# **PRODUCT** INFORMATION



## Furamidine (hydrochloride)

Item No. 19121

CAS Registry No.:	55368-40-6			
Formal Name:	4,4'-(2,5-furandiyl)bis-	NH		
	benzenecarboximidamide, dihydrochloride			
MF:	$C_{18}H_{16}N_4O \bullet 2HCI$		• 2HCI	
FW:	377.3		.0	
Purity:	≥98%	$\sim$		NH //
Supplied as:	A solid			$\prec$
Storage:	-20°C			NH <sub>2</sub>
Stability:	≥4 years			
Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.				

#### Laboratory Procedures

Furamidine (hydrochloride) is supplied as a solid. A stock solution may be made by dissolving the furamidine (hydrochloride) in the solvent of choice, which should be purged with an inert gas. Furamidine (hydrochloride) is soluble in the organic solvent DMSO. It is also soluble in water. The solubility of furamidine (hydrochloride) in DMSO and water is approximately 1 mg/ml. We do not recommend storing the aqueous solution for more than one day.

#### Description

Furamidine is a cell-permeable inhibitor of protein arginine methyltransferase 1 (PRMT1) that is selective for PRMT1 over PRMT5, PRMT6, and PRMT4/coactivator-associated arginine methyltransferase 1 (CARM1) (IC<sub>50</sub>s = 9.4, 166, 283, and >400  $\mu$ M, respectively).<sup>1</sup> In vitro, furamidine (20  $\mu$ M) inhibits Aly protein methylation in HEK293T cells and growth of several leukemia cell lines. It inhibits tyrosyl-DNA phosphodiesterase (Tdp1) activity on both single- and double-stranded DNA substrates with concentrations in the low micromolar range, but it is more potent against a duplex DNA substrate.<sup>2</sup> Furamidine inhibits growth of *T. brucei*, the parasite that causes sleeping sickness, with  $IC_{50}$  values of 1.5 to 37 nM across various strains.<sup>3</sup> It inhibits the *T. brucei* P2 aminopurine transporter (K<sub>i</sub> = 1.2  $\mu$ M).<sup>3</sup> It also binds to AT-rich DNA sequences in trypanosome kinetoplast DNA.<sup>4-6</sup>

#### References

- 1. Yan, L., Yan, C., Qian, K., et al. J. Med. Chem. 57(6), 2611-2622 (2014).
- 2. Antony, S., Marchand, C., Stephen, A.G., et al. Nucleic Acids Res. 35(13), 4474-4484 (2007).
- 3. Ward, C.P., Wong, P.E., Burchmore, R.J., et al. Antimicrob. Agents Chemother. 55(5), 2352-2361 (2011).
- 4. Liu, Y., Collar, C.J., Kumar, A., et al. J. Phys. Chem. B 112(37), 11809-11818 (2008).
- 5. Mathis, A.M., Holman, J.L., Sturk, L.M., et al. Antimicrob. Agents Chemother. 50(6), 2185-2191 (2006).
- 6. Wilson, W.D., Tanious, F.A., Mathis, A., et al. Biochimie 90(7), 999-1014 (2008).

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

#### SAFFTY 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.

#### WARRANTY AND LIMITATION OF REMEDY

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