Nuclear activity of sperm cells during *Hyacinthus orientalis* L. *in vitro pollen tube growth*

Krzysztof Zienkiewicz, Anna Suwiñska, Katarzyna Niedojadlo, Agnieszka Zienkiewicz, and Elzbieta Bednarska

Supplementary material

Fig. S1. Effect of cycloheximide on hyacinth pollen tube morphology and nuclei behaviour.

(Figs a, b, and c–transmitted light images, Figs. a', b', and c'–fluorescence images of pollen tubes showed on Figs. a, b, and c stained with propidium iodide). In comparison to the control pollen tubes (a–a'), the treatment with cycloheximide after 3 h (b–b') and 9 h (c–c') of pollen tube growth caused numerous structural and physiological abnormalities. Strong inhibition of growth and shape deformations are observed. Disturbances in nuclei movement and arrest of second pollen mitosis occurred in all the pollen tubes growing on cycloheximide containing medium. VN, vegetative nucleus; GN, generative nucleus; on a-a' bars = 50 μm and on b-b' and c-c' bars = 10 μm.

Fig. S2. TMG snRNA localisation in hyacinth pollen tube before generative cell division (8 h of growth). The intense and homogeneous signal is present in the vegetative nucleus. In the generative nucleus, numerous fluorescence spots are present. VN, vegetative nucleus; GN, generative nucleus; bars = 10 μm.

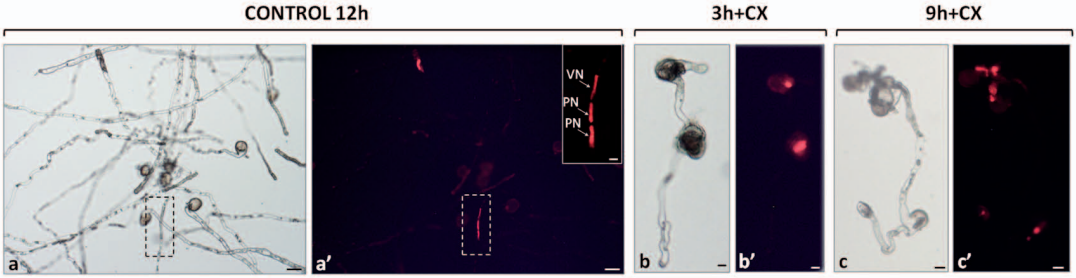
Fig. S3. Immunolocalisation of SC35 splicing factor in hyacinth pollen tube before second pollen mitosis (8 h of growth). The fluorescence is present in the vegetative and generative nuclei. Strong and uniformly distributed signal is observed in the vegetative nucleoplasm, whereas in the generative nucleus, numerous fluorescence spots are present. VN, vegetative nucleus; GN, generative nucleus; bars = 10 μm.

Fig. S4. Detection of U2 snRNA in hyacinth pollen tube by FISH. In both the sperm nuclei and in the vegetative nucleus, an intense signal is present. In the pollen tube cytoplasm, labelling is observed. VN, vegetative nucleus; SN, sperm nucleus; bars = 10 µm.

Fig. S5. Magnification of the area marked with the dashed line on Fig. 5B1. VN, vegetative nucleus; SN, sperm nucleus; bars = 10 µm.

Fig. S6. Magnification of the area marked with the dashed line on Fig. 6B1. VN, vegetative nucleus; SN, sperm nucleus; bars = 10 µm.

Fig. S7. Magnification of the area marked with the dashed line on Fig. 6F1. VN, vegetative nucleus; SN, sperm nucleus; bars = 10 µm.



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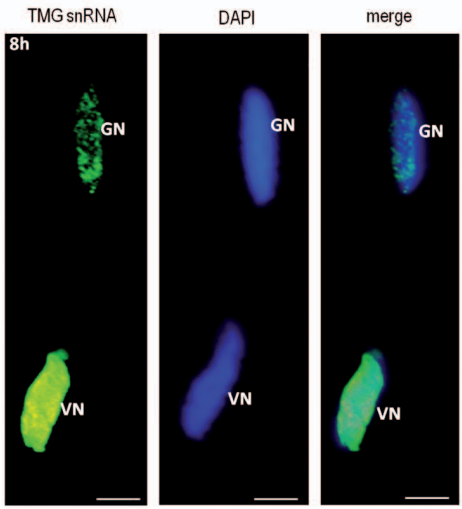

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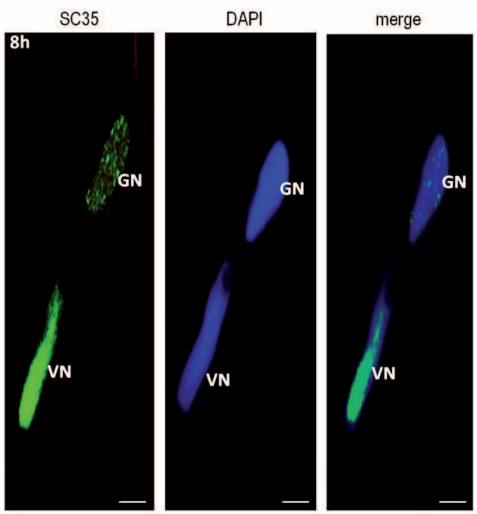

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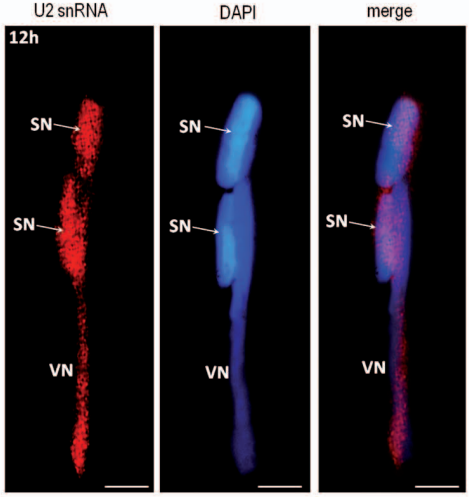
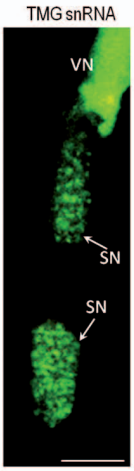
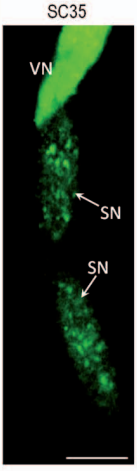


S4

S5



S6



S7