



gentleMACS™ Protocol overview

The gentleMACS™ Dissociator allows the fast and gentle dissociation of many tissues. Various gentleMACS Protocols and programs are available for specific applications, including the generation of single-cell suspensions from mouse spleen, liver, brain, and lung using C Tubes. Subcellular material, such as total RNA or mRNA, can be isolated from

homogenized fresh or frozen tissues using M Tubes. The gentleMACS Dissociator is equipped with 23 specific and five general programs. The table below summarizes the gentleMACS Protocols and the corresponding specific programs that are currently available; protocols are available for download at www.miltenyibiotec.com/protocols.

gentleMACS Protocol	gentleMACS Program
Protocols for preparation of single-cell suspensions using C Tubes	
Preparation of single-cell suspensions from mouse spleen	m_spleen_01 (1–2 spleens), or m_spleen_04 (3–6 spleens)
Preparation of single-cell suspensions from mouse spleen with collagenase D treatment	m_spleen_02 and m_spleen_03, combined
Preparation of single-cell suspensions from mouse liver with collagenase IV treatment	m_liver_01 and m_liver_02, combined
Preparation of single-cell suspensions from mouse neural tissue	m_brain_01, m_brain_02, and m_brain_03, combined
Preparation of single-cell suspensions from mouse lung with collagenase D treatment	m_lung_01 and m_lung_02, combined
Preparation of single-cell suspensions from mouse heart with collagenase II treatment	m_heart_01 and m_heart_02, combined
Preparation of single-cell suspensions from implanted mouse tumors: <ul style="list-style-type: none"> • Tumor-infiltrating lymphocytes (TILs) from B16 melanomas • TILs and tumor cells from B16 melanomas • TILs and tumor cells from CT26 colon carcinomas • TILs and tumor cells from mPAC pancreatic tumors 	m_impTumor_01 m_impTumor_02 m_impTumor_02 and m_impTumor_03, combined m_impTumor_04
Preparation of single-cell suspensions from human tumors	h_tumor_01, h_tumor_02, and h_tumor_03, combined
Protocols for homogenization of tissue using M Tubes	
Homogenization of tissue for total RNA isolation	RNA_01 for fresh tissue RNA_02 for frozen tissue
Homogenization of tissue for mRNA isolation	RNA_01 for fresh tissue RNA_02 for frozen tissue
Homogenization of tissue for protein extraction	Protein_01

Recommendations for general gentleMACS Programs

The gentleMACS Programs A, B, C, D, and E are designed as a basis for the user to customize protocols for the generation of single-cell suspensions from tissues that are not listed in the table above. The stringency of the dissociation conditions increases from A to E, i.e., gentleMACS Program A provides relatively mild conditions for the dissociation of soft tissue, whereas program E is suitable for tough tissue.

Note: Very hard material, such as bone should not be processed since it may damage the C Tubes.

Applications provided by our customers

Preparation of single-cell suspensions with C Tubes:

- mouse thymus: Program A
- mouse lymph nodes: Program B

Homogenization of tissues with M Tubes:

- isolation of bacteria from infected mice or determination of viral load: Program RNA_01

Have you discovered a new application for gentleMACS Programs that you would like to share with other scientists? Let us know! Just contact macstec@miltenyibiotec.de

General information

For general recommendations on sample sizes, please refer to the gentleMACS Tube data sheets. For details on the use of the gentleMACS Dissociator, refer to the gentleMACS Dissociator user manual.

Miltenyi Biotec will continue to provide new, specific gentleMACS Programs and gentleMACS Protocols. Watch out for news at www.gentlemacs.com or www.miltenyibiotec.com/protocols.

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