

# CAN MUTATIONS GUIDE THE STORY OF EVOLUTION? YES, SAYS NEW STUDY

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Researchers say mutation is inherently biased in most species, such that some types of mutations occur more often than others. | Photo Credit: Getty Images/iStockphoto

A study conducted by scientists from the National Centre for Biological Sciences (NCBS) and Western University, Canada, shows direct evidence for how mutations are key to understanding evolution.

“Any biology textbook will tell you that mutation and natural selection drive evolutionary change in species. The role of mutations was thought to be relatively passive – while they create the raw material for evolution, their fate is ultimately decided by selection. But evidence from the past few years is beginning to change this view,” said NCBS.

Dr. Deepa Agashe’s group from NCBS and Dr. Lindi Wahl from Western University said mutation is inherently biased in most species, such that some types of mutations occur more often than others. Several studies have suggested that this mutational bias could significantly shape the course of evolution.

On changing the existing mutation bias of *Escherichia coli*, the scientists found that the bacterium could now access many more beneficial mutations, which are key for adaptation in new environments.

Based on these results, the scientists predicted that changing mutation bias is a good way to find new adaptive mutations. Indeed, analysis of over a thousand bacterial genomes suggested that historically, bacteria may have often experienced such beneficial bias switches.

“Altogether, the study proposes a novel hypothesis for the importance of mutational biases, opening an exciting new angle of enquiry into the fundamental question of what drives evolutionary change,” NCBS said.

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