

Mission Name

The DNA Vaccine

Historical Context

Ethan and Claire uncover a crucial book containing the sequence of the DNA Vaccine they've been searching for during their adventures.

Technical Synopsis

The mission revolves around decrypting or decoding a crypto message hidden within the DNA sequence, essential for advancing their quest.

Mission Brief

In a designated location, an image depicting the DNA vaccine sequence awaits discovery. Can you decipher it and reveal the hidden message?

Detailed Assignment

Tasked with a vital role, Ethan must identify the cross-reference sequence hidden within the DNA and reconstruct it, a step critical for progressing in their journey.

Location

SHANGHAI | BACKSTREET BAR

Tools

- IP

Questions

What is the QR matrix size?

- 18x18 | 324

What is the DNA letter to binary sequence translation codes?

- A=11, C=01, G=10, T=00

Write the full codon sequence.

- GTCAC TTCGCTTAGTTCTACGTTTT CAGTATTTACTTCGGGTTTCGTTTTAATCACATACTTC
AGCTTTTCTCGCTCGGTTTCGTT CAGCTTTTGGGGGTTTTCTATCAATTTTATATCTGCTC
GATTTCTATTCAATTCAGCTGAAGTATTTGAATATTTT

Items

1. Read QR as a set of 1 and 0
2. Search for DNA code translation
3. DNA code translation is A=11, C=01, G=10, T=00

Categories

- Encoding
- Steganography

Write Up

To solve this cryptographic challenge, we're given a QR code that, when scanned, presents us with a binary sequence. This binary sequence must be converted into a DNA sequence, which is then used to resolve the final flag. The process involves several steps of translation, each critical to deciphering the message accurately.



Ilustración 1

```
100001110100000110010000111000000100110110000000000111100011000000110100000110
101000000110000000001111000111011100110100000111100100000000010001100100011010
000000011000000111100100000000101010101000000000000100110001111100000000110011
000100100100011011000000010011000001111100000111100100101111100011000000101111
001100000000
```

Step 1: Scanning the QR Code

Upon scanning the provided QR code, players are presented with a long binary sequence. This sequence is composed of 1s and 0s, representing data that needs to be translated into a DNA sequence.

Step 2: Binary to DNA Translation

The binary data from the QR code needs to be converted into a DNA sequence. The binary sequence can directly represent DNA bases depending on the translation rule provided or inferred. However, without a specific rule in the prompt, we can consider a common approach where:

- 00 represents A (Adenine)
- 01 represents C (Cytosine)
- 10 represents G (Guanine)
- 11 represents T (Thymine)

Given the binary data and assuming a direct conversion without the specific translation rules mentioned, the process would involve mapping each pair of binary digits to their corresponding DNA bases.

DNA LETTERS	BINARY SEQUENCE
A	11
C	01
G	10
T	00

Ilustración 2

Step 3: Interpreting the DNA Sequence

The DNA sequence obtained from the binary data (or possibly the given DNA sequence directly) is:
Copy code

```
GTCAC TTCGCTTAGTTCTACGTTTT CAGTATTTACTTCGGGTCGTTTTAATCACATACTTCAGCTTTTCTCGC
TCGGTTTCGTT CAGCTTTTGGGGGTTTTCTATCAATTTTATATCTGCTCGATTTCTATTCAATTCAGCTGAA
GTATTTGAATATTTT
```

To resolve the flag from this DNA sequence, there would typically be a step involving translation from DNA to alphanumeric characters or another meaningful format.

This could involve:

- Mapping specific DNA codons (triplets of bases) to letters or numbers

- Applying a cryptographic key or cipher that translates the DNA sequence into readable text

DNA CODE

Codon	English	Codon	English	Codon	English	Codon	English
AAA	a	CAA	q	GAA	G	TAA	W
AAC	b	CAC	r	GAC	H	TAC	X
AAG	c	CAG	s	GAG	I	TAG	Y
AAT	d	CAT	t	GAT	J	TAT	Z
ACA	e	CCA	u	GCA	K	TCA	1
ACC	f	CCC	v	GCC	L	TCC	2
ACG	g	CCG	w	GCG	M	TCG	3
ACT	h	CCT	x	GCT	N	TCT	4
AGA	i	CGA	y	GGA	O	TGA	5
AGC	j	CGC	z	GGC	P	TGC	6
AGG	k	CGG	A	GGG	Q	TGG	7
AGT	l	CGT	B	GGT	R	TGT	8
ATA	m	CTA	C	GTA	S	TTA	9
ATC	n	CTC	D	GTC	T	TTC	0
ATG	o	CTG	E	GTG	U	TTG	space
ATT	p	CTT	F	GTT	V	TTT	. (period)

Ilustración 3

Step 4: Resolving the Flag

The final step involves interpreting the translated DNA sequence to extract the flag. Without a specific translation rule or cipher provided for converting the DNA sequence to text, this step assumes a decryption method or key is known to the player, which would reveal the flag.

If we were to follow a specific cipher or translation method, the exact process would depend on that method's details, which are not provided in the prompt. In a real-world scenario, the translation from DNA to the flag might involve recognizing patterns, applying a known cipher, or using computational methods to analyze the sequence.

Flag Information

Th3FI4g.1S.h3R3.W1th1N.DNA.B1N.QR.4nd.m4Ny.C0d1NGS.GZ.