HMM2

The HMM2 plugin is a toolkit based on Sean Eddy's HMMER2 package.

While working on this plugin we were guided by the following principles:

- Make the HMMER2 tools accessible to a wider user audience by providing a graphical interface for all supported utilities for most of the platforms.
- Be compatible with the original HMMER2 package.
- Create a high-performance solution utilizing modern multi-core processors and SIMD instructions.

The current version of UGENE provides the user interface for three HMM2 tools: HMM build, HMM calibrate, and HMM search.

In the original program, the corresponding commands are: "hmmbuild", "hmmcalibrate" and "hmmsearch".

To access these tools select the Tools HMMER tools submenu of the program main menu:

<u>T</u> ools <u>W</u> indow <u>H</u> elp		
📑 Sanger data analysis	•	
📑 NGS data analysis	•	
😔 BLAST	•	
🏽 Multiple sequence alignment	•	
🧬 Cloning	•	
Primer	•	
Search for TFBS	•	
🕐 Show counters		
🛒 HMMER tools	•	Build HMM3 profile
🖾 Build dotplot		Search with HMMER3
♣ Random sequence generator		Search with phmmer
ፉ Query Designer		Build HMM2 profile
Workflow Designer	Ctrl+D	Calibrate profile with HMMER2
🖁 GUI Test runner	Ctrl+Alt+G	Search with HMMER2
Test runner	Ctrl+H	

We highly recommend reading the original HMMER2 documentation to learn how to use utilities provided by the plugin.

SSE2 algorithm is implemented by Leonid Konyaev, Novosibirsk State University. Use of the SSE2 optimized version of the HMM search algorit hm with quad-core CPU gives >30x performance boost when compared with the original single-threaded algorithm (single sequence mode).

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Calibrating HMM2 Model

Searching Sequence Using HMM2 Profile

Building HMM2 Model