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The plant embryogenesis by Seolncr

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Requires fine regulation of many elements of development , leading to the development of basic morphologies (morphogenesis), the establishment of functionally organized structures (organogenesis) and differentiation tissue. Additionally, you must generate the elementary structures of active growth in modular systems that are plants, ie the meristems , as well as the functions necessary for the further survival of the embryo , as are the quiescence and germination .

During embryogenesis, the plant has to overcome several stages. One is to establish the body plan basic sporophyte , which is restructured when it breaks dormancy. To set this plan, initially given radial divisions are 3 basic tissue systems, the dermal, the vascular basement and then proceed to the axial divisions that form the apical (shoot)-basal (root). The second is to reserve for meristematic tissue postembrionarias structure formation and finally to establish food reserves for the embryo until it becomes autotrophic.

The brown algae are a model system that is used because unlike angiosperms have external fertilization and does not have the multiple layers of fabric. With the first asymmetric division of the embryo of brown algae establishing polarity, this division produces a smaller cell that forms the rhizoid which is the counterpart to the root and is the structure that anchors the rest of the plant, the other cell is generates the largest and Tallus which is the main body of the sporophyte. The sperm entry point sets the polarity of the plant, so this is where the fixed input terminal rhizoid apical-basal axis, which is perpendicular to the plane of the first division of the plant. The F-Auxin accumulates in the terminal rhizoid. However, the polarity setting can be overridden by gravity or light stimuli that would establish a new position for cell division. After the establishment of polarity, secretory vesicles move toward the rhizoid end of the zygote, which contain material that is rhizoid begins to develop and form a cell wall with a different composition of macromolecules. Maintain the original polarity depends on information in the cell wall.

In angiosperms, the establishment of body plan also begins with an asymmetric division. The first division gives rise to a basal cell and a terminal, the terminal cell gives rise to the embryo and the cell basal, which is the that is formed nearer the micropyle, gives origin to the suspensor, which will serve as a conduit of nutrients. Pituitary occurs in the interface between the suspensor and the embryo.

As a model organism of plant physiologists have used the small crucifer Arabidopsis thaliana , which has been widely studied embryogenesis and compartmentalized in conceptual stages:

1. State of the zygote. Initial, is the result of the merger of the oosphere with one of the generative nuclei of pollen grain .

2. Globular state. Status of eight cells generated after the first zygotic division asymmetrical.

3. State cordate. The one where they differentiate actively dividing two places, which will be the future cotyledons.

4. State torpedo. Due to cell elongation in the longitudinal axis of the embryo and by expansion of the cotyledons.

5. Mature state. After the loss of water and initiation of a quiescent state.

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