

Exam topics of Developmental Biology II. subject 2019/2020 2nd semester

- Development of enteric nervous system (stem cells, molecular regulation, Hirschsprung disease)
- Origin and types of neural crest cells.
- Ontogeny of cranial neural crest cells.
- Development of the skull and congenital abnormalities.
- Intestinal organoids
- Cerebral organoids
- „Wavefront and clock” model: the role of retinoic acid and FGF8 in somitogenesis
- The molecular regulation of somite-differentiation: the formation and derivatives of the sclerotome, myotome and dermatome
- Role of HOX genes in limb development.
- Limb bud formation (axes, molecular regulation)
- Molecular changes accompanying the heart field development.
- Characterise the organizer regions important in neural patterning.
- Describe the dorsoventral patterning of the neural tube at the level of the spinal cord. Characterise the molecular background of the process.
- Compare the primitive and definitive hematopoiesis.
- Characterise the following terms: angiogenesis and vasculogenesis
- Development of exocrine and endocrine pancreas.
- Development of the liver.
- Stages of the lung development, main events.
- Molecular components of branching process in the bronchial tree formation.
- Molecular background of the thymus development.