Miltenyi Biotec

Reliable nuclei extraction and enrichment

To ensure reproducible results in genomic applications, we have developed a standardized workflow for the extraction and enrichment of nuclei that includes our Nuclei Extraction Buffer, gentleMACS™ Octo Coolers, and Anti-Nucleus MicroBeads. Explore our streamlined workflow that minimizes hands-on time through automation and parallelization, delivering reproducible results in just 40 minutes (fig. 1). This is especially advantageous when working with tissues that are challenging to process, including brain, liver, muscle, and frozen samples.

- **Extract intact nuclei from virtually any tissue in an automated and reproducible way.**
- **Maintain a consistently low temperature throughout the sample preparation process.**
- **Purify your nuclei suspension and eliminate the need for additional myelin or debris removal.**

▸ **miltenyibiotec.com/nuclei-enrichment**

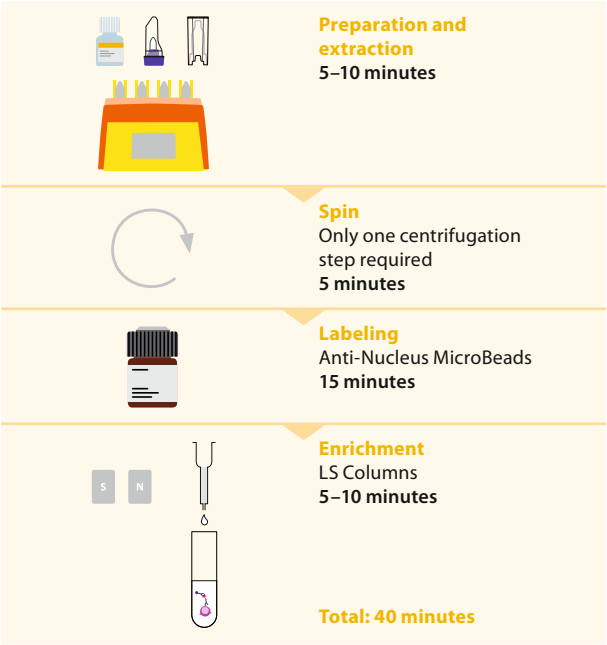

Figure 1: Workflow for standardized nuclei extraction and enrichment. This overview illustrates the steps required, from automated nuclei extraction to highly purified nuclei, with estimated times for each step.

Nuclei extraction

Nuclei extraction is performed with gentleMACS Octo Dissociator with Heaters in gentleMACS C Tubes at low temperatures using gentleMACS Octo Coolers, Nuclei Extraction Buffer, and MACS® SmartStrainers; assuring high-quality nuclei for reliable downstream analysis (fig. 2).

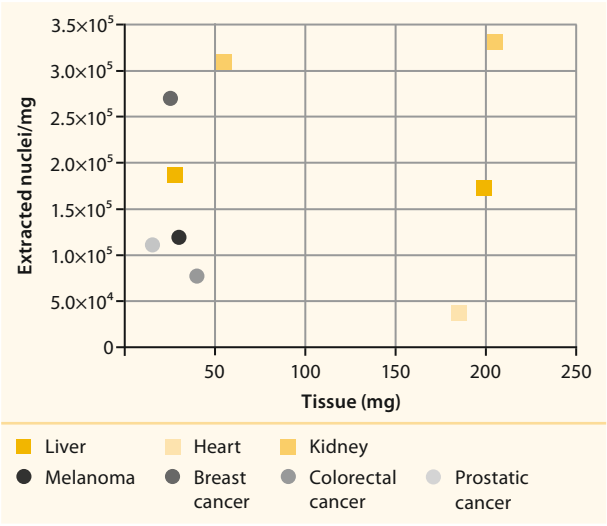

Figure 2: Nuclei were extracted from mouse tissues (squares) and human tumors (circles) using Nuclei Extraction Buffer with a gentleMACS Octo Dissociator with Heaters, stained with DAPI and analyzed by flow cytometry (MACSQuant® Analyzer 10). The graph shows the yield of nuclei per mg of tissue.

Nuclei enrichment

Anti-Nucleus MicroBeads are designed to increase the purity of nuclei through positive selection based on MACS Technology (fig. 3). This step is particularly important for difficult-to-process tissues such as brain, liver, and muscle as their nuclei suspensions often contain a significant amount of debris. The removal of such debris is essential for downstream applications, especially for single-nucleus RNA sequencing, which requires clean and interference-free samples.

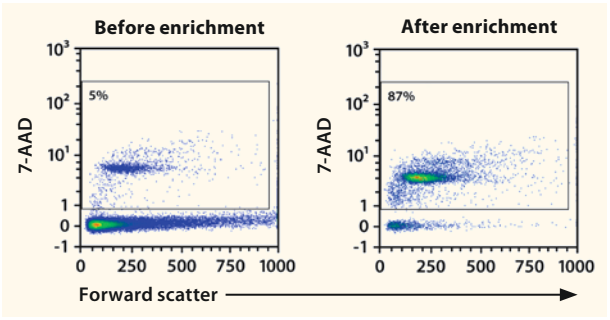

Figure 3: Nuclei were extracted from mouse brain tissue using Nuclei Extraction Buffer, gentleMACS Octo Coolers, and a gentleMACS Octo Dissociator with Heaters. Enrichment was performed using Anti-Nucleus MicroBeads, an LS Column, and a QuadroMACS™ Separator. Nuclei were stained with 7-AAD and analyzed by flow cytometry (MACSQuant Analyzer). Enrichment increased purity from 5% to 87%.

Products	Order no.
gentleMACS Octo Dissociator with Heaters	130-134-029
gentleMACS Octo Coolers (4 pieces)	130-130-533
QuadroMACS Separator	130-090-976
Nuclei Extraction Buffer	130-128-024
Anti-Nucleus MicroBeads	130-132-997
gentleMACS C Tubes (25 tubes)	130-093-237
MACS SmartStrainers (30 µm; 50 filters)	130-098-458
MACS SmartStrainers (70 µm; 50 filters)	130-098-462
LS Columns	130-042-401

For further information on nuclei extraction and enrichment visit
▸ **miltenyibiotec.com/nuclei-enrichment**

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