

## Certificate of Analysis

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**Product Name:** GP 1a

**Catalog No.:** 2764

**Batch No.:** 1

CAS Number: 511532-96-0

IUPAC Name: *N*-(Piperidin-1-yl)-1-(2,4-dichlorophenyl)-1,4-dihydro-6-methylindeno[1,2-*c*]pyrazole-3-carboxamide

### 1. PHYSICAL AND CHEMICAL PROPERTIES

**Batch Molecular Formula:** C<sub>23</sub>H<sub>22</sub>Cl<sub>2</sub>N<sub>4</sub>O  
**Batch Molecular Weight:** 441.35  
**Physical Appearance:** Off-white solid  
**Solubility:** DMSO to 100 mM  
 ethanol to 100 mM  
**Storage:** Store at RT

### 2. ANALYTICAL DATA

**TLC:** R<sub>f</sub> = 0.2 (Ethyl acetate:Petroleum ether [1:4])  
**HPLC:** Shows >99.5% purity  
**<sup>1</sup>H NMR:** Consistent with structure  
**Mass Spectrum:** Consistent with structure  
**Microanalysis:**

	Carbon Hydrogen Nitrogen		
Theoretical	62.59	5.02	12.69
Found	62.7	5.01	12.61

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

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**Description:**

CB<sub>2</sub> receptor inverse agonist (pEC<sub>50</sub> = 7.1), shown in cAMP, GTPγS and β-arrestin recruitment assays. Demonstrates approximately 30-fold selectivity for CB<sub>2</sub> receptors over CB<sub>1</sub> receptors. Increases P-ERK1/2 expression in HL-60 cells in vitro.

**Physical and Chemical Properties:**

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Batch Molecular Weight: 441.35

Physical Appearance: Off-white solid

**Minimum Purity:** ≥99%

**Storage:** Store at RT

**Solubility & Usage Info:**

DMSO to 100 mM  
ethanol 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:**

**Soethoudt et al** (2017) Cannabinoid CB<sub>2</sub> receptor ligand profiling reveals biased signalling and off-target activity. *Nat. Commun.* **8** 13958. PMID: 28045021.

**Tschop et al** (2009) The cannabinoid receptor 2 is critical for the host response to sepsis. *J. Immunol.* **183** 499. PMID: 19525393.

**Murineddu et al** (2006) Tricyclic pyrazoles. 4. Synthesis and biological evaluation of analogues of the robust and selective CB<sub>2</sub> cannabinoid ligand 1-(2',4'-dichlorophenyl)-6-methyl-*N*-piperidin-1-yl-1,4-dihydroindeno[1,2-*c*]pyrazole-3-carboxamide. *J. Med. Chem.* **49** 7502. PMID: 17149879.

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