

Cytolocalization of proteasomes in potato cells

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Proteasomes, ubiquitous small cytoplasmic ribonucleoprotein (ScRNP) complexes of defined biochemical and morphological structure, were described in plants for the first time by Kremp et al., *Exp. Cell Res.* 166, p. 353, 1986. These 22S-RNPs of extraordinary stability could also be isolated by gradient centrifugation and FPLC from *Phaseolus radiatus* and *Solanum tuberosum* (Schliephacke et al., *J. Europ. Cell Biol.*, in press). The distribution of proteasomes in suspension culture cells of potato tubers was investigated by direct immunofluorescence using FITC-labelled polyclonal antibodies (from rabbit) against proteasomal proteins. As a control the serum of a non-immunized rabbit was used. Potato cells were sedimented by centrifugation, fixed, treated with cell wall degrading enzymes and then transferred to poly-L-lysine covered slides. The cells were incubated with FITC-labelled antibodies. Proteasomal antigens were detected in the nucleus and the cytoplasm. The compartments showed a different immunofluorescent pattern. A strong fluorescence was observed in the nucleus (nuclear membrane) whereas the fluorescence in the cytoplasm was less intensive. We suggest, that the proteasome distribution might reflect the existence of different proteasome populations accomplishing different functions in the cell.