Supplementary Fig. S1. Production of superoxide (O$_2^•–$) in liquid-cultured Sphagnum capillifolium in response to treatment with 0.5 mg ml$^{-1}$ chitosan (CHN). The arrow indicates the time point of CHN addition. Superoxide measurement was based on chemiluminescence of the luciferin analog MCLA. Error bars indicate standard deviation (n=3).

For the experiment, axenic gametophyte tissue of “small red peat moss” Sphagnum capillifolium (Ehrh.) Hedw. (family Sphagnaceae) (kind gift from Prof. Liisa Simola, University of Helsinki), was grown in 250 ml Erlenmeyer flasks containing 70 ml of modified Y-medium [2.7 mM KCl, 1.5 mM KH$_2$PO$_4$, 0.8 mM MgSO$_4$, 1.8 mM CaCl$_2$, 2.4 mM NH$_4$NO$_3$, 90µM MnSO$_4$, 90 µM FeSO$_4$, 180 µM ethylenediaminetetraacetic acid disodium salt (Na$_2$-EDTA) with 1 ml l$^{-1}$ of micronutrient solution (1.5 g boric acid, 0.15 g ammonium molybdate, 0.1 g Sequestrene Na$_2$Cu, 0.1 g Sequestrene Na$_2$Co and 0.3 g Sequestrene Na$_2$Zn l$^{-1}$), pH 5.9 adjusted with NaOH and 10 g l$^{-1}$ sucrose] (Simola, L. 1977. The tolerance of Sphagnum fimbriatum towards lead and cadmium. Ann. Bot. Fenn. 14:1-5). The cultures were grown in a growth chamber (Model 3755, Forma Scientific, Marietta, OH, USA) at 23°C (photoperiod 12 h, light intensity 60 µmol m$^{-2}$s$^{-1}$).

Superoxide (O$_2^•–$) production in liquid moss culture medium was measured by chemiluminescence of a luciferin analog MCLA [2-methyl-6-(p-methoxyphenyl)-3,7-dihydroimidazo(1, 2- )pyrazin-3-one] (Sigma, St. Louis, MO, USA). Three or four small shoots (gametophytes) of S. capillifolium were placed in the cuvette (Sarstedt No. 68.750; Sarstedt, Nümbrecht, Germany) containing 1.0 ml of modified Y-medium and incubated in the dark at 23 °C for 30 min before starting the measurements. First, 1 µM MCLA (final concentration) was added to the cuvette for background measurement, followed by addition of CHN. Chemiluminescence was measured for 5 seconds at each time point using Luminoskan TL Plus luminometer (Thermo Labsystems, Waltham, MA, USA).