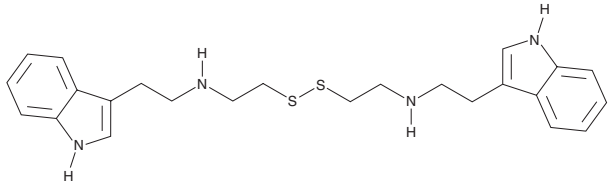
PRODUCT INFORMATION

G6PD Activator AG1

Item No. 39675

CAS Registry No.: 421581-52-4
Formal Name: N,N′-(dithiodi-2,1-ethanediyl)*bis*-1H-indole-3-ethanamine
Synonym: Glucose-6-phosphate Dehydrogenase Activator AG1
MF: $C_{24}H_{30}N_4S_2$
FW: 438.6
Purity: ≥95%
Supplied as: A neat oil
Storage: -20°C
Stability: ≥4 years
Special Conditions: Unstable in solutions



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

Laboratory Procedures

G6PD Activator AG1 is supplied as a neat oil. A stock solution may be made by dissolving the G6PD Activator AG1 in the solvent of choice, which should be purged with an inert gas. G6PD Activator AG1 is soluble in acetonitrile.

Description

G6PD activator AG1 is an activator of glucose-6-phosphate dehydrogenase (G6PDH; EC_{50} = 3.4 µM for $G6PDH^{R459L}$).[1] It selectively induces the dimerization of $G6PDH^{R459L}$ over 6-phosphogluconate dehydrogenase (6PGD), GAPDH, aldehyde dehydrogenase 2 (ALDH2), and ALDH3A1. G6PD activator AG1 decreases the levels of reactive oxygen species (ROS) in, and increases the viability of, primary human lymphocytes isolated from a patient carrying the $G6PDH^{R459L}$ mutation. It inhibits hemolysis induced by chloroquine (Item No. 14194) or diamide in isolated human erythrocytes when used at a concentration of 5 µM. G6PD activator AG1 (1 µM) decreases chloroquine-induced pericardial edema in zebrafish embryos. It decreases tumor volume and weight and increases survival in an NCI H226 lung mesothelioma mouse xenograft model when administered at a dose of 40 mg/kg.[2]

References

1. Hwang, S., Mruk, K., Rahighi, S., *et al.* Correcting glucose-6-phosphate dehydrogenase deficiency with a small-molecule activator. *Nat. Commun.* **9(1)**, 4045 (2018).
2. Lu, C., Yang, D., Klement, J.D., *et al.* H3K9me3 represses G6PD expression to suppress the pentose phosphate pathway and ROS production to promote human mesothelioma growth. *Oncogene* **41(18)**, 2651-2662 (2022).

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