

## **Abstract**

Cell migration, usually seen as a relatively well understood phenomenon, is involved in many aspects of multicellular organisms. While given a major attention due to its part in physiological processes, such as immune response, wound-healing and regeneration, or pathologies like progression of metastatic cancers, its key role in the body plan formation is far less understood and often overlooked. During a process called gastrulation, precursors of three germ layers - superficial ectoderm, inner endoderm and medial mesoderm - are arranged according to their fate, generating a three-layered embryo, a hallmark of triblastic vertebrates. The onset of this highly coordinated step of early embryonic development is accompanied by fine-tuned cell migration, which needs to be downregulated in adults in order to maintain a homeostasis. The cells forming gastrulating embryos collectively undergo a set of behaviors termed morphogenetic movements whose features - partially comparable to ones observed on cells migrating in culture - are shared among vertebrate species, providing valuable insights into “hidden homology” and phylogenetic relationships. Research focusing on regulation and mechanisms of morphogenesis is mostly conducted using *Xenopus laevis* as a model organism, extrapolating results to higher vertebrates. However, as many studies suggest, what applies to amphibians does not always apply to other taxonomic groups.

**Key words:** migration, cells, early embryonic development, gastrulation, morphogenetic movements, vertebrates