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ORIGINAL BIOTECHNOLOGIES AND AGENETS IN GENE THERAPY AND REGENERATIVE MEDICINE

Gene/Viral Therapy vectors for potently and safely treating cancer et. al

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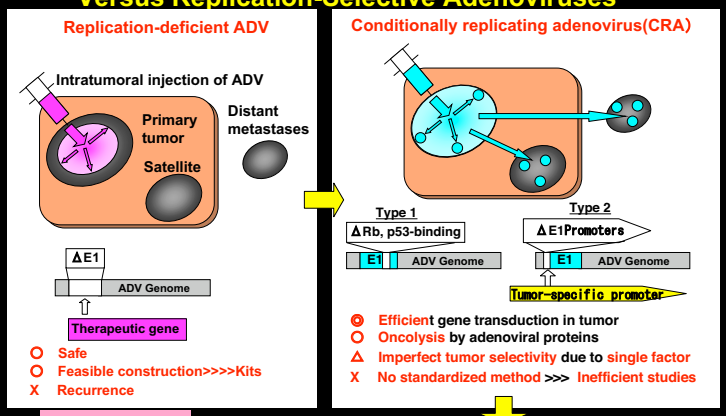
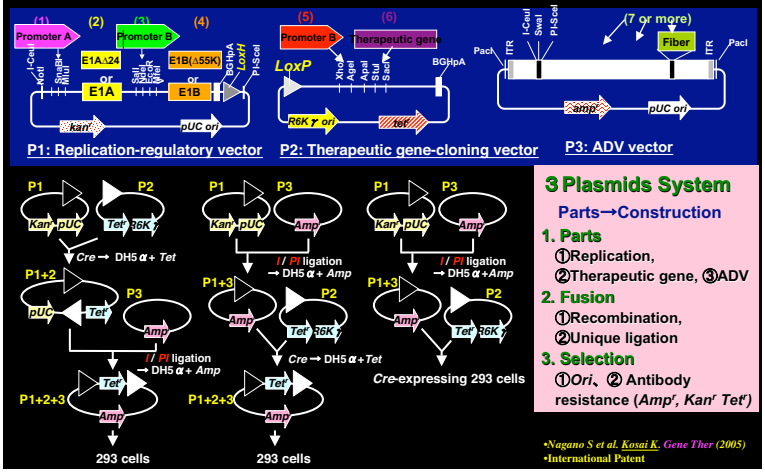
Cancer Gene Therapy Using Replication-Deficient Versus Replication-Selective Adenoviruses



m-CRA!! (CRA that specifically target tumor cells with "multiple" factors)

Constitution and Construction of m-CRA



3 Plasmids System

Parts→Construction

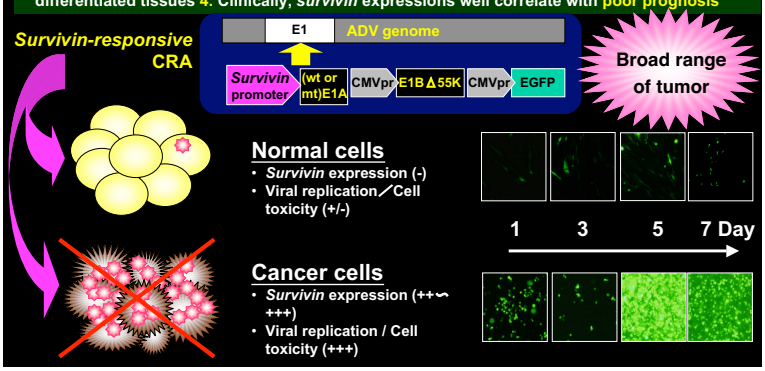
1. **Parts**
   ①Replication, ②Therapeutic gene, ③ADV
2. **Fusion**
   ①Recombination, ②Unique ligation
3. **Selection**
   ①*Ori*、② Antibody resistance (*Amp*^{r}, *Kan*^{r} *Tet*^{r})

•*Nagano S et al. Kosai K. Gene Ther (2005)*
•International Patent

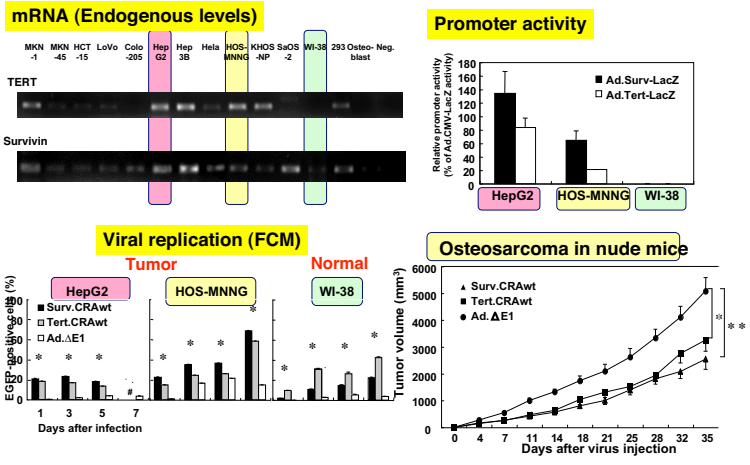
Survivin-Responsive CRA Replicates in Tumor-Specific Manner

***Survivin*?**

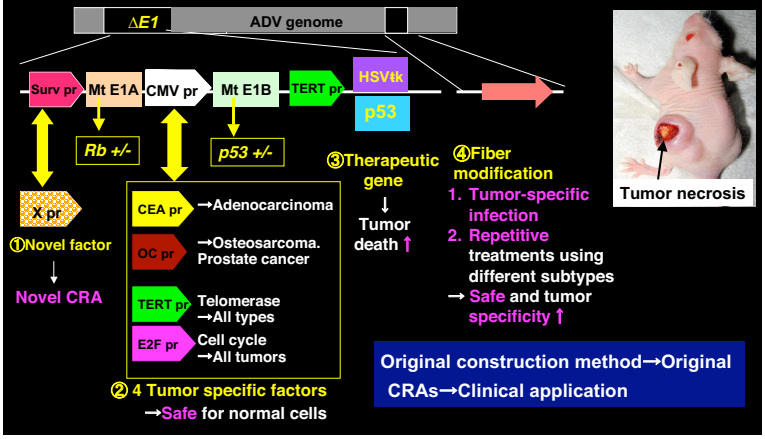
1. Inhibitor of apoptosis gene family 2. Predominantly G2/M specific expression and interaction with microtubules 3. High expression in cancer, but undetectable in normal differentiated tissues 4. Clinically, *survivin* expressions well correlate with poor prognosis



Surv.CRA Elicits More Tumor-Specific Killing Than Tert.CRA

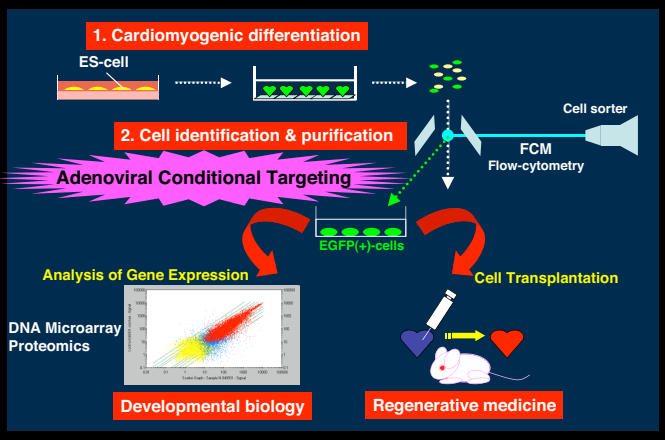


Enormous Potentials of Our Method to Efficiently Develop and Improve m-CRAs for Innovative Anti-Cancer Agents



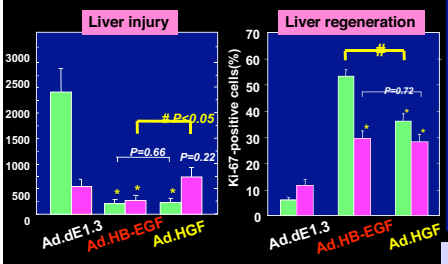
Original construction method→Original CRAs→Clinical application

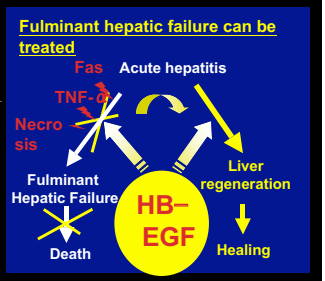
ES Cell-based Regenerative Medicine And Developmental Biology



3. HB-EGF for Treating Liver Disorders

Regenerative Medicine





Regeneration and treatment within the body→ Ideal medicine

HB-EFG is more potent than HGF
→A novel therapeutic agent for liver diseases

NC Khai et al. & Kosai K. J Hepatol (2006)