

# Find the NEB Endonuclease Best Suited for your Application

| Enzyme                                     | Major Substrate <sup>1,2</sup>                               | Product(s) Produced  | Termini Created from Cleavage |                 |
|--|--|----------------------|-------------------------------|-----------------|
|  |  |                      | 5'                            | 3'              |
| APE1                                       | AP site  | 1 nt gap             | dR5P                          | OH              |
| Endo III/ <i>Tma</i> Endo III <sup>6</sup> | AP site, Tg, damaged pyrimidines                             | 1 nt gap             | P                             | PA              |
| Endo IV/ <i>Tth</i> Endo IV <sup>6</sup>   | AP site  | 1 nt gap             | dR5P                          | OH              |
| Endo V                                     | dl <sup>4</sup> , dU, AP site                                | Nick                 | P                             | OH              |
| Endo VIII                                  | AP site <sup>4</sup>   | 1 nt gap             | P                             | P               |
| Fpg  | 8oxoG, oxidized purines                                      | AP site;<br>1 nt gap | P                             | P               |
| hAAG                                       | 3mA, 7mG, dl, dX   | AP site              | N/A                           | N/A             |
| hSMUG1                                     | dU <sup>4</sup> , 5-hmU, 5-hoU, 5-fU                         | AP site              | N/A                           | N/A             |
| RNase HII                                  | rN in dsDNA  | Nick                 | P                             | OH              |
| T4 PDG                                     | CPD, AP site   | AP site;<br>1 nt gap | P <sup>7</sup>                | PA              |
| UDG/ <i>Afu</i> UDG <sup>6</sup>           | dU <sup>4</sup>  | AP site              | N/A                           | N/A             |
| Antarctic Thermolabile UDG <sup>5</sup>    | dU <sup>4</sup>  | AP site              | N/A                           | N/A             |
| T7 Endo I                                  | Cruciforms, mismatches, Holliday junctions, across DNA nicks | Nick                 | P                             | OH              |
| Thermostable FEN1 <sup>6</sup>             | 5' DNA flap <sup>3</sup>                                     | Nick                 | P                             | OH<br>(on flap) |

1. Activity is on dsDNA unless otherwise noted
2. Minor activities, substrates and references can be found at [www.neb.com](http://www.neb.com)
3. 5' flaps of 1–40 nt in length have been confirmed substrates
4. Enzyme has robust activity on ssDNA in addition to dsDNA
5. Antarctic Thermolabile UDG can be heat inactivated
6. Thermostable
7. CPD still covalently attached

3mA: 3-methyladenine  
 5-fU: 5-formyluridine  
 5-hmU: 5-hydroxymethyluridine  
 5-hoU: 5-hydroxyuridine  
 7mG: 7-methylguanine  
 8oxoG: 8-oxo-7,8-dihydroguanine  
 AP Site: Apurinc/Apyrimidinc Site  
 CPDs: Cyclobutane pyrimidine dimers  
 dl: deoxyinosine  
 dU: deoxyuridine  
 dX: deoxyxanthosine  
 rN: ribonucleotides  
 Tg: Thymine Glycol  
 OH: Hydroxyl  
 dR5P: deoxyribose 5'-phosphate  
 PA: 3' phospho- $\alpha$ ,  $\beta$ -unsaturated aldehyde  
 P: Phosphate  
 N/A: Not applicable

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