Product Data Sheet

Product Name: Hoechst 34580
Cat. No.: GC17657

Chemical Properties

Cas. No.	23555-00-2		
Chemical Name	N,N-dimethyl-4-(6-(4-methylpiperazin-1-yl)-1H,3'H-[2,5'-bibenzo[d]imidazol]-2'-yl)aniline		
SMILES	CN1CCN(C2=CC3=C(N=C(C4=CC5=C(N=C(C6=CC=C(N(C)C)C=C6)N5)C=C4)N3)C=C2)CC1		
Formula	$C_{27}H_{29}N_7$	M.Wt	451.57
Solubility	≥ 6.46 mg/mL in DMSO, ≥ 15.87 mg/mL in Water with ultrasonic and warming	Storage	Store at -20°C
General tips	For obtaining a higher solubility , please warm the tube at 37 ℃ and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20℃ for several months.		
Shipping Condition	Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.		
Structure	Hoechst 34580		

Protocol

□□Hoechst 34580□□□□□

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1. □□□□□

(1)□□□□□□□□□DMSO□□□□□□1mM□Hoechst 34580□□□□□□□□□□□□□□□□-20°C□□□□□□□□□□□□

(2)□□□□□□□□□□PBS□□□□□□1μM□□□

2. □□□□□□□□□□

(1)□□□□□□14mm□□□□□□□□□□70-80%□□□□□□

(2)□□0.05%□□-EDTA□37℃□□3□□□□□□□□□□□□□□□□□2ml□□10% FBS□□□□□□□□□□

(3)□□□□□□□□15ml□□□□□2ml PBS□□□□□□□□□□□□□□□□□□□1000g□4℃□5min□□□□□□□□

(4)□□□□PBS□□□□

(5)□□□□□□□100μl□□□□□□4°C□□□□□□□20□□□

(6)□□□□□□□PBS□□2□□□□□PBS□□□□□□□□□□□□□□

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Product Data Sheet

3. □□□□□□□□□□

(1)□□1×10^6□□□□□PBS□□2□□

(2)□□□1ml 1μM□□□□□□□20min□□□□

(3)□□2□□1000g; 4℃□3min□□□□□PBS□□□□□□□□□□□□□□

4. □□□□:

(1)□□□□□□□□□□□□□□□□□□□□□□□□□□

(2)□□□□□□□□□□□□□□□□□□□□□□□□□□□

(3) Hoechst 34580□□□□□□□□□□□□□□

(4)□□□□□□□□□□□□□□□□□

References:

[1] Abdollahi E, Taucher-Scholz G, Jakob B. Application of fluorescence lifetime imaging microscopy of DNA binding dyes to assess radiation-induced chromatin compaction changes[J]. International journal of molecular sciences, 2018, 19(8): 2399.

Background

Hoechst 34580□□□DNA□□□□□□□□□□368nm□□□□□□□□437nm[1]□Hoechst 34580□□□DNA□□□A–T□□□□□□□□□□□□□□□DNA□□□□□□□□□□□□□□□□[2]□Hoechst 34580□□□□□□□□□□□0.86μM□IC_{50}□□□Aβ42□□□[3]□Hoechst 34580□□□□□□□□□□□□□□□□□□□□□□□□□□□□[4]□

Hoechst 33342 trihydrochloride

Fig. Fluorescence excitation and emission spectra of Hoechst 34580 bound to DNA

References:

[1] Selph K E. Enumeration of marine microbial organisms by flow cytometry using near-UV excitation of Hoechst 34580-stained DNA[J]. Limnology and Oceanography: Methods, 2021, 19(10): 692-701.

[2] Bucevičius J, Lukinavičius G, Gerasimaitė R. The use of hoechst dyes for DNA staining and beyond[J]. Chemosensors, 2018, 6(2): 18.

[3] Thai N Q, Tseng N H, Vu M T, et al. Discovery of DNA dyes Hoechst 34580 and 33342 as good candidates for inhibiting amyloid beta formation: in silico and in vitro study[J]. Journal of Computer-Aided Molecular Design, 2016, 30(8): 639-650.

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