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TOCRIS

Print Date: Mar 19th 2025

Certificate of Analysis

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Product Name: **K 114** **Catalog No.: 3144** **Batch No.: 3**

CAS Number: 872201-12-2

IUPAC Name: 4,4'-[(2-Bromo-1,4-phenylene)di-(1*E*)-2,1-ethenediyl]bisphenol

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: $C_{22}H_{17}BrO_2$

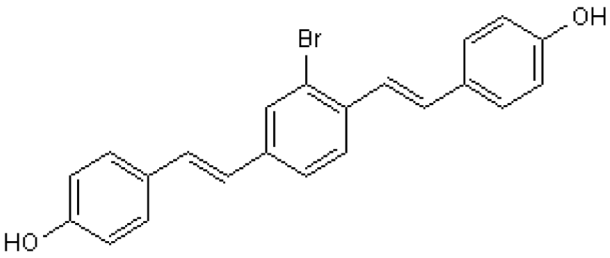
Batch Molecular Weight: 393.27

Physical Appearance: Yellow solid

Solubility: DMSO to 100 mM
ethanol to 50 mM

Storage: Store at +4°C

Batch Molecular Structure:



2. ANALYTICAL DATA

TLC: R_f = 0.2 (Ethyl acetate:Petroleum ether [4:1])

HPLC: Shows 98.1% purity at 367 nm

^{1}H NMR: Consistent with structure

Mass Spectrum: Consistent with structure

Microanalysis:

	Carbon	Hydrogen	Nitrogen
Theoretical	67.19	4.36	
Found	66.79	4.26	

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Description:

Key information: K 114 is a potent amyloid fibril-specific fluorescent probe (EC_{50} = 20 - 30 nM). Used for: amyloid fibril detection. Application: fluorescence microscopy, confocal microscopy. Properties and Photophysical Data: K 114 exhibits minimal fluorescence in aqueous buffers and fluoresces brightly in the presence of Aβ (1-40), α-synuclein and tau in situ. K 114 fluorescence is ph-dependent. Excitation and emission maxima (λ) are 370nm and 450 nm, respectively, at pH 8.5; excitation and emission maxima (λ) are 395nm and 520 nm, respectively, at pH 10.5.

Physical and Chemical Properties:

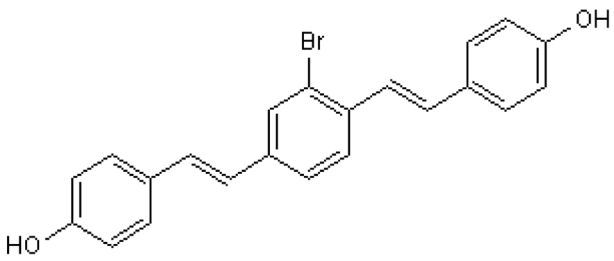
Batch Molecular Formula: $C_{22}H_{17}BrO_2$

Batch Molecular Weight: 393.27

Physical Appearance: Yellow solid

Minimum Purity: ≥98%

Batch Molecular Structure:



Storage: Store at +4°C

CAUTION - This product is light sensitive and we recommend that the solid material and any solutions obtained are protected from exposure to light.

Solubility & Usage Info:

DMSO to 100 mM
ethanol to 50 mM

Stability and Solubility Advice:

Some solutions can be difficult to obtain and can be encouraged by rapid stirring, sonication or gentle warming (in a 45-60°C water bath).

Information concerning product stability, particularly in solution, has rarely been reported and in most cases we can only offer a general guide. *Unless contradicted by product-specific protocols or instructions, our standard recommendations apply:

SOLIDS: Provided storage is as stated on the product label and the vial is kept tightly sealed, the product can be stored for up to 6 months from date of receipt.

SOLUTIONS: We recommend that stock solutions, once prepared, are stored aliquoted in tightly sealed vials at -20°C or below and used within 1 month. Wherever possible solutions should be made up and used on the same day.

References:

Stepanchuk *et al* (2021) Complex photophysical properties of K114 make for a versatile fluorescent probe for amyloid detection. ACS Chem.Neurosci. ***12*** 1273. PMID: 33705095.

LeVine (2005) Mechanism of Aβ(1-40) fibril-induced fluorescence of (trans-trans)-1-bromo-2,5-bis(4-hydroxystyryl)benene (K114). Biochemistry ***44*** 15937. PMID: 16313197.

Crystal *et al* (2003) A comparison of amyloid fibrillogenesis using the novel fluorescent compound K114. J.Neurochem. ***86*** 1359. PMID: 12950445.

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