

# PX-12

**Catalog No: tcsc3052**



## Available Sizes

**Size:** 5mg

**Size:** 10mg

**Size:** 50mg

**Size:** 100mg

**Size:** 200mg



## Specifications

**CAS No:**

141400-58-0

**Formula:**

$C_7H_{12}N_2S_2$

**Pathway:**

Others

**Target:**

Others

**Purity / Grade:**

>98%

**Solubility:**

DMSO :  $\geq 44.7$  mg/mL (237.37 mM)

**Alternative Names:**

IV-2

### Observed Molecular Weight:

188.31

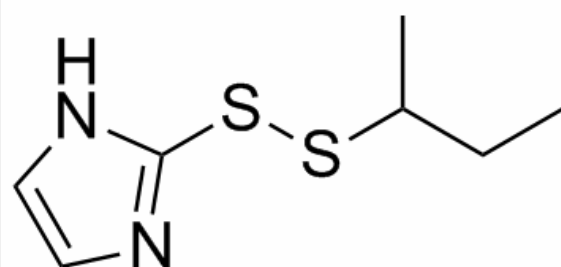
## Product Description

PX-12(IV-2) is an irreversible inhibitor of Thioredoxin-1 (**Trx-1**); inhibits the growth of MCF-7 and HT-29 cells with **IC<sub>50</sub>** values of 1.9 and 2.9  $\mu$ M, respectively.

IC50 & Target: IC50: 1.9 (MCF-7), 2.9  $\mu$ M (HT-29 cells)<sup>[1]</sup>

**In Vitro:** PX-12 inhibits the growth of MCF-7 and HT-29 cells with IC<sub>50</sub> values of 1.9 and 2.9  $\mu$ M, respectively<sup>[1]</sup>. PX-12 particularly reduces the activity of Trx-1 by means of thio-alkylating critical cysteine residue (Cys73) which is located in the outside the conserved redox catalytic site of Trx-1. PX-12 affects the oxidation state of thiols in a number of cell surface proteins. Key surface receptors for platelet adhesion and activation are affected, including the collagen receptor GPVI and the von Willebrand factor receptor, GPIb. PX-12 inhibits thrombus formation over Type I collagen in whole blood under flow conditions<sup>[2]</sup>. Thioredoxin-1 (Trx-1) is a cellular redox protein that promotes tumor growth, inhibits apoptosis, and up-regulates hypoxia-inducible factor-1 $\alpha$  and vascular endothelial growth factor<sup>[3]</sup>. PX-12 inhibits the growth of colorectal cancer DLD-1 and SW620 cells in a dose- and time-dependent manner. PX-12 reduces cell colony formation and induced a G2/M phase arrest of the cell cycle. PX-12 treatment induces apoptosis. PX-12 inhibits colorectal cancer cell migration and invasion. Treatment of cancer cells with PX-12 reduces NOX1, CDH17 and S100A4 mRNA expression, and increases KLF17 mRNA expression. PX-12 decreases S100A4 protein expression in the colorectal cancer cells<sup>[4]</sup>.

**In Vivo:** PX-12 has been shown to have *in vivo* antitumor activity against human tumor xenografts including HT-29 colon cancer in SCID mice and has been tested in a phase I clinical trial in patients<sup>[3]</sup>.



All products are for RESEARCH USE ONLY. Not for diagnostic & therapeutic purposes!