



# Endosperm : developmental and molecular biology /

Olsen, Odd-Arne

Springer,  
2007

Electronic books

Monografía

The nutritive endosperm of angiosperms is mankind's most important source of food, livestock feed and industrial raw material. This book is the first comprehensive overview of the developmental and molecular biology of endosperm. The text covers cereal endosperm development from fertilization to maturity, including molecular and cell biology of the syncytial phase, the cellularization process and cell fate specification of the embryo surrounding region cells, the basal transfer cells, the starchy endosperm and aleurone cells. In addition, endosperm development in the model species *Arabidopsis thaliana* is covered, along with recent progress in endosperm in vitro culture. Special features of endosperm, such as imprinting, polyploidy, programmed cell death and anthocyanin biosynthesis, are described in separate chapters. Finally, the genes and pathways for the main nutritional components of endosperm, storage proteins and starch are covered in detail. Each chapter is illustrated with figures and diagrams, accompanied by text intended for readers at all levels with a basic understanding of cell and molecular biology

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**Título:** Endosperm developmental and molecular biology volume editor, Odd-Arne Olsen

**Editorial:** Berlin New York Springer 2007

**Descripción física:** 1 online resource (x, 248 pages) illustrations (some color)

**Tipo Audiovisual:** ontogenie ontogeny plantenontwikkeling plant development plantenanatomie plant anatomy  
plantenfisiologie plant physiology levenswetenschappen life sciences genexpressieanalyse genomics  
plantengenetica plant genetics Biology (General) Biologie (algemeen)

**Mención de serie:** Plant cell monographs 1861-1370 8

**Documento fuente:** Springer e-books

**Bibliografía:** Includes bibliographical references and index

**Contenido:** The Developmental Biology of Cereal Endosperm -- Endoreduplication and Programmed Cell Death in the Cereal Endosperm -- Aleurone Cell Development -- The Embryo Surrounding Region -- Transfer Cells -- *Arabidopsis* as a Model for Understanding the Basics of Endosperm Development -- Endosperm Cell and Organ Culture -- Anthocyanin Synthesis in Maize Aleurone Tissue -- Protein Body Biogenesis in Cereal Endosperms -- Endosperm Cell Walls: Formation, Composition, and Functions -- Starch Formation in the Cereal Endosperm --

The Structure and Expression of Cereal Storage Protein Genes -- Genomic Imprinting in *Arabidopsis thaliana* and *Zea mays*

**Lengua:** English

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648310654 756426522 880098471 994847063 1005788554 1019996001 1024278943 1035701551 1044208963  
1056347308 1058476326 1060855493 1066603445 1069511554 1075575419 1077848186 1087316479  
1100856832 1126414836

**ISBN:** 9783540712350 3540712356 9783540712343 electronic bk.) 3540712348 electronic bk.) 1280937440  
9781280937446 9786610937448 6610937443

**Materia:** Endosperm Angiosperms- Cytology Angiosperms- Molecular aspects Magnoliopsida- cytology  
Endosperm Angiospermes- Cytologie Angiospermes- Aspect moléculaire Albumen SCIENCE- Life Sciences-  
Botany Angiosperms- Cytology Angiosperms- Molecular aspects Endosperm Biomédecine Sciences de la vie  
Angiosperms- Cytology Endosperm

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**Enlace a formato físico adicional:** Print version Endosperm. Berlin ; New York : Springer, 2007 9783540712343  
3540712348 (DLC) 2007924314 (OCO LC) 149011219

**Punto acceso adicional serie-Título:** Plant cell monographs 8. 1861-1370

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