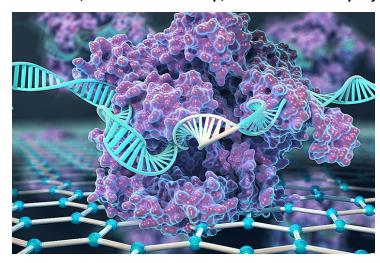


## Scientists create handheld CRISPR device

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## The device, dubbed CRISPR-Chip, could be used to rapidly diagnose genetic diseases



A team of engineers at the UC Berkeley and the Keck Graduate Institute (KGI) of The Claremont Colleges combined CRISPR with electronic transistors made from graphene to create a new hand-held device that can detect specific genetic mutations in a matter of minutes.

The device, dubbed CRISPR-Chip, could be used to rapidly diagnose genetic diseases or to evaluate the accuracy of geneediting techniques. The team used the device to identify genetic mutations in DNA samples from Duchenne muscular dystrophy patients.

But unlike most forms of genetic testing, including recently developed CRISPR-based diagnostic techniques, CRISPR-Chip uses nanoelectronics to detect genetic mutations in DNA samples without first "amplifying" or replicating the DNA segment of interest millions of times over through a time- and equipment-intensive process called polymerase chain reaction, or PCR. This means it could be used to perform genetic testing in a doctor's office or field work setting without having to send a sample off to a lab.