



DNA polymerase beta-ILV methyl-labeled spectrum

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Field strength: 600 and 800 MHz

Why is this your favorite spectrum?

This is an overlay of open binary (red), closed ternary (green), and 1260Q mutant binary (blue) pol beta. Here, it can be seen that the 1260Q, which displays reduced nucleotide discrimination at the binding step, populates a closed form of the enzyme in the binary complex.

This spectrum is a fascinating example of stability of the closed form of pol beta in a fidelity-reduced mutant. Given that chemical shifts of the 1260Q binary are in between the closed and open form of the enzyme, it can be hypothesized that the 1260Q binary samples the closed form of the enzyme. This can help explain why it loses much nucleotide discrimination at the binding step.