

# Can Epigenetics Cure What AI Can't?

A new gene-tagging therapy silences hepatitis B in mice and monkeys—without cutting DNA.

# impressive

## Therapy Efficacy

In preclinical trials, a single injection of CRMA-1001 showed strong suppression of HBV DNA in human liver cells and mice.

This result, described as 'quite impressive' by experts, demonstrates that epigenetic editing can achieve durable viral suppression without the mutagenic risks of traditional gene editing. The approach uses CRISPR-Cas9 that lacks cutting activity, instead deploying methyl tags to silence viral DNA—offering a safer, non-destructive method to neutralize persistent threats at the genomic level.

Source: Nature · Published September 21, 2026

[https://www.nature.com/articles/d41586-026-02981-9?error=cookies\\_not\\_supported&code=559f3ba-b-5d95-4f55-a9fa-93be6fcd7fd](https://www.nature.com/articles/d41586-026-02981-9?error=cookies_not_supported&code=559f3ba-b-5d95-4f55-a9fa-93be6fcd7fd)



# 01

## Silence, Not Destruction

The success of CRMA-1001 underscores a critical shift in safety engineering: neutralizing threats by turning them off, rather than destroying them. In AI safety, this parallels the need to deactivate malicious agents or corrupted models without erasing their training data—preserving integrity while eliminating risk. The principle of non-destructive control could redefine how we manage systemic vulnerabilities in complex systems.



# 02

## Hidden Threats, Hidden Risks

Just as HBV hides in host DNA as a 'genomic archive' that rebounds after treatment, AI systems can harbor latent, dormant behaviors that emerge under stress. The epigenetic model shows that long-term safety requires addressing the archive—whether viral DNA or corrupted model weights—before they reactivate. This demands new monitoring protocols that detect and tag latent risks, not just active ones.

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