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NEWS FEATURE | 15 October 2024 **AI has dreamt up a blizzard of new proteins. Do any of them actually work?**

Emerging protein-design competitions aim to sift out the functional from the fantastical. But researchers hope that the real prize will be a revolution for the field.



By Ewen Callaway

nature

"... in **Bits to Binders**, researchers are vying to create small proteins that could be used in a T-cell cancer therapy. **Run by the BioML Society, a graduate-student-led group at the University of Texas at Austin, it attracted 64 teams from 42 countries** — including Nigeria, Colombia, Iran and India. Around 18,000 designs are now being tested, with results due in early 2025. "We were quite surprised with the turnout," says co-organizer Clayton Kosonocky, a biochemistry PhD student at the university.

- → Teams designed the **80 amino acid antigen binding domain** of a Chimeric Antigen Receptor (CAR) to engage a CD20 cancer antigen target, with the goal of activating a CAR-T cell killing and proliferation response.
- \rightarrow DNA was synthesized by Twist for the top 12,000 designs and are currently being tested by Leah Labs for T-cell activation. (Sneak peak as of yesterday: some designs appear to be working!)