Azobenzene

Cat. No.: HY-B2127

CAS No.: 103-33-3

Molecular Formula: $C_{12}H_{10}N_2$

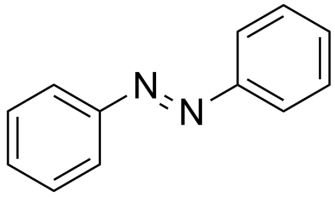
Molecular Weight: 182.22

Target: Others

Pathway: Others

Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	2 years
	-20°C	1 year



SOLVENT & SOLUBILITY

In Vitro

DMSO : ≥ 150 mg/mL (823.18 mM)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Concentration / Solvent / Mass	1 mg	5 mg	10 mg
	1 mM	5.4879 mL	27.4394 mL	54.8787 mL
	5 mM	1.0976 mL	5.4879 mL	10.9757 mL
	10 mM	0.5488 mL	2.7439 mL	5.4879 mL

Please refer to the solubility information to select the appropriate solvent.

BIOLOGICAL ACTIVITY

Description

Azobenzene can be used as an optical trigger for the design and synthesis of a large variety of photoresponsive systems.

In Vitro

Photochromic compounds that undergo large conformational changes when exposed to light of appropriate wavelength are particularly attractive as molecular switch elements. Azobenzene is a popular choice among the chromophores. The thermodynamically favored trans isomer is rapidly converted to the cis isomer by irradiation at the wavelength of the π-π* transition, whereas the reverse process is achieved either (slowly) by thermal relaxation in the dark or (quickly) by irradiation at the wavelength of the n-π* transition. The azobenzene amino acid (aa) can be used as a photo-inducible conformational switch in polypeptides. A reversible conformational change of the peptide backbone is induced by switching between the cis and trans configurations of the azobenzene moiety by irradiation with light of suitable wavelength[1]. Azobenzene has been the most widely used optical trigger for the synthesis of photoresponsive systems ranging from poly-a-amino acids to innovative materials with light-controlled mechanical and optical properties. Its use in form of appropriate derivatives allow to generate cyclic peptide structures of constraint conformational space and thus to exploit its reversible photoisomerization to induce well defined transitions between different conformational states[2]. Azobenzene photoswitches can be used to drive functional changes in peptides, proteins, nucleic acids, lipids, and carbohydrates[3].

	MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Aemissegger A, et al. Synthesis and application of an azobenzene amino acid as a light-switchable turn element in polypeptides. Nat Protoc. 2007;2(1):161-7.

[2]. Renner C, et al. Azobenzene as photoresponsive conformational switch in cyclic peptides. J Pept Res. 2005 Jan;65(1):4-14.

[3]. Beharry AA, et al. Azobenzene photoswitches for biomolecules. Chem Soc Rev. 2011 Aug;40(8):4422-37.

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