



Miltenyi Biotec

StemMACS™ A83-01

2 mg
5×2 mg

130-105-333
130-106-274

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1. Description

Components StemMACS A83-01, a small molecule inhibitor of TGF- β signaling.

Product format Off-white solid

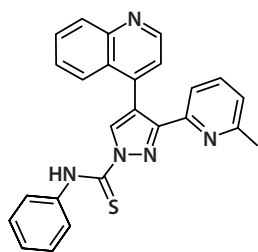
Molecular weight 421.52

CAS number 909910-43-6

Systematic name 3-(6-Methyl-2-pyridinyl)-*N*-phenyl-4-(4-quinolinyl)-1*H*-pyrazole-1-carbothioamide

Molecular formula C₂₅H₁₉N₅S

Structure



Purity >95%

Solubility Soluble in DMSO.

Storage Store powder at -20 °C. After reconstitution, store aliquots at -20 °C. Protect from light.

1.1 Background information

StemMACS A83-01 is a potent inhibitor of the TGF-beta, Activin and Nodal signaling pathway. A83-01 inhibits the activin receptor-like kinases ALK4, ALK5, and ALK7, thereby preventing the phosphorylation of their downstream targets SMAD2 and SMAD3. A83-01 can be used instead of SB431542 and is more potent in inhibition towards ALK4, ALK5, and ALK7 with IC₅₀ values of 45, 12, and 7.5 nM respectively. A83-01 exhibits only weak inhibition of the related kinases ALK1, ALK2, ALK3, and ALK6 in the BMP signaling pathway.

2. Protocol

2.1 Preparation of stock solution

Effective concentrations of StemMACS A83-01 for cell culture applications range from 1 μ M to 10 μ M. A 10 mM stock solution in DMSO will be appropriate for most applications and can be prepared as follows:

1. Reconstitute the entire vial content by adding 474.5 μ L 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 | 1 mM | 2 mM | 5 mM | 10 mM |
|-----------------------|--------------------------------|----------------|-------------|---------------|
| Volume of DMSO to add | Dilute 1:10 from a 10 mM stock | 2372.5 μ L | 949 μ L | 474.5 μ L |

2.2 Use in cell culture

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

Refer to www.miltenyibiotec.com for all data sheets and protocols. Miltenyi Biotec provides technical support worldwide. Visit www.miltenyibiotec.com for local Miltenyi Biotec Technical Support contact information.

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