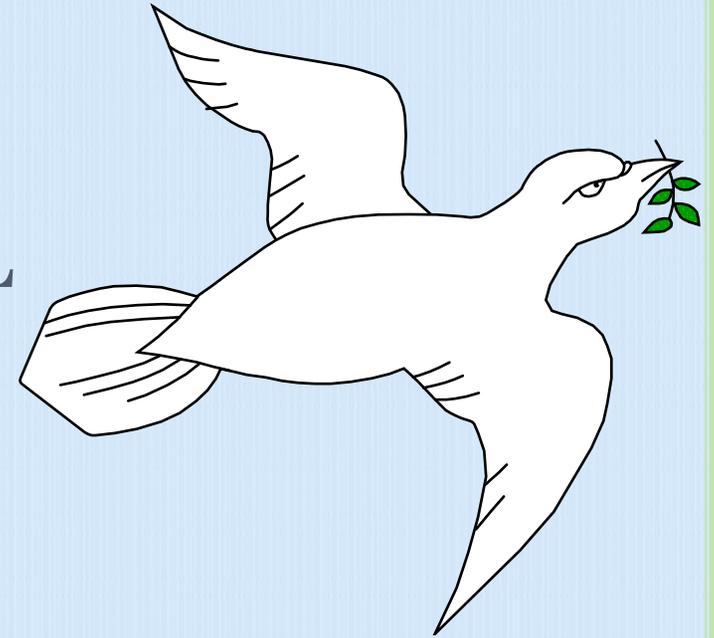


TRANSGENIC ANIMAL



By

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INTRODUCTION

- A transgenic animal is one that carries a foreign gene that has been deliberately inserted into its genome.
- The foreign gene is constructed using recombinant DNA methodology.
- DNA introduced is known as transgene.
- In July 2000, researchers from the team that produced Dolly reported success in producing transgenic lambs in which the transgene had been inserted at a specific site in the genome and functioned well.





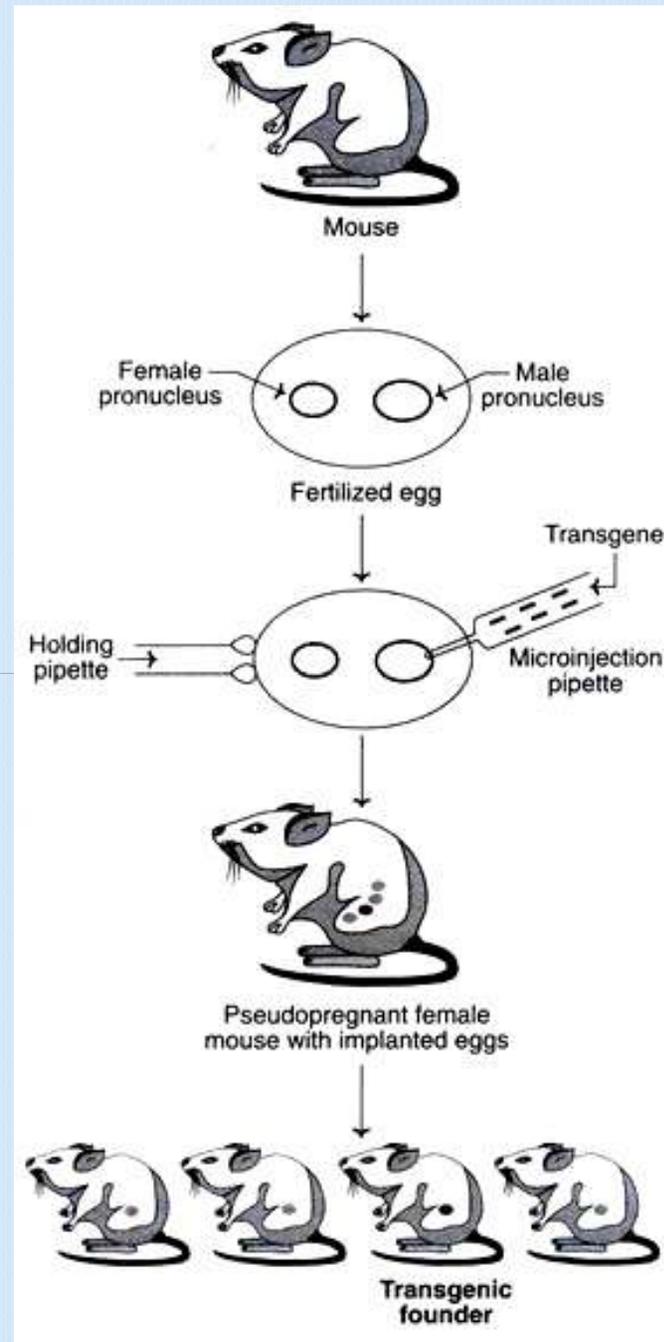
METHODS OF PRODUCTION

- Microinjection
- Retroviral method
- And
- Stem cell Technology



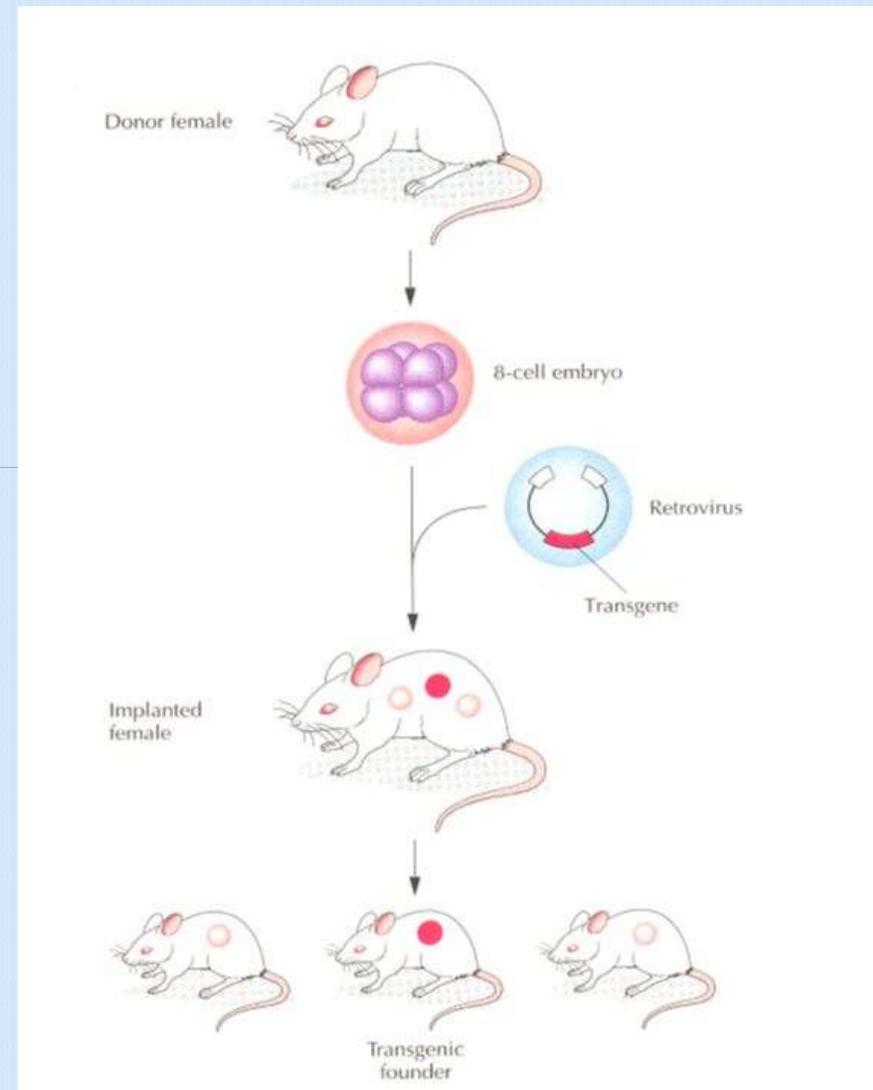
MICROINJECTION

- Remove egg
- Fertilize invitro
- Transgene introduces to male pronucleus
- Fertilized embryo implanted to female



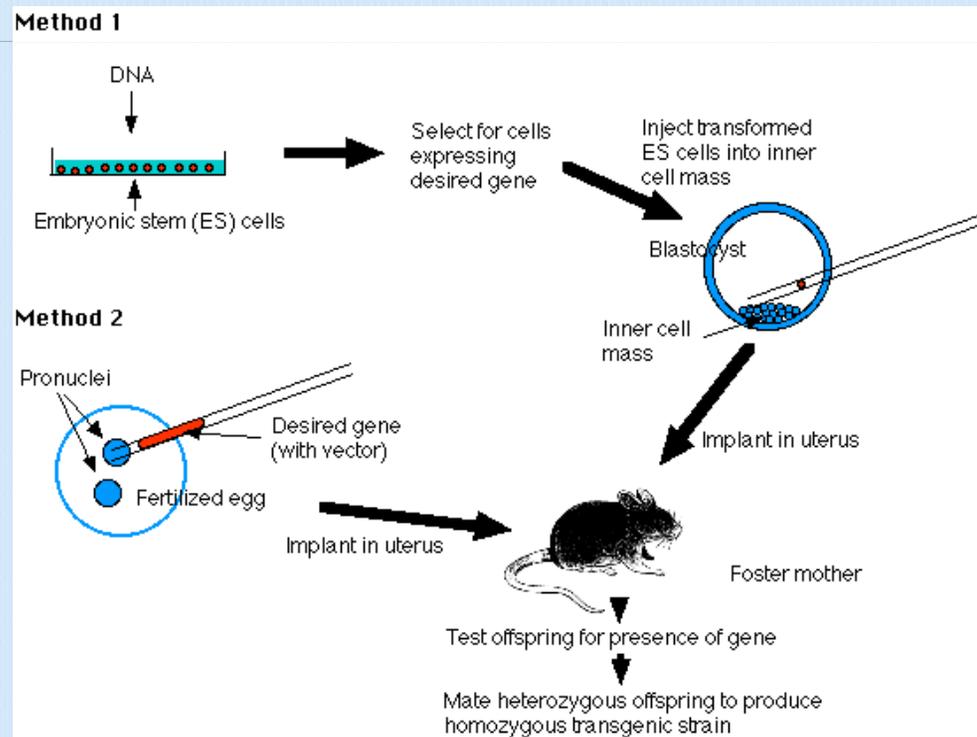
RETROVIRUS

- Retrovirus is a animal vector
- Carry transgene
- Vector introduce to host cell fertilized invitro with few cell divide



STEM CELL

- Embryonic stem cell obtained from blastocyst
- Transgene inserted to ES by microinjection
- Reinsert the cells to blastocyst then host



APPLICATIONS

- Mice
- Sheep
- Fish
- Goat
- Pigs
- Chicken



MICE

- Production of Antibody
- Production of Recombinant proteins
- Cancer model
- Disease model – Alzheimer disease, huntington disease
- Surgical techniques



TRANSGENIC FISH

- More rapid growth - Salmon, catfish, tuna
- Pollution indicator
- Pet – Goldfish with different color



TRANSGENIC SHEEP

- Improved wool production
- Production of human blood clotting factor VIII
- Production of drugs in milk



TRANSGENIC PIGS

- Production of Omega 3 fatty acid
- Xenotransplantation
- Disease model – Cardiovascular, diabetes, Alzheimer



TRANSGENIC CHICKEN

- Low cholesterol
- Viral and bacterial resistant
- Fast growth
- Production of proteins



