

Hidden code regulates harmful mutations of our genome, aiding evolution

On the one hand, mutations are needed for biological innovation, and on the other hand they cause diseases. How does nature resolve this conflict? Recent research by me and my colleagues suggests that one answer could lie in a genetic code that allows evolution to innovate while minimizing the disruption this can create.

This code is hidden within a part of [our genome](#)...known as [repetitive genetic elements](#)...[I]nstead of building a protein, some RNA molecules convert back into DNA and insert themselves at new locations in our genome.

In this way, the repetitive elements can continually create new copies of themselves. As a result, the human genome contains [thousands of repetitive elements](#) that are not present in any other species because they have copied themselves since humans evolved.

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To put it another way, the balanced forces buy the time needed for mutations to make beneficial changes, rather than disruptive ones, to a species. And this is why evolution proceeds in such small steps – it only works if the two forces remain balanced by complementary mutations, which takes time. Eventually, important new molecular functions can emerge from randomness.

The GLP aggregated and excerpted this blog/article to reflect the diversity of news, opinion, and analysis. Read full, original post: [A hidden code in our DNA explains how new pieces of genes are made](#)