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The Perth Group

How to confirm Rakowicz-Szulczynska's findings of HIV-1 envelope gene sequences in breast cancer tissue.

Go to

[http://www.ncbi.nlm.nih.gov/nuccore/?term=\(Rakowicz-Szulczynska\)+AND+%22HIV-like+human+cancer+virus%22%5Bporgn%3A_txid433832%5D](http://www.ncbi.nlm.nih.gov/nuccore/?term=(Rakowicz-Szulczynska)+AND+%22HIV-like+human+cancer+virus%22%5Bporgn%3A_txid433832%5D)

This returns links to the 22 DNA sequences from breast and prostate cancer tissue deposited by Rakowicz-Szulczynska in the NCBI database.

Copy the Accession number (AF073469.1) of the first sequence.

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- [HIV-like human cancer virus isolation-source patient 7 breast cancer-associated antigen \(RAK alpha\) gene, complete sequence](#)
 1. [alpha\) gene, complete sequence](#)
142 bp linear DNA
Accession: AF073469.1 GI: 3925383
[GenBank](#) [FASTA](#) [Graphics](#)

Go to https://blast.ncbi.nlm.nih.gov/Blast.cgi?PAGE_TYPE=BlastSearch

Paste AF073469.1 into the top, left-hand box "Enter accession number(s), gi(s), or FASTA sequence(s)".

Scroll down to the bottom of the page and click the BLAST button on the hand side. Wait until the program finishes calculating (1-2 minutes).

When the results appear scroll down below the graphic to the heading "Sequences producing significant alignments".

Beginning at the fifth line these are the first 100 alignments between this breast cancer sequence and HIV-1 genomes. The sequences have lengths 141-143 nucleotides, identities 94-100% and virtually zero eValues. eValue is roughly the probability of the HIV-1 sequence being a chance finding. E-values $<10^{-6}$ are significant.

Repeat for other sequences.

References

1. Rakowicz-Szulczynska EM. Viral markers RAK in early diagnosis and therapy of breast, ovarian, uterine, and prostate cancers. In: Diamandis E, Fritsche H, Lilja H, Chan D, Schwartz M, eds. *Tumor markers: Physiology, Pathobiology, Technology, and Clinical Applications*: American Association for Clinical Chemistry; 2002.

2. Rakowicz-Szulczynska EM, Jackson B, Szulczynska AM, Smith M. Human immunodeficiency virus type 1-like DNA sequences and immunoreactive viral particles with unique association with breast cancer. *Clin Diagn Lab Immunol*. Sep 1998;5(5):645-653.