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A proposal: Evolution of PCNA's role as a marker of newly replicated DNA

By

Roxana Georgescu, Lance Langston and Mike O'Donnell

Highlights:

- Sliding clamps and clamp loaders share a common ancestry.
- Sliding clamps were present in LUCA (*Last Universal Common Ancestor*)
- Helicase, primase, DNA polymerase may not have been present in LUCA
- We propose PCNA marks new DNA strands for MMR and nucleosome assembly.
- The use of clamps to mark newly replicated DNA may be essential to genome stability.

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