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Meeting abstract

Caspase-like activities and UV-induced programmed cell death in *Arabidopsis*

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A very important goal is to determine which molecular components may be used in the execution of programmed cell death (PCD) in plants, which have been conserved during evolution and which are plant specific. Using *A. thaliana* we have shown that UV radiation can induce apoptotic-like changes at the cellular level and that an UV experimental system was relevant to the study of PCD in plants. UV induction of PCD requires light and a protease cleaving the caspase substrate Asp-Glu-Val-Asp (DEVDase activity) is induced within 30 minutes and peaks at one hour. This DEVDase appears related to animal caspases at the biochemical level, being insensitive to broad-range cysteine protease inhibitors. In addition, caspase1, caspase-3 inhibitors and the pancaspase inhibitor *p35* were able to suppress DNA fragmentation and cell death. These results suggest that a YVADase (Tyr-Val-Ala-Asp) activity and an inducible DEVDase activity are possibly mediating DNA fragmentation during plant PCD induced by UV overexposure. Progress is being made towards the biochemical characterisation of the proteases involved.

References

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