

## Certificate of Analysis

[www.tocris.com](http://www.tocris.com)

**Product Name:** Ceefourin 1

**Catalog No.:** 5867

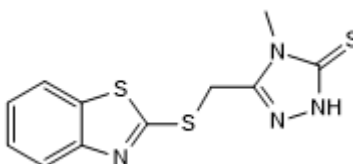
**Batch No.:** 1

CAS Number: 315702-40-0

IUPAC Name: 5-[(2-Benzothiazolylthio)methyl]-2,4-dihydro-4-methyl-3*H*-1,2,4-triazole-3-thione

### 1. PHYSICAL AND CHEMICAL PROPERTIES

**Batch Molecular Formula:** C<sub>11</sub>H<sub>10</sub>N<sub>4</sub>S<sub>3</sub>  
**Batch Molecular Weight:** 294.42  
**Physical Appearance:** Beige solid  
**Solubility:** DMSO to 100 mM  
**Storage:** Store at +4°C  
**Batch Molecular Structure:**



### 2. ANALYTICAL DATA

**HPLC:** Shows 98.8% purity  
**<sup>1</sup>H NMR:** Consistent with structure  
**Mass Spectrum:** Consistent with structure

**Microanalysis:**

	Carbon	Hydrogen	Nitrogen
Theoretical	44.88	3.42	19.03
Found	44.79	3.38	18.92

Caution - Not Fully Tested • Research Use Only • Not For Human or Veterinary Use

**Product Name:** Ceefourin 1

**Catalog No.:** 5867

**Batch No.:** 1

CAS Number: 315702-40-0

IUPAC Name: 5-[(2-Benzothiazolylthio)methyl]-2,4-dihydro-4-methyl-3H-1,2,4-triazole-3-thione

**Description:**

Selective MRP (multidrug resistance-associated protein) 4 inhibitor ( $IC_{50} = 2.6 \mu\text{M}$ ). Selective for MRP4 over P-gp, MRP1 and ABCG2. Sensitizes MRP4 over-expressing cells to SN 38 (Cat. No. 2684).

**Physical and Chemical Properties:**

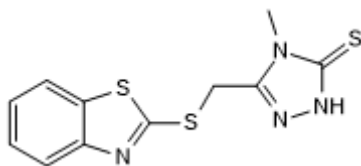
Batch Molecular Formula:  $C_{11}H_{10}N_4S_3$

Batch Molecular Weight: 294.42

Physical Appearance: Beige solid

**Minimum Purity:** >98%

**Batch Molecular Structure:**



**References:**

**Cheung et al** (2014) High-throughput screening identifies Ceefourin 1 and Ceefourin 2 as highly selective inhibitors of multidrug resistance protein 4 (MRP4). *Biochem.Pharmacol.* **91** 97. PMID: 24973542.

**Storage:** Store at +4°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.

Caution - Not Fully Tested • Research Use Only • Not For Human or Veterinary Use

**bio-techne.com**

info@bio-techne.com

techsupport@bio-techne.com

**North America**

Tel: (800) 343 7475

**China**

info.cn@bio-techne.com

Tel: +86 (21) 52380373

**Europe Middle East Africa**

Tel: +44 (0)1235 529449

**Rest of World**

www.tocris.com/distributors

Tel: +1 612 379 2956