

## **Backtranslation**

write a python code that will use codon usage frequencies (e.g. here <https://www.genscript.com/tools/codon-frequency-table>) to backtranslate a protein sequence of an antibody into DNA sequence. Verify that codons in the resulting DNA sequences are sampled according to their usage.

Choose several (three to ten) restriction enzyme DNA patterns (e.g. from here <https://www.sigmaaldrich.com/technical-documents/articles/biology/restriction-enzymes.html>) and check for their presence in the backtranslated sequence. Change the DNA sequence so that no restriction enzyme patterns are present while making sure that the DNA sequence still translates into the original protein sequence.

use only standard python modules (no numpy, scikit, biopython, etc.)