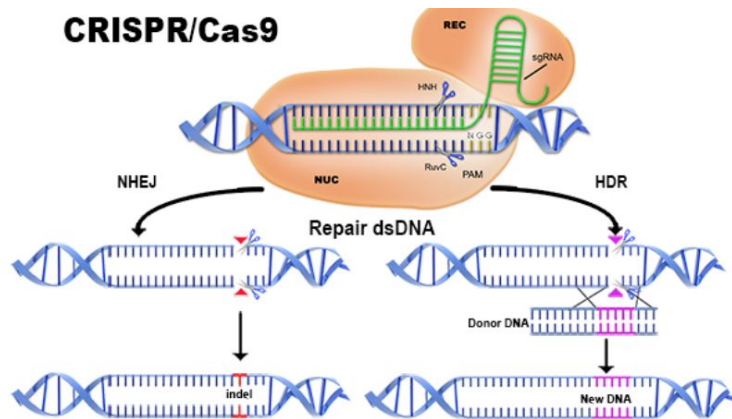


Cycle 11 Human Genetic Engineering

1. In multiple choice questions, identify definition of the "minimal genome".
 -
2. basic process for creating "three parent babies".
 - Babies which have the parents nucleus in the embryo but an inserted cell/cells of a another healthy person for embryo repair
3. basic process for cloning animals by somatic cell nuclear transfer (SCNT).
4. role of epigenetic barriers in animal cloning.
5. example of cloned animals.
 - Cloning companies that can clone an animal to produce an animal (\$12,000)
 - However they are not the same because of environmental factors and training the animal
 - Telomeres may be shorter, activation of different cells changed
 - ex) pets, prize winning race horses etc

6. basic mechanism for CRISPR Cas9 genome editing

- The bacterial gene can cut any piece of DNA by using Cas9



7. fundamental ethic issues arising from human genome editing

- Is it okay for harvesting an embryo just for the use of growing other organs?

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8. estimate of number of genes necessary to sustain independent lif
 - Synthetic Life- artificial life

9. strategies for identifying essential genes.

10. current trend in cost of DNA sequencing

11. steps in typical DNA sequencing methodologies

12. structural features of dideoxynucleotides

13. basic mechanism of classical vs. automated Sanger sequencing

14. basic mechanism of massively parallel sequencing

15. strategy underlying whole genome shotgun sequencing

16. strategy underlying metagenomics