

Abstract

With new progressive methods allowing us to study natural regeneration in model organisms, we have an opportunity to gain important insights into the very essence of this process. These insights might help us radically improve the current state of therapeutic approaches based on tissue replacement. Many different animal models display an incredible ability to restore various body parts, allowing them to escape predators and avoid premature death. While invertebrate models give us a chance to investigate the fundamental elements of regeneration, vertebrates represent systems often more resembling human biology. This thesis outlines the variability of regeneration in frequently studied model organisms with a special emphasis on the impact of gene expression.

Keywords: regeneration, model organism, gene expression, injury