

Resource Summary Report

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BarraCUDA

RRID:SCR_006881

Type: Tool

Proper Citation

BarraCUDA (RRID:SCR_006881)

Resource Information

URL: <http://seqbarracuda.sourceforge.net/>

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Description: A sequence mapping software that utilizes the massive parallelism of graphics processing units to accelerate the inexact alignment of short sequence reads to a particular location on a reference genome. It can align a paired-end library containing 14 million pairs of 76bp reads to the Human genome in about 27 minutes (from fastq files to SAM alignment) using a ??380 NVIDIA Geforce GTX 680*. The alignment throughput can be boosted further by using multiple GPUs (up to 8) at the same time. Being based on BWA (<http://bio-bwa.sf.net>) from the Sanger Institute, BarraCUDA delivers a high level of alignment fidelity and is comparable to other mainstream alignment programs. It can perform gapped alignment with gap extensions, in order to minimise the number of false variant calls in re-sequencing studies.

Abbreviations: BarraCUDA

Resource Type: software resource

Defining Citation: [PMID:22244497](#), [PMID:19451168](#)

Keywords: gpu/cuda, bio.tools

Availability: Acknowledgement requested

Resource Name: BarraCUDA

Resource ID: SCR_006881

Alternate IDs: OMICS_00650, biotools:barracuda

Alternate URLs: <https://bio.tools/barracuda>

Record Creation Time: 20220129T080238+0000

Ratings and Alerts

No rating or validation information has been found for BarraCUDA.

No alerts have been found for BarraCUDA.

Data and Source Information

Source: [SciCrunch Registry](#)

Usage and Citation Metrics

We found 5 mentions in open access literature.

Listed below are recent publications. The full list is available at [NIF](#) .

Duncan-Gelder P, et al. (2026) Barracuda: a dynamic, Turing-complete GPU virtual machine for high-performance simulations. Medical & biological engineering & computing, 64(1), 121.

Zaccardi S, et al. (2023) On-Device Execution of Deep Learning Models on HoloLens2 for Real-Time Augmented Reality Medical Applications. Sensors (Basel, Switzerland), 23(21).

Masjedi H, et al. (2020) Radiation dose and risk of exposure-induced death associated with common computed tomography procedures in Yazd Province. European journal of radiology, 126, 108932.

Langdon WB, et al. (2017) Genetically improved BarraCUDA. BioData mining, 10, 28.

Manconi A, et al. (2015) G-CNV: A GPU-Based Tool for Preparing Data to Detect CNVs with Read-Depth Methods. Frontiers in bioengineering and biotechnology, 3, 28.