**How Does DNA Determine the Traits of an Organism?**

Introduction: In this simulation, you will examine the DNA sequence of a fictitious organism: the Snork. Snorks were discovered on the planet Dee Enae in a distant solar system. Snorks only have one chromosome with 6 genes on it. You job is to analyze the genes of its DNA and determine what traits the organism has.

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| **SNORK DNA AND TRAITS** |
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| --- | --- |
| tRNA anti-codon | Amino Acid Number |
| ACC | 20 |
| AGC | 16 |
| CGA | 2 |
| AAC  | 4 |
| CGC | 3 |
| GGG | 5 |
| AGG | 7 |
| AAA | 8 |
| UUU | 9 |
| GGU | 12 |
| UAU | 13 |
| CCC | 1 |
| AUC | 6 |
| CUA | 10 |
| GGA | 11 |
| UAA | 14 |

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|  |  |
| --- | --- |
| Amino Acid Sequence | Trait |
| 20-11-13 | hairless |
| 20-12-13 | hairy |
| 20-12-12 | plump |
| 13-14-15 | skinny |
| 16-2 - 5 | 4 legged |
| 16-5 - 2 | 2 legged |
| 12-7-8 | round head |
| 5-7-8 | block head |
| 9-8 - 8 | no tail |
| 9-4 - 8  | tail |
| 11-3-2 | slanted eyes |
| 11-3-3 | wide round eyes |
| 6-6-10 | male |
| 6-6-14 | female |

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**Observations and Analysis of Snork DNA**
You are given a chromosome from a Snork with the following sequence. Each gene has only 3 amino acids. Your job is to determine the sequence of amino acids for your specimen. Write the complimentary mRNA, tRNA, the amino acid sequence it codes for and the related trait in the chart below.

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| --- | --- | --- | --- | --- | --- | --- |
| Gene | **1** | **2** | **3** | **4** | **5** | **6** |
| DNA | ACCGGTTAT | AGCCGAGGG | TTTAACAAA | GGACGCCGA | GGGAGGAAA | ATCATCCTA |
| mRNA |  |  |  |  |  |  |
| Amino Acid |  |  |  |  |  |  |
| Trait |  |  |  |  |  |  |

Now draw your Snork based on its traits!!