- **Bacillus** :- It is a bacteria commonly found in soil, freshwater and in rhizosphere (region of soil around plant roots)

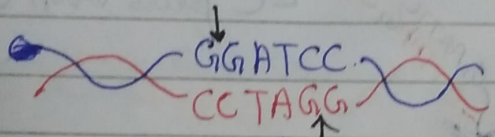
The restriction enzyme here is BamHI
Source :- Bacillus amyloliquefaciens H

In BamHI :- H → H strain

BamHI is used for DNA slicing at GGATCC or CCTAGG sequence.

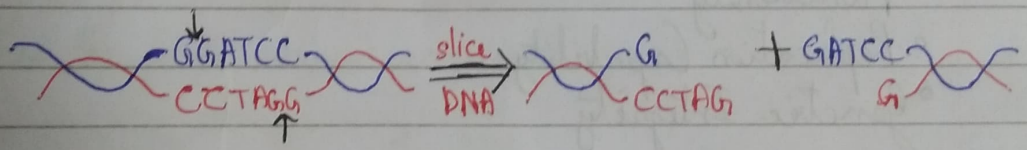
Like EcoRI, BamHI is also a Type 2 restriction enzyme. It can read palindromic DNA sequences (GGATCC)

DNA :-

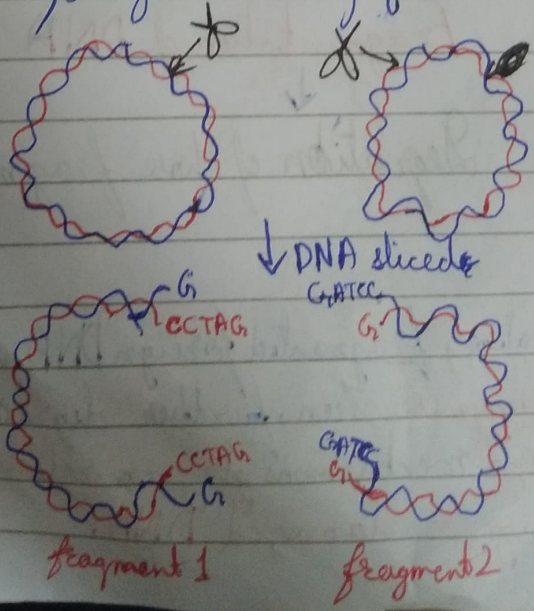


(DNA slicing takes place bet" G & G on both strands)

Template strand → GGATCC
Complementary strand → CCTAGG

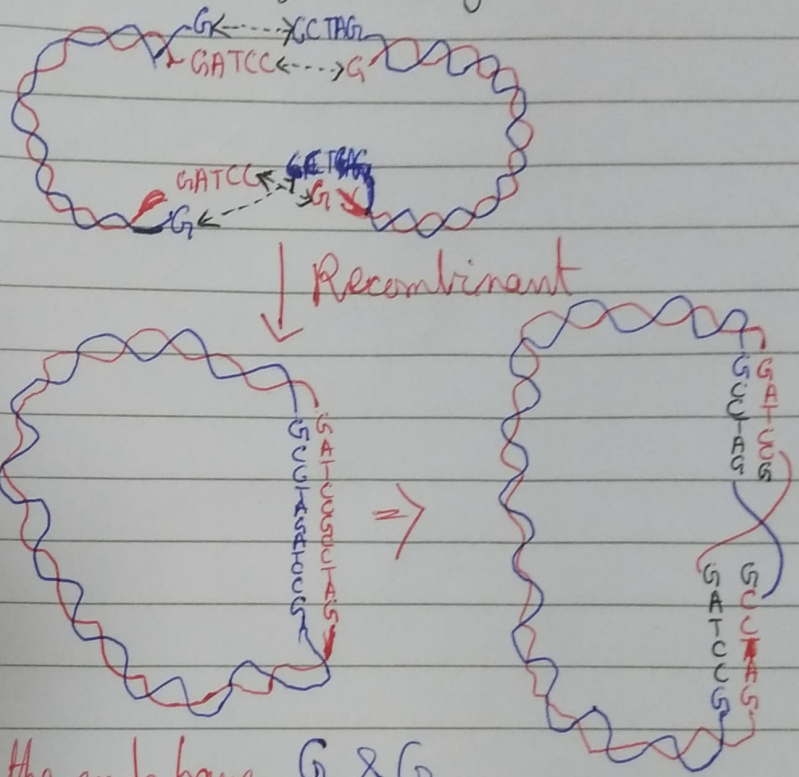


BamHI can only read GGATCC sequence and the restriction enzyme BamHI slices foreign DNA only if it has GGATCC



The sticky ends here are G and G
We know, G can't pair with G
In order for recombinant to take place, the fragment 2's complementary strand & template strand rearranges its DNA sequence to allow pairing bet^n G and C

Therefore in this case, Rearrangement takes place to allow their sticky ends to align correctly.



Even if the ends have G & G, the matching pairing will take place bet^n C&G and A&T

The remaining two G bases will remain unpaired as it doesnot have any complementary base to pair up with.

This does not affect the overall fragmentation & degradation of the foreign DNA itself.

After this, the similar process as shown in EcoRI will take place here leading to destruction of foreign DNA