Miltenyi Biotec

StemMACS™ Lmx1a mRNA
human

Order no. 130-104-381

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1. Description

Components	**20 µg StemMACS™ Lmx1a mRNA** encoding the transcription factor Lmx1a (Entrez Gene ID 4009) **1 mL Double-distilled Water,** RNase-free
Specifications	*In vitro* transcribed, polyadenylated and capped mRNA that has been modified with pseudouridine and 5-methyl-cytidine to reduce the innate antiviral response to single-stranded RNA.
Formulation	Lyophilized from a filtered (0.2 µm) solution.
Storage	Store the lyophilized product at –20 °C. The expiration date is indicated on the label. After reconstitution, the product can be stored at –70 °C for up to 3 month.
Quality control	mRNA size has been verified on an Agilent Bioanalyzer System. Lmx1a protein expression after transfection was confirmed by immunofluorescence.

1.1 Principle

The transient expression of key developmental regulators, recombinases or markers via mRNA transfection is a powerful tool for modulating cell fate. StemMACS mRNAs are highly pure, *in vitro*-transcribed mRNAs that have been carefully optimized and validated to ensure high level expression after transfection.

1.2 Background information

The homeobox and LIM-domain containing protein Lmx1a acts as a positive regulator of insulin gene transcription. In addition, Lmx1a plays a role in the development of dopamine-producing neurons during embryogenesis. In pluripotent stem cell research, overexpression of Lmx1a in combination with other transcription factors (e.g. Mash1, Nurr1) has been used to accelerate the differentiation into functional dopaminergic neurons.

1.3 Applications

- Differentiation of pluripotent stem cells into dopaminergic neurons.

2. Protocol: Reconstitution of lyophilizate

▲ RNA is susceptible to degradation by exogenous ribonucleases. Wear gloves, use RNase-free reagents, tubes, and pipette tips.

1. Dissolve StemMACS Lmx1a mRNA in 200 µL of Double-distilled Water. Vortex thoroughly. The final concentration will be 0.1 µg/µL.
2. Briefly centrifuge to collect the content at the bottom of the tube.
3. Prepare aliquots and store at –70 °C to –80 °C. Do not subject aliquots to more than two freeze-thaw cycles.

For satisfactory transfection results, use a protocol that is optimized for your specific cell type. StemMACS™ eGFP mRNA or StemMACS™ Nuclear eGFP mRNA allow easy evaluation of transfection efficiency and are recommended as positive controls.

Refer to **www.miltenyibiotec.com** for all data sheets and protocols. Miltenyi Biotec provides technical support worldwide. Visit www.miltenyibiotec.com/local to find your nearest Miltenyi Biotec contact.

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