

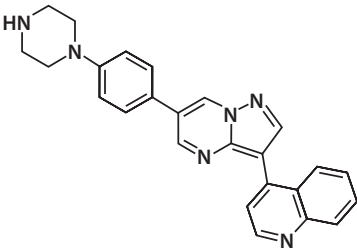
2 mg  
5×2 mg

130-103-925  
130-104-171

## Contents

1. Description
  - 1.1 Background information
2. Protocol
  - 2.1 Preparation of stock solution
  - 2.2 Use in cell culture

## 1. Description

<b>Components</b>	StemMACS™ LDN-193189. A selective small molecule BMP inhibitor.
<b>Size</b>	2 mg; 5×2 mg
<b>Product format</b>	Off-white solid
<b>Molecular weight</b>	406.48
<b>CAS number</b>	1062368-24-4
<b>Systematic name</b>	4-[[6-[4-piperazin-1-yl)phenyl]pyrazolo[1,5-a]pyrimidin-3-yl]quinoline
<b>Molecular formula</b>	C <sub>25</sub> H <sub>22</sub> N <sub>6</sub>
<b>Structure</b>	
<b>Purity</b>	>96%
<b>Solubility</b>	Soluble in DMSO
<b>Storage</b>	Store powder at -20 °C. After reconstitution, store aliquots at -20 °C. Protect from light.

### 1.1 Background information

StemMACS™ LDN-193189 is a highly potent, selective and cell permeable inhibitor of BMP signaling. It inhibits the BMP type I receptors ALK2 (IC<sub>50</sub> = 5 nM) and ALK3 (IC<sub>50</sub> = 30 nM) and prevents phosphorylation of their downstream targets Smad1, Smad5 and Smad8. In contrast, LDN-193189 has little effect on ALK4, ALK5, and ALK7. LDN-193189 is a derivative of dorsomorphin, and has been used instead of the protein Noggin for inhibition of BMP signaling. In pluripotent stem cell research, LDN-103189 is used together with small molecules or growth factors to modulate stem cell differentiation, e.g., during neural induction or dopaminergic differentiation.

## 2. Protocol

### 2.1 Preparation of stock solution

Effective concentrations of StemMACS LDN-193189 for cell culture applications range from 0.01 μM to 1 μM. An appropriate stock solution in DMSO can be prepared as follows:

1. Reconstitute the entire vial contents by adding, e.g., 492.6 μL (for 10 mM) of pure DMSO. Warm to 37 °C for 3–5 minutes to facilitate solubilization.

▲ **Note:** The vial may have turned upside down during transportation. Gently tap prior to reconstitution to collect all powder at the bottom of the vial.

2. Prepare appropriate aliquots and store at -20 °C. Avoid repeated freeze-thaw cycles.

▲ **Note:** The DMSO concentration in culture should not exceed 0.5%. Stock solutions of alternate concentration can be prepared using the following table. Add the solvent directly to the vial, it will hold up to 4 mL.

Desired stock	0.1 mM	1 mM	2 mM	5 mM	10 mM
Volume of DMSO to add	Dilute 1:100 from a 10 mM stock	Dilute 1:10 from a 10 mM stock	2463 μL	985.2 μL	492.6 μL

### 2.2 Use in cell culture

1. Thaw aliquots at 37 °C as needed.
2. To avoid precipitation, prewarm the cell culture media prior to adding the reconstituted compound.
3. Mix and filter the supplemented media through a 0.2 μM low-protein binding filter.

Refer to [www.miltenyibiotec.com](http://www.miltenyibiotec.com) for all data sheets and protocols. Miltenyi Biotec provides technical support worldwide. Visit [www.miltenyibiotec.com/local](http://www.miltenyibiotec.com/local) to find your nearest Miltenyi Biotec contact.

## Legal notices

### Limited product warranty

Miltenyi Biotec B.V. & Co. KG and/or its affiliate(s) warrant this product to be free from material defects in workmanship and materials and to conform substantially with Miltenyi Biotec's published specifications for the product at the time of order, under normal use and conditions in accordance with its applicable documentation, for a period beginning on the date of delivery of the product by Miltenyi Biotec or its authorized distributor and ending on the expiration date of the product's applicable shelf life stated on the product label, packaging or documentation (as applicable) or, in the absence thereof, ONE (1) YEAR from date of delivery ("Product Warranty"). Miltenyi Biotec's Product Warranty is provided subject to the warranty terms as set forth in Miltenyi Biotec's General Terms and Conditions for the Sale of Products and Services available on Miltenyi Biotec's website at [www.miltenyibiotec.com](http://www.miltenyibiotec.com), as in effect at the time of order ("Product Warranty"). Additional terms may apply. BY USE OF THIS PRODUCT, THE CUSTOMER AGREES TO BE BOUND BY THESE TERMS.

THE CUSTOMER IS SOLELY RESPONSIBLE FOR DETERMINING IF A PRODUCT IS SUITABLE FOR CUSTOMER'S PARTICULAR PURPOSE AND APPLICATION METHODS.

### Technical information

The technical information, data, protocols, and other statements provided by Miltenyi Biotec in this document are based on information, tests, or experience which Miltenyi Biotec believes to be reliable, but the accuracy or completeness of such information is not guaranteed. Such technical information and data are intended for persons with knowledge and technical skills sufficient to assess and apply their own informed judgment to the information. Miltenyi Biotec shall not be liable for any technical or editorial errors or omissions contained herein.

All information and specifications are subject to change without prior notice. Please contact Miltenyi Biotec Technical Support or visit [www.miltenyibiotec.com](http://www.miltenyibiotec.com) for the most up-to-date information on Miltenyi Biotec products.

### Licenses

This product and/or its use may be covered by one or more pending or issued patents and/or may have certain limitations. Certain uses may be excluded by separate terms and conditions. Please contact your local Miltenyi Biotec representative or visit Miltenyi Biotec's website at [www.miltenyibiotec.com](http://www.miltenyibiotec.com) for more information.

The purchase of this product conveys to the customer the non-transferable right to use the purchased amount of the product in research conducted by the customer (whether the customer is an academic or for-profit entity). This product may not be further sold. Additional terms and conditions (including the terms of a Limited Use Label License) may apply.

CUSTOMER'S USE OF THIS PRODUCT MAY REQUIRE ADDITIONAL LICENSES DEPENDING ON THE SPECIFIC APPLICATION. THE CUSTOMER IS SOLELY RESPONSIBLE FOR DETERMINING FOR ITSELF WHETHER IT HAS ALL APPROPRIATE LICENSES IN PLACE. Miltenyi Biotec provides no warranty that customer's use of this product does not and will not infringe intellectual property rights owned by a third party. BY USE OF THIS PRODUCT, THE CUSTOMER AGREES TO BE BOUND BY THESE TERMS.

### Trademarks

The Miltenyi Biotec logo and StemMACS are registered trademarks or trademarks of Miltenyi Biotec and/or its affiliates in various countries worldwide.

Copyright © 2020 Miltenyi Biotec and/or its affiliates. All rights reserved.