With CRISPR, genetic engineering drugs easier than ever

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Genetic engineering has wrought spectacular changes in the years since it was first developed in 1973. By breeding mice to have particular mutations, researchers have been able to explore the roots of diseases including cystic fibrosis and diabetes. It has also opened the door to new hybrids: pest-resistant corn with genes taken from bacteria, for instance, and yeast modified to churn out an antimalarial drug. As of 2014, the market for genetically engineered products was worth almost $2 billion — a number that is expected to double over the next five years.

But despite these advances, the process of altering genes has remained laborious and inexact. Engineering a mouse with a single mutation took a dedicated lab almost two years, and even that was something of a crapshoot. Altered genes frequently ended up in random locations, or else in widely varying numbers — no copies in one cell, a dozen copies in another — often with confounding results. One scientist told me that before Crispr, he had to microinject roughly a million cells in order to get one perfect mutation. With Crispr, he could get the same result using just 10 cells.

In the era of Crispr, those limitations are already disappearing. In October, Harvard researchers used Crispr to simultaneously alter 62 genes in pig embryos, creating animals that could, at least in theory, grow human organs for transplant.

Read full, original post: The Crispr Quandary