

author: Akshara Balachandra title: Find a Gene Project (BGGN 213) date: May 15, 2019 —

Question 1: Name of the protein

Name: Sonic Hedgehog protein isoform 1 preprotein (SHH)

Accession: NP_000184.1

Species: Homo sapiens

Question 2: BLAST search

Method: TBLASTN (2.7.1) search against Xenopus ESTs

Database: Expressed sequence tags (est)

Organism: Xenopus (Taxid: 8353)

The screenshot shows the NCBI BLAST search interface for a TBLASTN search. The search is titled "Translated BLAST: tblastn". The query sequence is "ref|NP_000184.1". The search set is "Expressed sequence tags (est)" for the organism "Xenopus (taxid:8353)". The search is performed using the "BLAST" algorithm. The search results are displayed in a table with columns for "Query", "Sbjct", and "Score". The search results show a single hit with a score of 26. The search parameters are as follows:

- Query: ref|NP_000184.1
- Database: Expressed sequence tags (est)
- Organism: Xenopus (taxid:8353)
- Exclude: Models (XM/XP), Uncultured/environmental sample sequences
- Limit to: Sequences from type material
- Entrez Query: (empty)
- BLAST button: Search database Expressed sequence tags (est) using Tblastn (search translated nucleotide databases using a protein query)
- Show results in a new window: ☐

Figure 1: BLAST parameters

Query	26	PGRGFGKRRHPKKLTPLAYKQFIPNVAEKTLGASGRYEGKISRNSERFKELTPNYNPDII	85
		PGRG KRRHPKKLTPLAYKQFIPNVAEKTLGASGRYEGKI+RNS+RFKELTPNYNPDII	
Sbjct	304	PGRGIGKRRHPKKLTPLAYKQFIPNVAEKTLGASGRYEGKITRNSDRFKELTPNYNPDII	483

Query	86	FKDEENTGADRLMTQRCKDKLNALAISVMNQWPGVKLRVTEGWDEDGHHSEESLHYEGRA	145
		FKDEENTGADRLMTQRCKDKLNALAISVMNQWPGVKLRVTEGWDEDGHHSEESLHYEGRA	
Sbjct	484	FKDEENTGADRLMTQRCKDKLNALAISVMNQWPGVKLRVTEGWDEDGHHSEESLHYEGRA	663
Query	146	VDITTSDRDRSKYGMLARLAVEAGFDWVYYESKAHIHCSVKAENSVAAKSGGC	198
		VDITTSDRDRSKYGMLARLAVEAGFDWVY+ESKAHIHCSVKAENSVAAKSGGC	
Sbjct	664	VDITTSDRDRSKYGMLARLAVEAGFDWVYFESKAHIHCSVKAENSVAAKSGGC	822