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NEURAL CREST DERIVATIVES

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NEURAL CREST DERIVATIVES

The neural crest, a unique transient embryonic cell population, as a group of cells localized in between the neural tube and the epidermis in the vertebrate embryo.Neural crest cells originate in the ectoderm at the margins of the neural tube.

EMBRYOLOGY OF NEURAL CREST CELLS

- ***These cell types include :***
- ***The neurons and glial cells of the sensory, sympathetic, and parasympathetic nervous systems,***
- ***The epinephrine-producing (medulla) cells of the adrenal gland,***
- ***The pigment-containing cells of the epidermis, and***
- ***Many of the skeletal and connective tissue components of the head. The fate of the neural crest cellsdepends, to a large degree, on where they migrate to and settle.***

MIGRATION PATHWAYS

- ***Cells migrate dorsolaterally to produce the craniofacial mesenchyme that differentiates into the cartilage, bone, cranial neurons, glia, and connective tissues of the face.***
- ***These cells enter the pharyngeal arches and pouches to give rise to thymic cells, odontoblasts of the tooth primordia, and the bones of middle ear and jaw.***
- ***Neural crest cells that become the pigment-synthesizing melanocytes.***
- ***Sclerotomes are blocks of mesodermal cells.***

MAJOR NEURAL CREST DERIVATIVES

- ***The vagal and sacral neural crest, whose cells generate the parasympathetic(enteric) ganglia of the gut.***
- ***The vagal (neck) neural crest lies opposite somites 1–7, while the sacral neural crest lies posterior to somite 28.***
- ***The cardiac neural crest is located between the cranial and trunk neural crests.***

MCQ

QUESTION

Q. All are derivatives of ectoderm except

A. Epidermis

B. Parotid gland

C. Neurohypophysis

D. Arrector pilorum

• Ans-D