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# IPA-3

## Catalog No: tcsc1432

### Available Sizes

**Size:** 5mg

**Size:** 10mg

**Size:** 50mg

### Specifications

**CAS No:**
42521-82-4

**Formula:**
$C_{20}H_{14}O_2S_2$

**Pathway:**
Cytoskeleton;Cell Cycle/DNA Damage

**Target:**
PAK;PAK

**Purity / Grade:**
>98%

**Solubility:**
H2O :

**Observed Molecular Weight:**
350.45

## Product Description

IPA-3 is a selective non-ATP competitive **PAK1** inhibitor with **$IC_{50}$** of 2.5 μM, and shows no inhibition to group II PAKs (PAKs 4-6).

***In Vitro:*** IPA-3 inhibits Pak1 activation in part by binding covalently to the regulatory domain of Pak1. IPA-3 binds Pak1 covalently in

a time- and temperature-dependent manner. IPA-3 prevents binding of the Pak1 activator Cdc42. IPA-3 binds directly to the Pak1 autoregulatory domain. IPA-3 reversibly inhibits PMA-induced membrane ruffling in cells[1]. IPA-3 (2 μM, 5 μM or 20 μM) reduces cell spreading in human primary Schwann and schwannoma cells. IPA-3 treatment significantly reduces the number of adherent Schwann and schwannoma cells in a dose-dependent manner[2]. IPA-3 is a non ATP-competitive, allosteric inhibitor of p21-activated kinase 1 (Pak1). PIR3.5 is the control compound of IPA-3. IPA-3 prevents Cdc42-stimulated Pak1 autophosphorylation on Thr423. IPA-3 also prevents sphingosine-dependent Pak1 autophosphorylation. IPA-3 does not target exposed cysteine residues on Pak1. The disulfide bond of IPA-3 is critical for inhibition of Pak1 and in vitro reduction by the reducing agent dithiothreitol (DTT) abolishes Pak1 inhibition by IPA-3. IPA-3 inhibits activation of Pak1 by diverse activators, but does not inhibit preactivated Pak1. IPA-3 inhibits PDGF-stimulated Pak activation in mouse embryonic fibroblasts[3].