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Repair polymerases in a double act

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In the 31 August Nature Johnson *et al*. report that two eukaryotic DNA polymerases act sequentially to repair DNA lesions (*Nature* 2000, **406**:1015-1019). DNA polymerase iota is a low fidelity polymerase that is particularly error-prone opposite a normal T residue, but when faced with the extremely distorted (6-4) T-T photoproduct it can successfully incorporate an A. It also does well opposite a non-instructional abasic lesion, but in neither case can it extend beyond the lesion. DNA polymerase ζ shows the opposite combination of properties. It cannot incorporate nucleotides opposite lesions, despite its known involvement in DNA repair. But it shows high fidelity in extending from the nucleotides inserted opposite DNA lesions by DNA polymerase ι.

References

1. Nature, [http://www.nature.com/nature/]

2. Novel human and mouse homologs of Saccharomyces cerevisiae DNA polymerase eta.