

# PRODUCT INFORMATION



## G6PDi-1

Item No. 31484

**CAS Registry No.:** 2457232-14-1  
**Formal Name:** 4-((5-oxo-6,7,8,9-tetrahydro-5H-cyclohepta[d]pyrimidin-2-yl)amino)thiophene-2-carbonitrile

**Synonym:** Glucose-6-phosphate Dehydrogenase Inhibitor 1

**MF:** C<sub>14</sub>H<sub>12</sub>N<sub>4</sub>OS

**FW:** 284.3

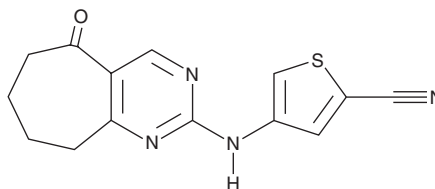
**Purity:** ≥98%

**UV/Vis.:** λ<sub>max</sub>: 222, 246, 305 nm

**Supplied as:** A crystalline solid

**Storage:** -20°C

**Stability:** ≥2 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Laboratory Procedures

G6PDi-1 is supplied as a crystalline solid. A stock solution may be made by dissolving the G6PDi-1 in the solvent of choice, which should be purged with an inert gas. G6PDi-1 is soluble in organic solvents such as DMSO and dimethyl formamide (DMF). The solubility of G6PDi-1 in these solvents is approximately 10 mg/ml in DMSO and 15 mg/ml in DMF.

G6PDi-1 is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, G6PDi-1 should first be dissolved in DMF and then diluted with the aqueous buffer of choice. G6PDi-1 has a solubility of approximately 0.20 mg/ml in a 1:4 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

### Description

G6PDi-1 is a reversible and noncompetitive inhibitor of glucose-6-phosphate dehydrogenase (G6PDH; IC<sub>50</sub> = 0.07 μM), the enzyme that converts G6P to 6-phosphogluconolactone using NADP<sup>+</sup> as a cofactor in the first step of the pentose phosphate pathway.<sup>1</sup> G6PDi-1 (10 and 50 μM) reduces NADPH levels in a variety of cultured cells, including red blood cells and T cells. It decreases colony formation of HCT116 cells when used at concentrations of 20 and 30 μM, an effect that can be rescued by the antioxidant N-acetyl cysteine. G6PDi-1 decreases the production of cytokines induced by phorbol 12-myristate 13-acetate (PMA; Item No. 10008014) and ionomycin (Item No. 10004974) in T cells and prevents PMA-induced oxidative burst in neutrophils.

### Reference

1. Ghergurovich, J.M., García-Cañaveras, J.C., Wang, J., *et al.* A small molecule G6PD inhibitor reveals immune dependence on pentose phosphate pathway. *Nat. Chem. Biol.* **16**(7), 731-739 (2020).

#### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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