Is limb regeneration science fiction? Maybe not

Limb regeneration remains the stuff of science fiction for humans, but an accidental discovery provides a new window into what it would take for people to grow lost limbs with newtlike flair. During routine cancer research at the Children's Hospital of Boston, George Daley accidentally stumbled on a gene that give scientists a clue about limb regeneration.

The research mice that Daley and his team were using were genetically engineered to have a more active form of the gene Lin28a, which can "reprogram cells back to an embryonic-like state," Daley told *Scientific American*. What he didn't expect was that the gene also allowed his mice to grow back clipped ears or toes.

The researchers also found out that they could replicate this finding by "giving non genetically altered [mice] drugs that help activate" the same processes that Lin28a stimulates. Revving up the gene's activity tricked the mouse's body into believing it was younger, which is when Lin28a is active naturally. The process allowed the mice to miraculously regrow minor organs.

However, the regeneration effects of Lin28a only extend so far. "When mice were no longer babies–at five weeks–the scientists were not able to regenerate their limbs, even if the gene was stimulated," writes Dina Fine Maron. "Nor did Lin28a help mice heal damaged hearts, "suggesting that the protein is not equally effective everywhere in the body."

Still, the accidental discovery "could potentially open a way to expand our regenerative playbook by manipulating the activity of genes."

Read the full, original story here: "New Limb Regeneration Insight Surprises Scientists"

Additional resources:

- "Will we ever regenerate limbs?," National Geographic
- "Researchers uncover key clues in the mystery of limb regeneration," Io9