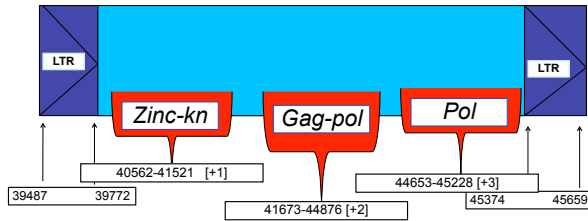


Brassica: An Undiscovered World of Transposable Elements

Justin Brown and Krelin Naidu
University of Georgia, BIOL 3240L, Athens, Georgia

Copia Annotations

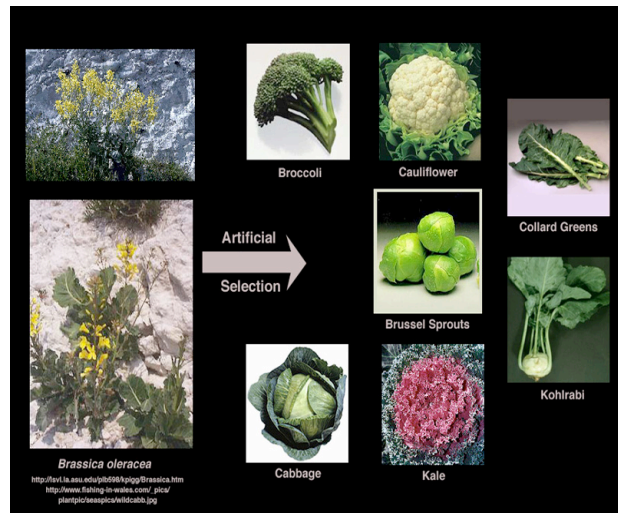
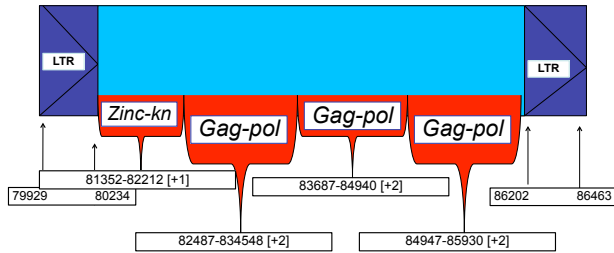
Ac183494: Retrotransposon



Abstract

Brassica Oleracea, a significant species of the mustards family, has proven to have several high nutritional and anti-cancerous properties. With its transgenic varieties, this cool weather crop has a genome of 600Mb. Much research indicates that both Class 1 retrotransposons and Class 2 DNA transposons have contributed to the expansion and change of the Brassica genome. While experimenting, specialized Actin primers were required in order to produce a successful band in the agarose gel. Copia and Gypsy superfamilies were used to determine transposable elements that appear to originate from a single ancestor long ago. Brassica has many cousins in the vegetable world including *Brassica rapa*, *Brassica napus*, *Brassica juncea*, *Brassica nigra*, and *Brassica carinata*; however, these forms of Brassica are more commonly known as cabbage, cauliflower, and Brussels sprouts.

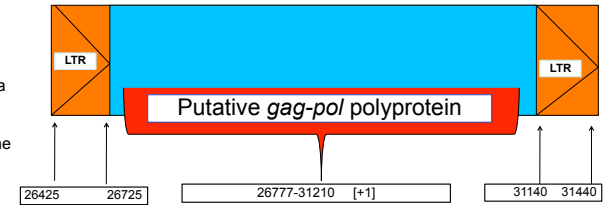
Ac183494: Retrotransposon



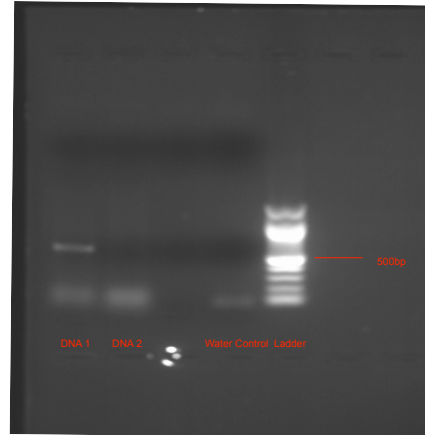
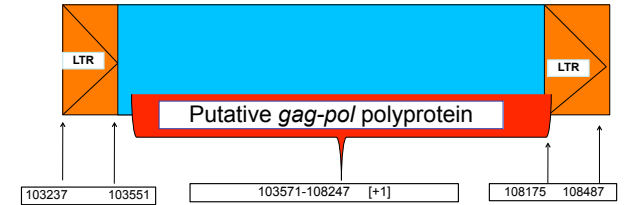
University of Georgia - Department of Geology

Gypsy Annotations

Ac189632: Retrotransposon



Ac189431: Retrotransposon



This PCR reaction demonstrates the use of specialized Actin primers. On the left, a band can be seen of the expected size. These results prove that the DNA was adequately extracted and prepared for gel electrophoresis.

Phylogenetic Tree

The following Tree indicates that Gypys and Copias come from two different superfamilies. Unlike the Gypsys with a very similar lineage, the Copias can be tracked to come from a common ancestor much further down the evolutionary line.

