SOMATIC MUTATIONS AND MOSAICISM

Somatic mosaicism, driven by persistent DNA lesions, is gaining attention thanks to a recent Nature study by Spencer Chapman et al.[1] The paper demonstrates that certain DNA lesions in human somatic cells, especially haematopoietic stem and progenitor cells (HSPCs), can persist for years, sometimes originating in utero, and lead to multiallelic variation and phylogeny-violating mutations.

Building on this, the Trends in Genetics (TIG) commentary by Arnedo-Pac and Aitken[2] spotlights the study, placing it in the broader context of lesion segregation and mutational asymmetry. TIG emphasizes how this research resolves previously "impossible" phylogenetic trees and confirms that both endogenous and exogenous DNA damage can leave a long-lasting mark on our genomes.

1. https://www.nature.com/articles/s41586-024-08423-8
2. https://www.cell.com/trends/genetics/fulltext/S0168-9525(25)00049-6?_returnURL=https%3A%2F%2Flinkinghub.elsevier.com%2Fretrieve%2Fpii%2FS0168952525000496%3Fshowall%3Dtrue