



## DATASHEET

### Jasplakinolide

#### Jasplakinolide

500  $\mu$ M Jasplakinolide (solid)

Cat. #: 5640-01

For Laboratory Use Only.

Not for Use in Animal or Human Diagnostic  
or Therapeutic Processes.

#### Product Documentation

Jasplakinolide binds to actin filaments and inhibits their depolymerization by specific interaction at the interface of adjacent monomers of the filaments. Jasplakinolide is a macrocyclic peptide isolated from the marine sponge *Jaspis johnstoni*. It is a very potent inducer of actin polymerization *in vitro*, since it promotes actin filament nucleation. Notably Jasplakinolide competes with phalloidin for actin binding with a  $K_d = 15$  nM.

Jasplakinolide has a high affinity for actin filaments and lower affinity for actin monomers. Binding of Jasplakinolide leads to a decrease in the rate constant for the dissociation of actin monomers from the filament ends. This results in a stabilization of filaments, used in many assays where stable actin filaments are demanded.

Jasplakinolide also inhibits the ATP-ase activity of F-actin. Binding arrests actin monomers in a specific G-actin state and stabilizes filament structure by strongly reducing the rate constant for monomer dissociation, an event associated with the trapping of ADP.

Jasplakinolide are used for *in vitro* and *in vivo* assays at working concentrations from 50 nM to 5  $\mu$ M. Incubation times range 2 minutes to 24 hours. On live cells, Jasplakinolide can be added to a variety of cell culture media (complete with serum and antibiotics). The optimal concentration and incubation time has to be determined by each user experimentally.

For product inquiries please contact:

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#### Preparation of a Jasplakinolide working stock

According to the mixing ratio needed, either a 500  $\mu$ M or a 100  $\mu$ M stock is prepared. Prepare a 500  $\mu$ M stock solution by adding 30  $\mu$ l DMSO to the tube. Mix thoroughly using a pipette. Alternatively add 150  $\mu$ l DMSO to prepare a 100  $\mu$ M stock solution, which is mixed thoroughly using a pipette.

Note : 150 $\mu$ l of a 100 $\mu$ M solution stabilize 2mg actin at a 1 : 1 molar ratio.

#### Storage and Stability

For continuous use, store the Jasplakinolide stock in solvent at -20°C for up six months. Avoid repeated freeze/thawing. Aliquots in small tubes may be prepared for frequent use, to avoid damage of the compound by oxygen.

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