

Vidya Bhawan Balika Vidyapeeth Lakhisarai

Arun Kumar Gupta

Sub. Biology

Class 12<sup>th</sup>

Date:- 17.01.21

## Chapter 11 Biotechnology Principles and Processes

### Basic tools of gene cloning .

Names of restriction endonucleases

Titles of restriction enzymes are derived from the first letter of the genus + the first two letters of the species of organism from which they were isolated.

Source microorganism	Enzyme	Recognition Site	Ends produced
<i>Arthrobacter luteus</i>	<i>Alu</i> I	AG↓CT	Blunt
<i>Bacillus amyloiquefaciens</i> H	<i>Bam</i> HI	G↓GATCC	Sticky
<i>Escherichia coli</i>	<i>Eco</i> RI	G↓AATTC	Sticky
<i>Haemophilus gallinarum</i>	<i>Hga</i> I	GACGC(N) <sub>5</sub> ↓	Sticky

<i>Haemophilus infulenzae</i>	<i>Hind</i> III	A↓AGCTT	Sticky
<i>Providencia stuartii</i> 164	<i>Pst</i> I	CTGCA↓G	Sticky
<i>Nocardia otitiscaviaruns</i>	<i>Not</i> I	G↓CGGCCGC	Sticky
<i>Staphylococcus aureus</i> 3A	<i>Sau</i> 3A	↓GATC	Sticky
<i>Serratia marcesans</i>	<i>Sma</i> I	CCC↓GGG	Blunt
<i>Thermus aquaticus</i>	<i>Taq</i> I	T↓CGA	Sticky

Restriction enzymes recognise a specific short nucleotide sequence





endonuclease is required to cut the 2nd strand of the DNA