

‘Arrival of the fittest’: Fragile DNA ‘hot spots’ play key role in mutations, evolution

Against the odds, separate species and populations independently evolve the same solutions to life’s challenges, and the same genes are recruited to mutate and enable certain adaptations again and again. Now researchers at Stanford University think they have found part of the answer, at least for the fish called three-spine sticklebacks (*Gasterosteus aculeatus*).

According to a recent study [described in Science](#), the stickleback’s DNA has fragile “hot spots” that are predisposed to break and mutate more often, with an accompanying loss of traits. The result is that these fish rapidly evolve the same adaptation — the loss of a pair of fins on their pelvis — repeatedly.

The discovery serves as a reminder that when looking at how mutations help with “survival of the fittest,” it’s also important to consider why those mutations occurred — “arrival of the fittest,” according to [David Kingsley](#), the evolutionary geneticist whose lab conducted the study.

This work is “raising the specter that not all sites in the genome are equal. Some places are going to be more prone to mutation, and those may be meaningful for the repeated adaptation of populations,” said [biologist] [Sean B. Carroll](#).

Read full, original post: [Fragile DNA Enables New Adaptations to Evolve Quickly](#)