGCCCTCTGACTGTCCA	DIG
CALX mRNA	TCGTAGCTTCAGGATCGTCAATCTCCTCGG	DIG
SSL3 mRNA	ATCGGAGTTCTACAACAGTCTATTGCAACC	DIG
PLY mRNA	TCGCAACGCCAGCAATCATCAATGGGGTTACCAGT	DIG
Sm mRNA	AGGAGTTGACATAAGTATGAATACACATCT	DIG
	CTATTCACCTTTGGATTTCTAAGAACAATAAT	
	GTATATAATTTCTTCTTCAAAAACACTTTTCTCT	
	AATACAAGGTTTCATGTACTCATCAAATC	
CELL2 mRNA	TTCCGATTGCAGAGAGTCACTGTAAGCGCCT	DIG
TBA mRNA	ACTGTTGGTGATCTCGGCTACCGAGAGCT	DIG
LI-POR mRNA	AGGTGTCAATATGATCAGATTGGGACCTTCCTC	DIG

**Supplementary Fig. 6 Validation of the *Larix decidua* anther cell fractionation method.**



Identification of histone H3 in the cytoplasmic and nuclear fractions by Western blotting. No signal was detected in the cytoplasmic fraction.