

DNA EXPLORER

The synthetic biology board game.

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1 ATG
ATG, also called start codon, is the triplet every gene starts with.
Roll 3 to place your piece on the first triplet, then roll again.

22 HISTONE
DNA is looped around proteins called histones, so it can be packaged tightly. Make 1 2/3 circles around the table and switch seats with the nearest player.

24
Go back to the beginning.
ccdB is a toxic gene that kills most of the cells. One exception is the host cell. One exception is the cell that carries the ccdB gene.

19 RESISTANCE
Resistance gene makes bacteria resistant to antibiotics or other dangers from the environment. You don't have to obey the instructions. If you have gained resistance to one of the fields, you don't have to obey the instructions.

20
You have improved the yield of biolytic pathway by binding enzymes to a DNA program. Next round multiply the number you roll by two.

26 TRANS-POSON
Transposon, also known as jumping gene, can change its position in the genome. Transposase jumps to field 36.

29
Wait here until all the contestants overtake you.
If the plasmid DNA you put in your cell is not copied (or if you get a mutation), it means it is not applicable. It often happens.

4 PROMOTER
Promoter is a sequence that allows a gene to be expressed - to play its role in the cell. You have induced the promoter, roll the dice again.

5
If you split a fluorescent protein in two and bring the two halves close together, for example bind them to adjacent sites on DNA, protein starts fluorescing again.
6
If there are two players on both of the split fields, you're too busy fluorescing and miss a round.

17
Wait here until you roll 3 or 6 to stay in-frame.
Making a fusion protein is as easy as sticking two genes together. You have to make sure the right order of amino acids is kept together. The score depends on the correct reading frame.

40
Microsatellites are short repetitive sequences in the genome. Forensic analysis used in forensics, one you're not guilty and neither are your siblings is playing, the game goes for them.

50
ICGEM GRAND PRIZE!
Congratulations, you've won the ICGEM grand prize! You will receive a special award. You will be invited to the ICGEM 2011 competition in Cambridge, Massachusetts.

31 HISTONE
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8 ZINC FINGER
Zinc fingers recognize and bind particular DNA sequences called operators. Jump to zinc finger operator.

44 HISTONE
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39
Terminator is the sequence that stops transcription of DNA to RNA. Terminator stops you from continuing to the next round.

34
Unless you keep silent for whole round, you are not allowed to roll the next time.
Silencing RNA (siRNA) can be translated to a protein. It won't be translated, which means it won't be translated. siRNA can be translated to a protein. It won't be translated, which means it won't be translated.

10 HISTONE
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11
To mutate EcoRI site in your plasmid, you have to give the piece of DNA called EcoRI. This will give the piece of DNA called EcoRI. This will give the piece of DNA called EcoRI.

42
Viruses incorporate their genome into the host cell. Some viruses can replicate in the host cell and then fill the cell and infect the next time he rolls the dice. You have worked up a time he rolls the dice. You move your piece.

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