Supplementary material I:

In this study, the morphological responses of rice SCCs to treatment with 100 µM ABA were also examined. The growth pattern of rice SCCs was monitored. The growth pattern of normal rice SCCs (untreated), SCCs treated with ABA (100 µM), SCCs treated with ethanol (100 µl; solvent only control) and SCCs treated with MS media (100 µl) were monitored for a period of 16 days. The cells were subcultured into fresh medium before starting the growth curve experiment and three replicates (separate flasks for each sample point) were used for each treatment. The fresh weight of an aliquot of cells at each time point was measured and the data is presented in the figure below. Normal SCCs, SCCs treated with ethanol and SCCs treated with MS media showed a similar linear pattern of growth. A short lag phase was observed before growth for all the above cultures between 0 and 4 days. These cells entered an exponential growth phase after 5 days. The period between 5 and 12 days was established as the mid-log phase since the normal SCCs showed a characteristic exponential growth. Hence, for all further experiments, normal SCCs in their mid-log phase of growth were used. In contrast, the initial growth rate of the cells was inhibited by exposure to 100 µM ABA, with a delay of approximately 7-8 days observed, before the cells began increasing in biomass. Notably, the subsequent growth rate of these ABA-treated cells was more rapid than control cells at a similar time, so that, by 18 days, the overall biomass of control and ABA-treated cells was very similar. This pattern of initial growth inhibition, followed by a more rapid rate of growth was similar to that observed previously, in wheat, winter rye and bromegrass SCCs 1-3.

The initial reduction in growth in these systems was attributed to a decrease in cell water potential following ABA treatment 1, 4. In these published studies, this reduction in the cellular water potential also correlates with ABA-treated cells displaying an increased freezing tolerance
This observation is also in agreement with reports that SCCs treated with ABA undergoing changes in their osmotic potential which is proposed to be one of the factors contributing to freezing tolerance in suspension cells \(^1,^5\). In one study conducted on navel orange and carrot SCCs, it was suggested that the reduced growth rate of ABA-treated cells was due to a decrease in the water potential followed by a decrease in the osmotic potential of cells which may have been caused by the accumulation of osmoregulatory solutes \(^2\).
Supplementary Figure I:

![Graph showing fresh weight (g) over time (days)]


