

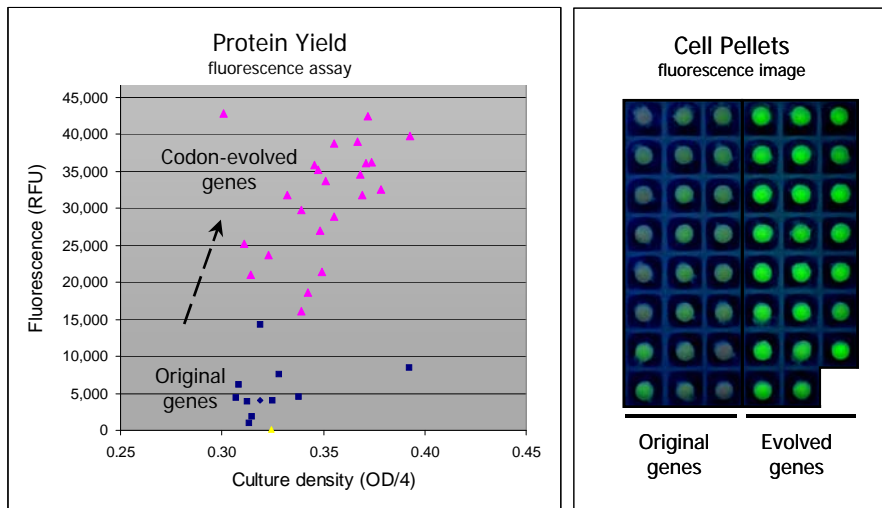
# Maximize Your Protein Yields with Empirical Codon Optimization!

**Empirical:** Novici unlocks the universe of codon diversity with the unique capabilities of GRAMMR™ technology to produce genes with peak expression potential

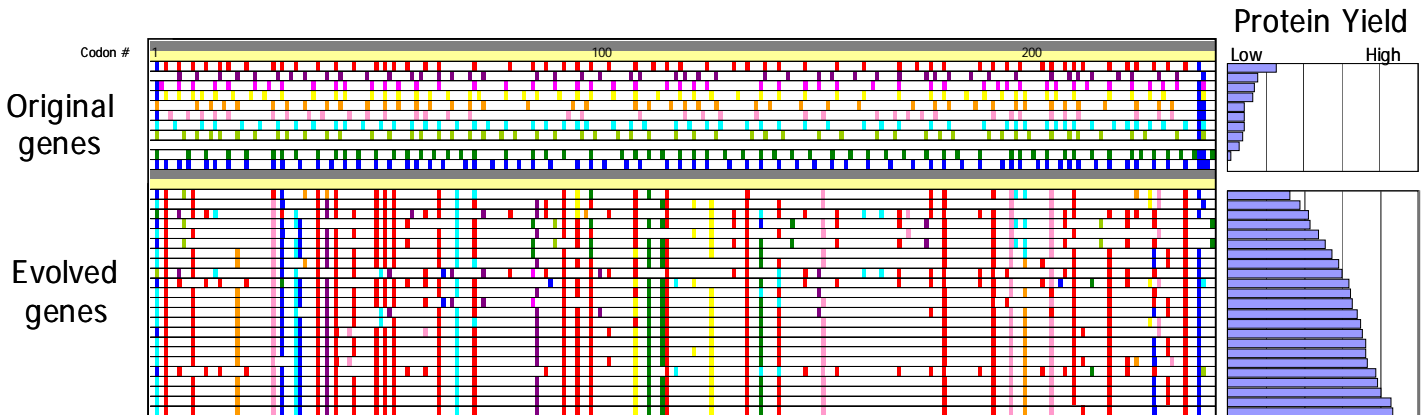
**Evolutionary:** Iterative rounds of expression screening and reassortment of codons among top scoring clones evolve genes toward their most favorable translation and yield profiles

**Customized:** Optimizes each gene for the host species and strain of your choice

**The Rational Choice for Design:** End your dependence on codon usage lore and computer design algorithms



**Yield Enhancement Study:** Empirical optimization of the GFP gene for yield in a *E. coli*. A codon diversity library of the GFP gene under a constitutive promoter was screened through three rounds for high protein yield, resulting in a three-fold increase. In a different *E. coli* strain, an even greater increase was obtained.



**Codon Usage Pattern Analysis:** Codon usage patterns and yield values are displayed for each position in a small set of genes evolved for higher expression yields. All genes encode the same protein sequence, but with different combinations of codons. Unique and unexpected patterns of codon usage emerge in the resulting set of genes.

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