|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Restriction Enzyme** | **Organism** | **Recognition sequence** | **Cut Site** | **Blunt or Sticky end** |
| 1 | Eco RI | *Escherichia coli* | 5'GAATTC  3'CTTAAG | 5'---G AATTC---3'  3'---CTTAA G---5' | Sticky |
| 2 | BamHI | *Bacillus amyloliquefaciens* | 5'GGATCC  3'CCTAGG | 5'---G GATCC---3'  3'---CCTAG G---5' | Sticky |
| 3 | BglII | *Bacillus globigii* | 5’AGATCT  3’TCTAGA | 5’---A GATCT---3’  3’---TCTAG A---5’ | Sticky |
| 4 | PvuII | *Proteus vulgaris* | 5’ CAGCTG  3’ GTCGAC | 5’---CAG CTG---3’  3’---GTC GAC---5’ | Blunt |
| 5 | HindIII | *Haemophilus influenzae Rd* | 5'AAGCTT  3'TTCGAA | 5'---A AGCTT---3'  3'---TTCGA A---5' | Sticky |
| 6 | Sau3A | *Staphylococcus aureus* | 5'GATC  3'CTAG | 5'--- GATC---3'  3'---CTAG ---5' | Sticky |
| 7 | AluI | *Arthrobacter luteus* | 5'AGCT  3'TCGA | 5'---AG CT---3'  3'---TC GA---5' | Blunt |
| 8 | TaqI | *Thermus aquaticus* | 5'TCGA  3'AGCT | 5'---T CGA---3'  3'---AGC T---5' | Sticky |
| 9 | HaeIII | *Haemophilus aegyptius* | 5'GGCC  3'CCGG | 5'---GG CC---3'  3'---CC GG---5' | Blunt |
| 10 | NotI | *Nocardia otitidis-caviarum* | 5'GCGGCCGC  3'CGCCGGCG | 5'---GC GGCCGC---3'  3'---CGCCGG CG---5' | Sticky |

A **restriction enzyme** (**restriction** [**endonuclease**](http://en.wikipedia.org/wiki/Endonuclease)) is an [enzyme](http://en.wikipedia.org/wiki/Enzyme) that cuts double-stranded or single stranded [DNA](http://en.wikipedia.org/wiki/DNA) at specific recognition [nucleotide](http://en.wikipedia.org/wiki/Nucleotide) sequences known as [restriction sites](http://en.wikipedia.org/wiki/Restriction_site). Restriction enzymes recognize a specific sequence of nucleotidesand produce a double-stranded cut in the DNA

[EcoRI](http://en.wikipedia.org/wiki/EcoRI) digestion produces "sticky" ends,

[EcoRI restriction enzyme recognition site.svg](http://en.wikipedia.org/wiki/File:EcoRI_restriction_enzyme_recognition_site.svg)

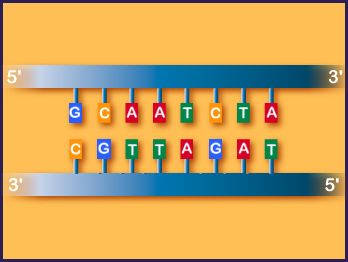
whereas SmaI restriction enzyme cleavage produces "blunt" ends

[SmaI restriction enzyme recognition site.svg](http://en.wikipedia.org/wiki/File:SmaI_restriction_enzyme_recognition_site.svg)

For reference

<http://www.dnalc.org/resources/animations/restriction.html>

**DNA base paired Structure**



DNA is a double stranded helix..one is running from 5’-3’ and the other is from 3’-5’.ie; DNA strands are antiparallel.

Here **G,C,A** and **T** are bases

**G** always pairs with **C** and vice versa

**A** always pairs with **T** and vice versa