

## Certificate of Analysis

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**Product Name:** GYY 4137 morpholine salt

**Catalog No.:** 3658

**Batch No.:** 1

CAS Number: 106740-09-4

IUPAC Name: *P*-(4-Methoxyphenyl)-*P*-4-morpholinylphosphinodithioic acid morpholine salt

### 1. PHYSICAL AND CHEMICAL PROPERTIES

**Batch Molecular Formula:** C<sub>11</sub>H<sub>16</sub>NO<sub>2</sub>PS<sub>2</sub>·C<sub>4</sub>H<sub>9</sub>NO

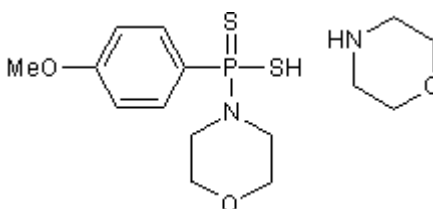
**Batch Molecular Weight:** 376.47

**Physical Appearance:** White solid

**Solubility:** DMSO to 100 mM

**Storage:** Store at -20°C

**Batch Molecular Structure:**



### 2. ANALYTICAL DATA

**<sup>1</sup>H NMR:** Consistent with structure

**Mass Spectrum:** Consistent with structure

**Microanalysis:**

	Carbon	Hydrogen	Nitrogen
Theoretical	47.86	6.69	7.44
Found	47.69	6.97	7.05

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**Description:**

Slow-releasing H<sub>2</sub>S donor. Exhibits vasodilator and antihypertensive activity. Activity causes slow dilation of blood vessels *in vitro* and *in vivo*; does not influence vascular smooth muscle cell viability in culture. Water-soluble.

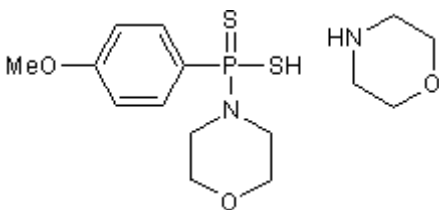
**Physical and Chemical Properties:**

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**Storage:** Store at -20°C

**Solubility & Usage Info:**

DMSO to 100 mM

**Stability and Solubility Advice:**

Some solutions can be difficult to obtain and can be encouraged by rapid stirring, sonication or gentle warming (in a 45-60°C water bath).

Information concerning product stability, particularly in solution, has rarely been reported and in most cases we can only offer a general guide. Our standard recommendations are:

**SOLIDS:** Provided storage is as stated on the product label and the vial is kept tightly sealed, the product can be stored for up to 6 months from date of receipt.

**SOLUTIONS:** We recommend that stock solutions, once prepared, are stored aliquoted in tightly sealed vials at -20°C or below and used within 1 month. Wherever possible solutions should be made up and used on the same day.

**References:**

Li *et al* (2008) Characterization of a novel, water-soluble hydrogen sulfide-releasing molecule (GYY4137). *Circulation* **117** 2351. PMID: 18443240.

Whiteman *et al* (2010) The effect of hydrogen sulfide donors on lipopolysaccharide-induced formation of inflammatory mediators in macrophages. *Antioxid.Redox.Signal.* **12** 1147. PMID: 19769459.

Lee *et al* (2011) The slow-releasing hydrogen sulfide donor, GYY4137, exhibits novel anti-cancer effects *in vitro* and *in vivo*. *PLoS One* **6** e21077. PMID: 21701688.

Liu *et al* (2013) Hydrogen sulfide donor, GYY4137, exhibits anti-atherosclerotic activity in high fat fed apolipoprotein E<sup>-/-</sup> mice. *Br.J.Pharmacol.* [Epub ahead of print]. PMID: 23713790.

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