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Mutagenic mechanisms in normal and neoplastic B cells: from AID-induced diversification to genome-wide patterns

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Citation

Sepúlveda Yáñez, J. H. (2024, November 12). *Mutagenic mechanisms in normal and neoplastic B cells: from AID-induced diversification to genome-wide patterns*. Retrieved from <https://hdl.handle.net/1887/4108983>

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From AID-induced diversification to genome-wide patterns**

1. Tandem substitutions during somatic hypermutation are produced by a conservative or semiconservative use of the germline sequence, which is translated in most cases (60.6% to 89.5%) as an inversion or (partial) semi-inversion of the original sequence. – *Chapter 2*.
2. AID overexpression, as observed in follicular lymphoma, induces multiple mutations simultaneously at single cell level. – *Chapter 3*
3. AID (SBS84) and mismatch repair (SBS6) signatures are significantly higher in the active compartment of the DNA of Follicular lymphoma, in contrast to CLL, as identified by integrating Hi-seq data in signature analysis. – *Chapter 4*.
4. Monoclonal B-cell lymphocytosis (MBL) shows autonomous BCR signaling capabilities, albeit with reduced intensity compared to chronic lymphocytic leukemia (CLL) siblings. – *Chapter 5*
5. The combination of de novo and fitting approaches for identifying mutational signatures is more robust in detecting meaningful signatures. — *Maura F, et al. Nat Commun. 2019;10:3675*.
6. UNG enzymes recognize uracil through a "base flipping" mechanism, where the target uracil base is flipped out of the DNA helix and into the enzyme's active site. — *Zharkov DO, Mechetin GV, Nevinsky GA. Mutat Res. 2010;685:11-20*.
7. The acquisition of autonomous signaling in the BCR of CLL can be acquired during affinity maturation — *Minici C, et al. Nat Commun. 2017;8:15746*.
8. AID scans the entire length of the ssDNA multiple times during a single binding event, with an average bound lifetime of approximately five minutes. — *Senavirathne G, et al. Nat Commun. 2015;6:10209*.
9. In computational biology, working with imperfect data often drives the need for innovative solutions.
10. Happiness is not something to pursue, but rather a state of mind we actively cultivate within ourselves
11. "A room of one's own" symbolizes more than just creative space; it represents the evolving empowerment of women to pursue their intellectual and personal freedom, something denied to generations past.
12. When you're immersed in the task, give it your full attention, but once it's over, let it go completely.