



CRC

for

Premium

Quality

Wool

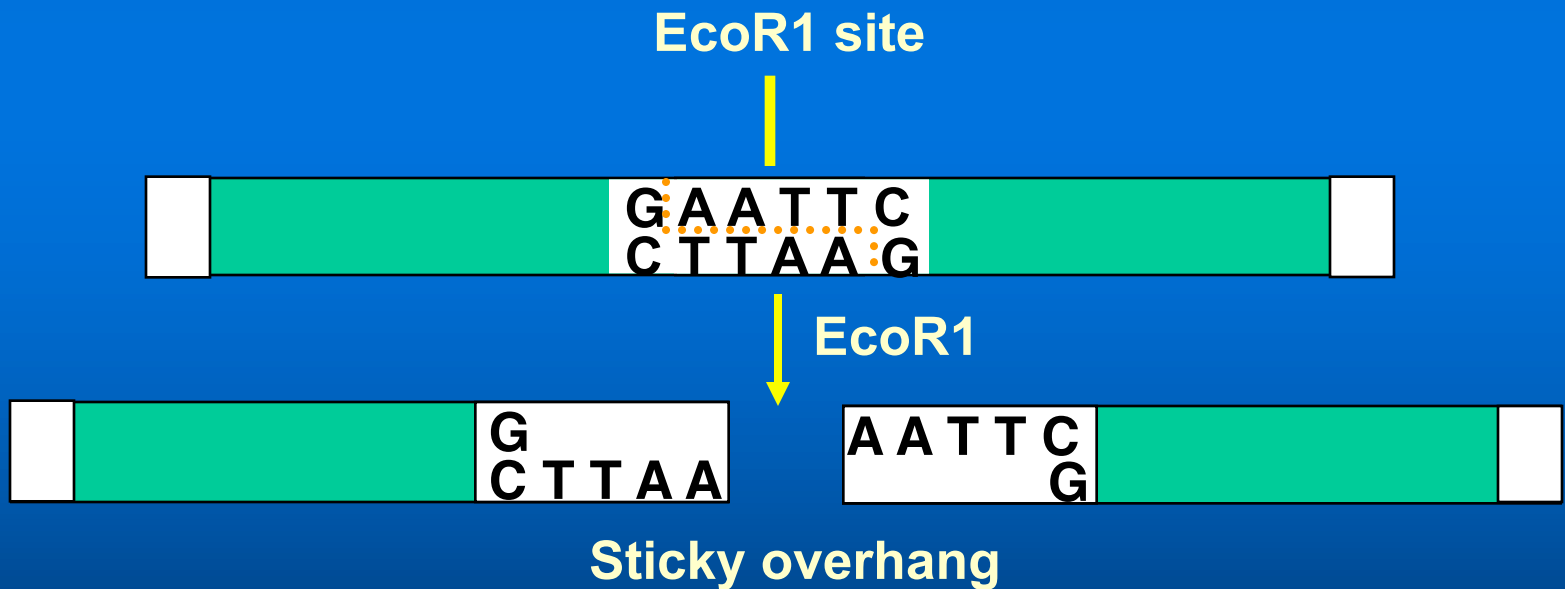
DNA Modification Enzymes

Produced for the CRC for Premium Quality Wool undergraduate program by;
Dr Phil Vercoe, The University of Western Australia.



Restriction Endonuclease

- Molecular scissors
- Cut DNA at specific base sequences
 - majority cut at palindromic sequences
 - 4 or 6 base palindromic sequences

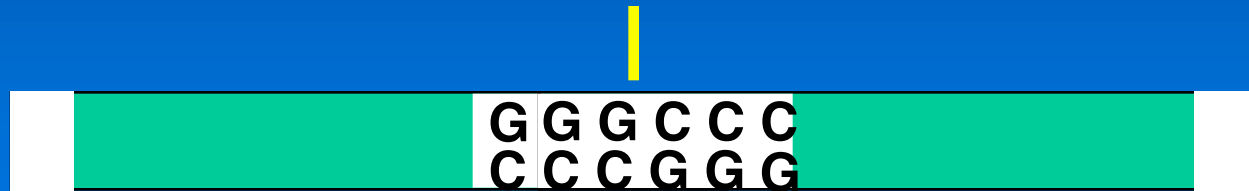


CRC
for
Premium
Quality
Wool



Restriction Endonucleases can make blunt ends

Sma1 site



Sma1



Blunt end

CRC

for

Premium

Quality

Wool



Restriction Endonucleases

- **Sticky ends**
 - tend to be a more specific way of joining foreign bits of DNA due to the overhang
 - can be “filled in” to form blunt ends
- **Blunt ends**
 - tend to be less specific
 - any two blunt ends can ligate (join)

CRC

for

Premium

Quality

Wool



Ligation

- simply joining DNA fragments
- DNA ligase is the molecular glue
- can join any DNA fragments having compatible ends
 - eukaryotic / prokaryotic
 - eukaryotic / eukaryotic
 - prokaryotic / prokaryotic

CRC

for

Premium

Quality

Wool