

Conifer Genome Remains Constant for Last 100 Million Years

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(Photo : Flickr/ oatsy40) A conifer tree

Researchers have found that the genome of conifers has remained the same over the last 100 million

<http://www.natureplanet.com/articles/3188/20121216/conifer-genome-remains-constant-last-100-million.htm>

years.

Researchers from Université Laval, Canada, and their colleagues from the Canadian Forest Service noticed a resemblance between today's conifers and the fossils of trees dating back to the dinosaur age.

The research team compared the genome of conifers that include fir, spruce and pine, with that of the genome of flowering plants. They revealed that the genome of conifers has remained stable over the last 100 million years. The findings of the study appear in the recent issue of the journal *BMC Biology*.

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Conifers and flowering plants (angiosperms) are from the same ancestor, but diverged into different communities 300 million years ago.

For their study, researchers compared the macrostructure of the genome for 157 gene families that are commonly found in both conifers and flowering plants. They found that the conifer genome has not changed much in the last 100 million years, while the flowering plants have undergone major changes during the same period.

"That doesn't mean there haven't been smaller scale modifications such as genetic mutations," said

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"However, the macrostructure of the conifer genome has been remarkably stable over the ages," he added.

This explains why conifers have a low speciation rate, where there are only 600 species of conifers. In comparison, there are more than 400,000 species of flowering plants.

"Conifers appear to have achieved a balance with their environment very early," says Bousquet. "Still today, without artifice, these plants thrive over much of the globe, particularly in cold climates. In contrast, flowering plants are under intense evolutionary pressure as they battle for survival and reproduction," he concludes.