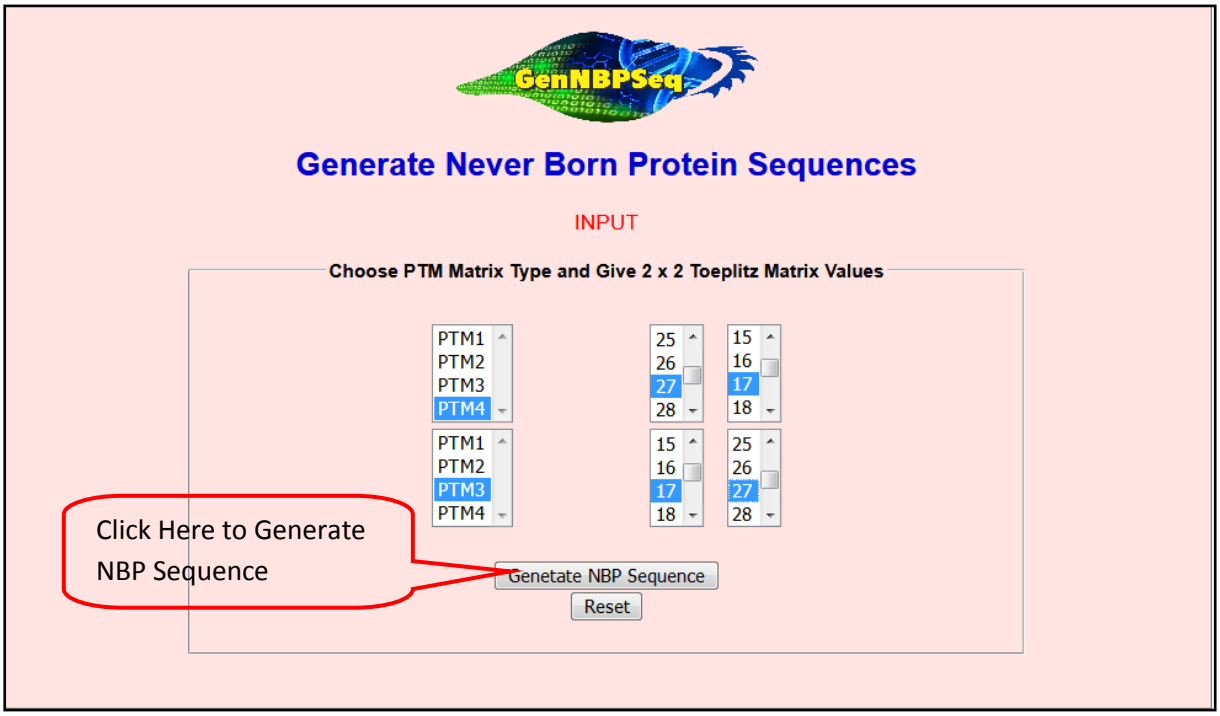
STEP 1:


GenNBPSeq
Generate Never Born Protein Sequences
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HOME
The "GenNBPSeq" is an online web server to generate a Never Born Protein (NBP) sequence and its corresponding DNA sequence, using the Partitioned Gray code representations of Universal Genetic Code combined with a novel Toeplitz matrix approach, as outlined in Muthugobal et. al. (2018)[1]. We generate the three sample NBP sequences NBP_SEQ_1, NBP_SEQ_2 and NBP_SEQ_3 using this "GenNBPSeq" online web server.
Click Here
Choose Toeplitz Matrix Order
2x2 Matrix
3x3 Matrix
4x4 Matrix
Click here for a brief Description of Generation of the three Sample NBP Sequences.
Click here to get Sample Input and Output NBP_SEQ_1, NBP_SEQ_2 and NBP_SEQ_3.
Click here to get Partitioned Toeplitz Matrix types PTM1, PTM2, PTM3 and PTM4.
Click here for Universal Genetic Code.
Please Cite
[1] B.K.N. Muthugobal, G. Ramesh, K. Muthuvel Prasath, S. Suvaithenamudhan and S. Parthasarathy*(2018) Gray Code Representation of the Universal Genetic Code and Generation of Never Born Protein Sequences using Toeplitz Matrix Approach: Sequence and Structure Analysis. To be communicated.
Further Reference
He M, Petoukhov S and Ricci PE (2004) Genetic code, Hamming distance, and stochastic matrices. Bulletin of Mathematical Biology, 66, 965-973.
Please, send your comments, suggestions to: bdubioserver@gmail.com
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STEP 2:


GenNBPSeq
Generate Never Born Protein Sequences
INPUT
Choose PTM Matrix Type and Give 2 x 2 Toeplitz Matrix Values
PTM1
PTM2
PTM3
PTM4
25
26
27
28
15
16
17
18
PTM1
PTM2
PTM3
PTM4
15
16
17
18
25
26
27
28
Click Here to Generate NBP Sequence
Genetate NBP Sequence
Reset

STEP 3:



Generate Never Born Protein Sequences

RESULT

INPUT

```
Toeplitz Matrix Order : 2 x 2

Partitioned Toeplitz Matrix type for First Row  : PTM1

Partitioned Toeplitz Matrix type for Second Row : PTM1

Toeplitz Matrix : 1  1

                  1  1
```

OUTPUT

```
Never Born Protein (NBP) and DNA Sequences

>NB_DNA_SEQ   768 bp
ccccttttctttccctttttccctccccctttctttccctttttccctccaacggtagtga
cagtggtaacgacaacggtagtgacagtggtaacgaacaatggcggtaacggtggcaata
acaatggcggtaacggtggcaataaacagtgatggcaatggtgacagcaacagtgatggc
aatggtgacagcccactgtcgttaccgttgtcactaccactgtcgttaccgttgtcacta
aaaagggagggaaaggggaaagaaaaagggagggaaaggggaaagaaccattgctgtc
actgttgccatcaccattgctgtcactgttgccatccaccgttattgccattgttaccgc
caccgttattgccattgttaccgccccctttctttccctttttccctccccctttctttc
ccttttccctccaacggtagtgacagtggtaacgacaacggtagtgacagtggtaacga
acaatggcggtaacggtggcaataacaatggcggtaacggtggcaataaacagtgatggc
aatggtgacagcaacagtgatggcaatggtgacagcccactgtcgttaccgttgtcacta
ccactgtcgttaccgttgtcactaaaaagggagggaaaggggaaagaaaaagggaggga
aaggggaaagaaccattgctgtcactgttgccatcaccattgctgtcactgttgccatc
caccgttattgccattgttaccgccaccgttattgccattgttaccgc

>NBP_SEQ   244 aa
PLSFPFSLPLSFPFSLQRQWRQRQWRTMAVTVAITMAVTVAINSDGNGDSNSDGNGDSPL
SLPLSLPLSLPLSLKREGKGERKREGKGERTIAVTVAITIAVTVAIHRYCHCYRHRYCHC
YRPLSFPFSLPLSFPFSLQRQWRQRQWRTMAVTVAITMAVTVAINSDGNGDSNSDGNGDS
PLSLPLSLPLSLPLSLKREGKGERKREGKGERTIAVTVAITIAVTVAIHRYCHCYRHRYC
HCYR
(Protein sequence after removing stop codons)
```