

Natural sequence

GAG CTG GTA ATT TCG CTA ATC GTC GAA TCT

SAME encoded protein sequence
Glu Leu Val Ile Ser Leu Ile Val Glu Ser

SAME amino acid composition
2 Glu, 2 Leu, 2 Val, 2 Ile, 2 Ser

SAME base composition
7 G, 6 C, 7 A, 10 T

SAME CODON USAGE
GAG,CTG,GTA,ATT,TCG,CTA,ATC,GTC,GAA,TCT

GAG CTG GTA ATT TCG CTA ATC GTC GAA TCT
AGC TGG TAA TTT CGC TAA TCG TCG AAT

Natural off-frame triplet preferences

Synonym-swapped sequence

swaps
GAA CTA GTC ATC TCT CTG ATT GTA GAG TCG

GAA CTA GTC ATC TCT CTG ATT GTA GAG TCG
AAC TAG TCA TCT CTC TGA TTG TAG AGT

Randomized off-frame triplet preferences