

Supporting Information

An autoinhibitory role for the GRF zinc finger domain of DNA glycosylase NEIL3

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Table S1. DNA substrates composition from glycosylase assays

Substrate	Length (nt)	Sequence (5'-3')
EMSA and fluorescence anisotropy		
ssDNA	10	FAM-CTCAGGACTC
ssDNA	20	FAM-CTCAGGACTCAGTTCGTCAG
ssDNA	30	FAM-CTCAGGACTCAGTTCGTCAGCCCTTGACAG
ssDNA	40	FAM-CTCAGGACTCAGTTCGTCAGCCCTTGACAGCGATGGAAGC
dsDNA	40	1: FAM-CTCAGGACTCAGTTCGTCAGCCCTTGACAGCGATGGAAGC 2: GCTTCCATCGCTGTCAAGGGCTGACGAACTGAGTCCTGAG
Fork	40	1: FAM-CTCAGGACTCAGTTCGTCAG <u>CCCTTGACAGCGATGGAAGC</u> 2: <u>CGAAGGTAGCGACAGTTC</u> CCCTGACGAACTGAGTCCTGAG
Glycosylase assays		
ssDNA	25	FAM-GACCACTACACC(DHT)ATTCCTTACAAC
Lead DHT fork	25	1: FAM-GACCACTACACC(DHT) <u>ATTCCTTACAAC</u> 2: <u>CAACATTCCTTA</u> <u>A</u> GGTGTAGTGGTC
Lag DHT fork	25	1: FAM- <u>GACCACTACACC</u> (DHT)ATTCCTTACAAC 2: GTTGTAAAGGAATA <u>CCACATCACCAG</u>
Lead AP-ICL fork	39	1: FAM-CCTTCAACCACCGCTCAACTC(<u>AP</u>)TG <u>AACTGCAGTCTGGTT</u> 2: <u>CCGTTCCGGTAGCGG</u> <u>CA</u> AAGAGTTGAGCGGTGGTTGAAGG
Lag AP-ICL fork	39	1: FAM- <u>ATGGTCTGACGTGAATC</u> (AP)TGCAACTCGCCACCAACTTCC 2: GGAAGTTGGTGGCGAGTTGCA <u>AGTGGGGATGGCCTTCCC</u>
FAM, 6-carboxyfluorescein. Non-base-paired regions are shown in red. Damaged base pairs are underlined.		

Supplemental Figures

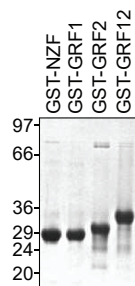


Fig. S1. Coomassie-stained SDS-PAGE gel of purified GST proteins used experiments shown in Fig. 1 and Fig. 2G.

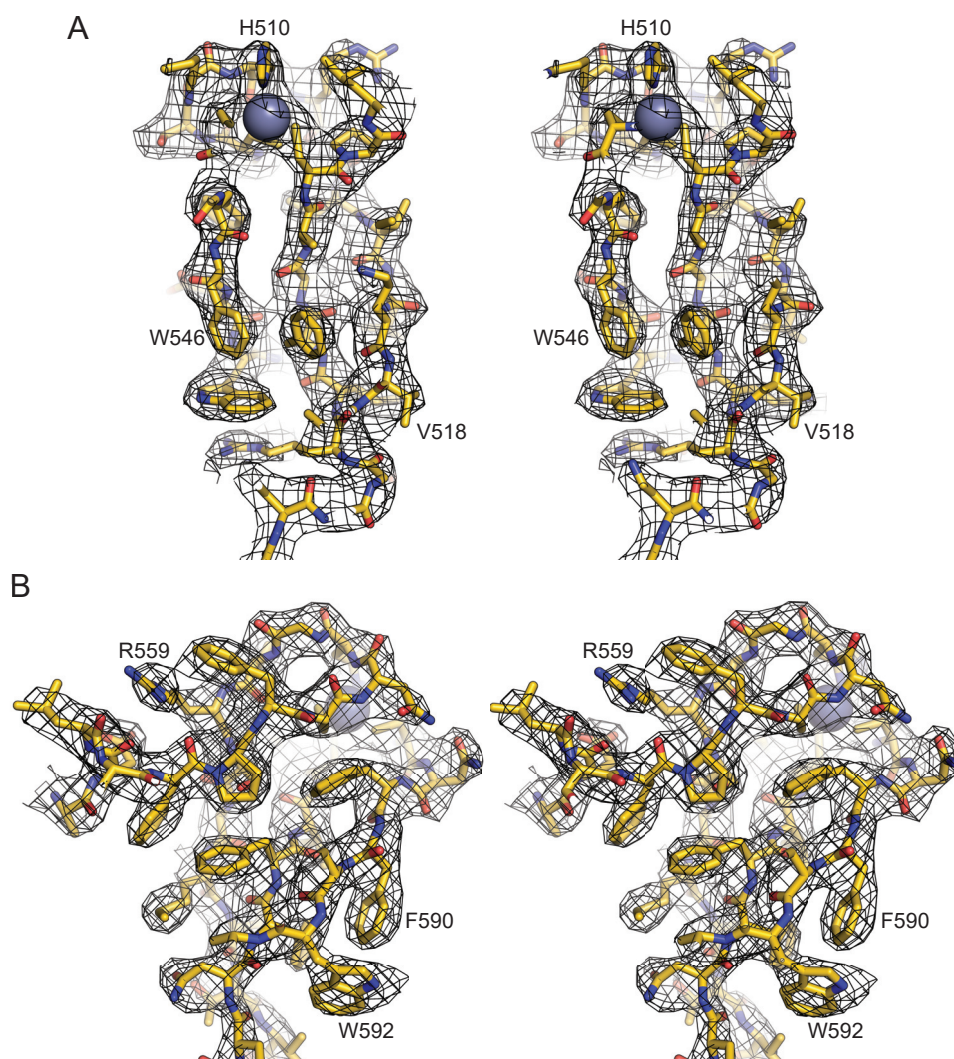


Fig. S2. Stereoimages of representative regions of the refined model superimposed onto 2Fo-Fc electron density (contoured to 1 σ). Labeled residues are for orientation purposes only. **A.** GRF1. **B.** GRF2.

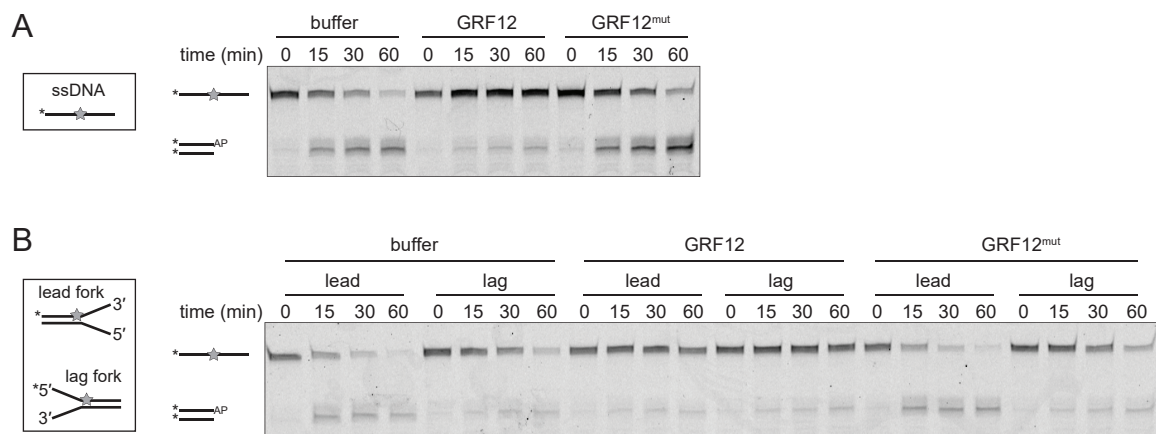


Fig. S3. Representative gels used for data shown in Fig. 5. Glycosylase assays for GRF12 inhibition of 5,6-dihydrothymine in ssDNA (A) and forked substrates (B).