

## Extracellular localization of napin in the embryogenic tissues of *Brassica napus* spp. *oleifera*

### ABSTRACT

Napin, a storage protein, has been reported to be transcribed abundantly during the pre-embryogenic stage and associated with the induction of *Brassica napus* secondary embryogenesis. In this study, we studied the distribution pattern of napin in the winter oilseed rape embryogenic tissue in comparison to that of the non-embryogenic tissue using the indirect immunofluorescence localisation coupled with the ultrastructural immunogold labelling techniques. Immunolocalisation studies revealed that the extracellular matrix layer outside the outer epidermal cell wall of *B. napus* embryogenic tissues contained napin. This is the first study to report the extracellular localisation of napin. In addition, we have also further characterised the expression pattern of *Eg1* that encodes for napin in the *B. napus* embryogenic tissue.

**Keyword:** Napin, *Brassica napus*, Oilseed rape, Immunolocalisation, Embryogenic tissue