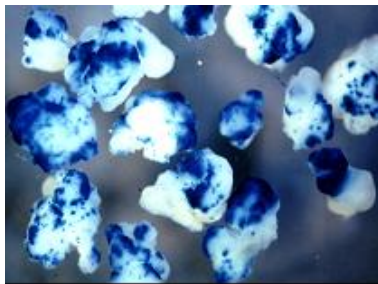


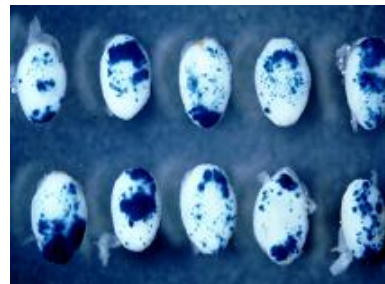
# PureIntro™

- **Agrobacterium-mediated transformation technology for monocot**
  - *Agrobacterium*
  - Monocot plant
    - Callus (dedifferentiated tissue)
    - Scutellum of Immature embryo

rice



calli



immature embryo

maize



immature embryo

# PureIntro™

## ■ Monocot transformation technology

### ■ Target plants

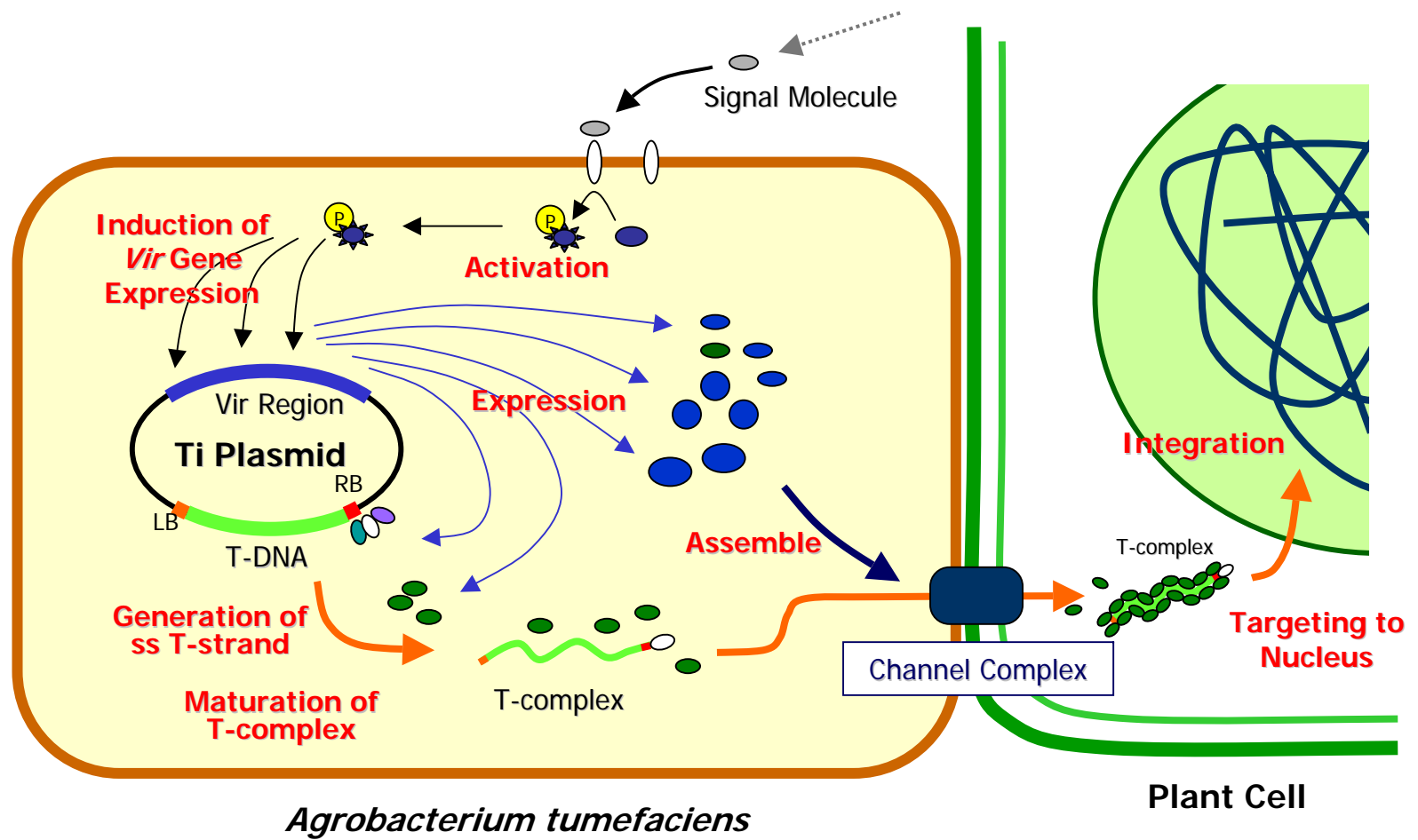
- Corn
- Rice
- Wheat
- Barley
- Switchgrass
- Miscanthus
- Sorghum
- Big bluestem
- Rye
- Oat
- Millet
- Turf
- Banana
- Pineapple
- Sugarcane

# PureIntro™

- ***Agrobacterium***
  - **Common soil bacteria**
  
- **DNA transfer capability**
  - Wild-type *Agrobacterium* makes crown gall via its gene transfer

# PureIntro™

## ■ T-DNA transfer mechanism



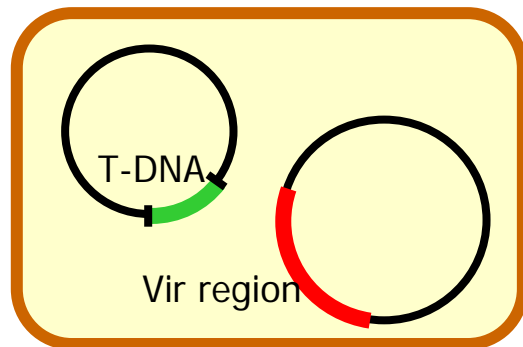
*Agrobacterium tumefaciens*

Plant Cell

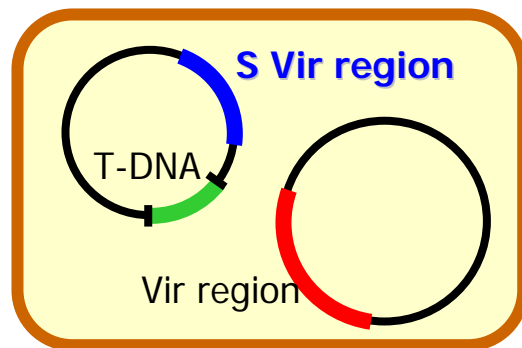


# PureIntro™

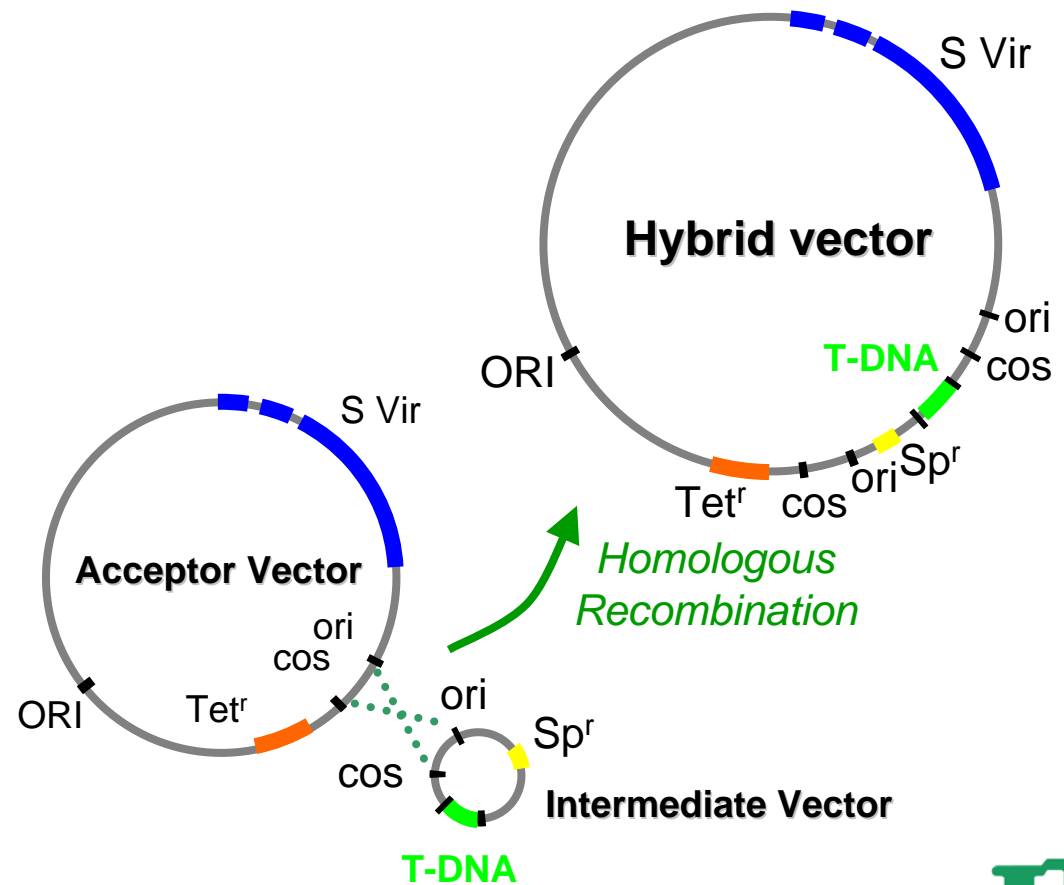
- Super-binary system, *more efficient*



Binary System

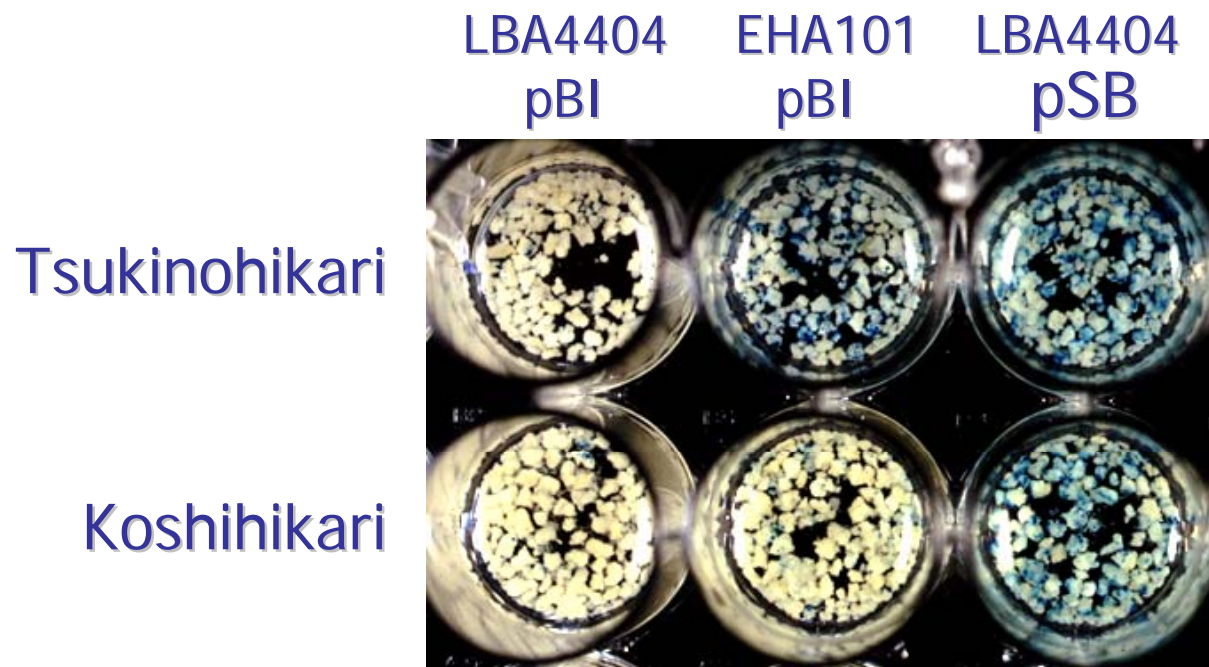


Super-binary System



# PureIntro™

- **Vectors and Strains**
  - Transient assay using rice calli



# PureIntro™

## ■ Strengths

- Able to introduce DNA with defined ends.
- Able to introduce relatively large fragment.
- Low copy.
  - Low frequency of gene silencing.
- Low frequency of somaclonal variations.
  - High fertility and high quality.

***Industrial standard***



## ■ Publications

### ■ Articles

- Hiei Y., Ohta S., Komari T. and Kumashiro T.
  - Efficient transformation of rice (*Oryza sativa* L.) mediated by *Agrobacterium* and sequence analysis of the boundaries of the T-DNA. *Plant J.* **6**: 271 (1994)
- Ishida Y, Saito H, Ohta S, Hiei Y, Komari T and Kumashiro T.
  - High efficiency transformation of maize (*Zea mays* L.) mediated by *Agrobacterium tumefaciens*. *Nature Biotech.* **14**: 745 (1996)
- Hiei, Y., and Komari, T.
  - Improved protocols for transformation of indica rice mediated by *Agrobacterium tumefaciens*. *Plant Cell, Tissue and Organ Culture* **85**, 271-283 (2006)



## ■ Publications

### ■ Patents

- Callus (dedifferentiated and dedifferentiating tissues)
  - Method of transforming monocotyledon  
[WO 94/00977](#)
- Immature embryo
  - Method of transforming monocotyledon by using scutellum of immature embryo.  
[WO 95/06722](#)