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RESEARCH ARTICLE

Did Retroviruses Begin as Designed Elements? A Fresh Look at ERVs

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Author's Note

For several years I have been engaged in an active research project on endogenous retroviruses (ERVs). This work has had two goals: first, to critically examine and answer the evolutionary claim that ERVs are among the strongest lines of evidence for common descent. Evolutionary biologists often point to ERVs as "the best evidence for evolution," with some even going so far as to call them as close to proof as science allows. Yet in science, nothing is ever truly proven—hypotheses are tested, challenged, and either withstand scrutiny or are falsified.

Second, and just as important, my work has focused on model building. It is not enough to merely refute another position; creationists must also construct a framework that better explains the data. A superior model should not only answer challenges but also generate testable, falsifiable predictions that move research forward.

What follows is a reflection of years of study, thought, and dialogue in this area. The research project is ongoing, and the model continues to be refined as new evidence is examined. Consider this blog post a sneak preview into that broader body of research—a window into

how ERVs can be understood not as accidents of evolution, but as functional and purposeful features of genomes, consistent with the biblical creation model.

Introduction

Endogenous retroviruses (ERVs) are often framed as fossilized viral infections—molecular scars from ancient retroviruses that invaded the genomes of our ancestors and were passed down through the generations. In this standard evolutionary story, ERVs are little more than accidents of history, neutral passengers that occasionally get co-opted for new purposes.

But what if the story is upside down? What if ERVs—and even retroviruses themselves—didn't begin as random invaders at all? What if they started as functional elements, purposefully integrated into genomes to regulate and protect life?

The Puzzle of Polymorphic ERVs

Critics of design often point to "polymorphic" ERVs—those that aren't fixed across every individual in a species—as evidence that ERVs are nothing more than junky viral remnants. Humans, for example, carry mostly fixed ERVs. But in mice, many ERVs are polymorphic: present in some strains, absent in others. Evolutionary scientists, such as Dr. Zach Hancock (in a video titled "Were ERVs Created?"), have pointed this out as an argument in favor of the evolutionary understanding of ERVs.

And here's the surprising twist: some of these unfixed ERVs in mice are functional. They help regulate gene expression. They even play roles in immune defense. If ERVs are nothing but ancient accidents, why would they show up as flexible, strain-specific regulators of health?

A Flip in Perspective

According to mainstream evolutionary thinking, retroviruses came first. They infected germline cells, and over millions of years, their sequences became fossilized as ERVs. But evolutionary biologists themselves acknowledge that retroviruses probably originated from pre-existing retrotransposons—mobile genetic elements already in host genomes.

That raises a fascinating alternative: what if functional retrotransposons were the starting point? What if they were created with roles in regulation, development, and immunity? Later, some of these elements may have been repackaged into infectious retroviruses—by acquiring an *env* gene, for example—that allowed them to hop into new species.

If that's the case, then ERVs aren't fossils of past infections at all. They're designed elements that retroviruses borrowed and carried with them.

The Prediction: Viruses That Burn Hot in Foreign Hosts

This model makes a bold and testable prediction:

Exogenous retroviruses (like HIV) are most likely harmless in their original hosts, but harmful when they cross into a new species.

Why? Because in their natural context, the host genome already knows how to regulate them. But when a virus jumps species, the new host doesn't have the right regulatory tools. The result is chaos: the virus "burns hot and fast," causing disease.

This is exactly what we observe. Simian immunodeficiency virus (SIV), closely related to HIV, often causes little or no disease in its natural primate hosts. But when it crossed into humans, it became HIV—a devastating virus that our bodies struggle to regulate.

This isn't limited to HIV. If retroviruses truly trace back to functional retrotransposons, we should expect many exogenous retroviruses to be relatively benign in their original hosts but pathogenic in new ones. That's a falsifiable prediction—and the **gold standard** of science is testability.

A Biblical Creation Perspective

From a biblical creation perspective, the history of ERVs makes sense in light of dramatic events after the Flood. The post-Flood world saw massive environmental changes, accelerated mutation rates, and an increase in viral activity. This was a perfect setting for exogenous retroviruses to spread more widely, occasionally inserting into the germlines of animals and humans.

Animals leaving the Ark began to migrate, reproduce, and fill the earth. Because of their shorter generation times and rapid reproduction, creatures like mice could accumulate new ERVs more quickly, leading to varying frequencies across populations. Some of these unfixed ERVs—though not part of the originally created fixed set—still reached high frequencies and even acquired functional roles, especially in immunity and regulation.

Humans, however, had a different history. According to the biblical timeline, dispersal to all parts of the globe did not occur until the Tower of Babel event, perhaps a century or two after the Flood. That means there was less time for new ERVs to spread and fix across the human population. Instead, most unfixed ERVs in humans remained at low frequency, never achieving full fixation like the designed, functional elements placed in the genome from the start.

This perspective helps explain why we see a striking difference between animals like mice, with many polymorphic ERVs—including functional ones—and humans, where ERVs are overwhelmingly fixed. It's not random chance; it's a reflection of unique histories shaped by both biology and biblical events.

Why It Matters

Instead of dismissing ERVs as genomic junk or ancient fossils, this framework reframes them as purposeful, functional elements. Polymorphic ERVs in mice aren't an evolutionary leftover; they're a glimpse into a system of regulation and immunity designed into genomes from the beginning.

And if retroviruses really do carry these functional elements with them when they jump species, then what we call "viral fossils" might actually be evidence of foresight, purpose, and design.

This is model building in action—grounded in Scripture, informed by science, and open to further testing and refinement. And the more research unfolds, the more this alternative perspective offers a powerful explanation of ERVs that evolution simply cannot match.

Further Reading

PDF Article

Budinsky, D. (2025). *Rethinking endogenous retroviruses*. Standing for Truth Ministries. https://standingfortruthministries.com/wp-content/uploads/2025/09/Rethinking-Endogenous-Retroviruses-by-Donny-Budinsky.pdf

Book (Black & White Edition)

Budinsky, D. (2022). *The endogenous retrovirus handbook: Dismantling the best evidence for common descent* (Black and white ed.). Amazon. https://www.amazon.com/dp/B0B14KHL8G

Book (Full Color Edition with Variant Cover)

Budinsky, D. (2022). *The endogenous retrovirus handbook: Dismantling the best evidence for common descent* (Full color ed., Variant cover). Amazon. https://www.amazon.com/dp/B0B1B1N8F6