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Czech J. Genet. Plant Breed.

**M.E., Castro A.J.,
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**Pseudo-embryogenic
structures in anther
and isolated
microspore cultures *in
vitro*: a cautionary
guide**

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This review describes sources of structures of non-microspore origin observed in anther and microspore cultures. Various characteristics of these structures may cause a wrong diagnosis of these structures as embryos or cell/tissue clusters of microspore origin. Here we suggest such structures to be

named as pseudo-embryogenic structures. The introduction of pseudo-embryogenic structures and their origins could be helpful to distinguish them from true microspore-derived structures. Prompted by certain environmental cues, somatic cells existing as a contamination in immature pollen (microspores) cultures can lead to the formation of 'pseudo-embryos' commonly known as embryoids. The pseudo-embryogenic structures may be classified in the following groups: (i) pseudo-star-like structures; pseudo-multicellular structures; (ii) pseudo-embryos with pseudo-suspensors; (iii) contaminating bacteria appearing as callus colonies; (iv) calli and embryos of somatic origin; (v) giant tetrad-like structures; (vi) anther wall cells. The exact origin of these structures is discussed in this paper, and some recommendations are proposed in order to avoid misinterpretation.

Keywords:

anther culture; microspore embryogenesis; pseudo-embryogenic structures

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