

### **Abstract**

Recent research suggests that cell cycle checkpoints (i.e.G1/S and G2/M) may interface between life and death for plant cells, providing exit points for cells from the cell cycle into programmed cell death (Francis 2003.Advances in Botanical Research 40:143-191). We have synchronized the cell cycle of culture *Arabidopsis* cells in an attempt to develop a model plant system suitable for the isolation of new and novel regulators of senescence. Aphidicolin treatment blocks the cell cycle at G1 by inhibiting the replication form of DNA polymerase. Simple washing of the cells with aphidicolin-free media releases the cells from the block enabling cell division to continue and subsequent life/death decisions to be made en masse. We have found it possible to manipulate cell death in these synchronized cultures, which provides us with highly homogeneous cell death suitable for molecular analysis.