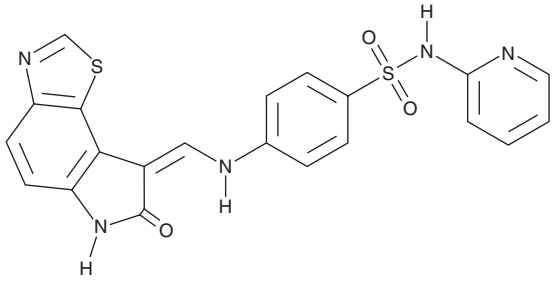
PRODUCT INFORMATION

GW 8510

Item No. 43576

CAS Registry No.:	222036-17-1
Formal Name:	4-[[(6,7-dihydro-7-oxo-8H-pyrrolo[2,3-g]benzothiazol-8-ylidene)methyl]amino]-N-2-pyridinyl-benzenesulfonamide
MF:	$C_{21}H_{15}N_5O_3S_2$
FW:	449.5
Purity:	≥98%
Supplied as:	A solid
Storage:	-20°C
Stability:	≥4 years



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

Laboratory Procedures

GW 8510 is supplied as a solid. A stock solution may be made by dissolving the GW 8510 in the solvent of choice, which should be purged with an inert gas. GW 8510 is sparingly soluble (1-10 mg/ml) in DMSO.

Description

GW 8510 is an inhibitor of cyclin-dependent kinase 2 (Cdk2) and Cdk5 (IC_{50}s = 3, 3, and 7 nM for Cdk2/cyclin E, Cdk2/cyclin A, and Cdk5/p25 complexes, respectively).[1] It is selective for Cdk2 and Cdk5 over Cdk1/cyclin B, Cdk4/cyclin D, Cdk7/cyclin H, and Cdk9/cyclin T (IC_{50}s = 49, 139, 317, and 543 nM, respectively). It also decreases ribonucleoside-diphosphate reductase subunit M2 (RRM2) levels and induces autophagy in HCT116 colon cancer cells when used at a concentration of 4 µM.[2] GW 8510 (1-500 nM) protects against MPP^+-induced cytotoxicity in primary human neural progenitor cells derived from induced pluripotent stem cells (iPSCs) in an *in vitro* model of Parkinson's disease.[3] *In vivo*, GW 8510 (2 mg/kg) increases grip strength and gastrocnemius and soleus muscle-to-body weight ratios in a mouse model of muscle atrophy induced by sciatic nerve denervation.[4]

References

1. Jorda, R., Hendrychová, D., Voller, J., *et al.* How selective are pharmacological inhibitors of cell-cycle-regulating cyclin-dependent kinases? *J. Med. Chem.* **61(20)**, 9105-9120 (2018).
2. Hsieh, Y.-Y., Chou, C.-J., Lo, H.-L., *et al.* Repositioning of a cyclin-dependent kinase inhibitor GW8510 as a ribonucleotide reductase M2 inhibitor to treat human colorectal cancer. *Cell Death Discov.* **2**, 16027 (2016).
3. Wimalasena, N.K., Le, V.Q., Wimalasena, K., *et al.* Gene expression-based screen for Parkinson's disease identifies GW8510 as a neuroprotective agent. *ACS Chem. Neurosci.* **7(7)**, 857-863 (2016).
4. Chen, Y., Liu, Z., Liu, C., *et al.* GW8510 alleviates muscle atrophy and skeletal muscle dysfunction in mice through AMPK/PGC1α signaling. *Int. J. Mol. Med.* **56(3)**, 128 (2025).

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