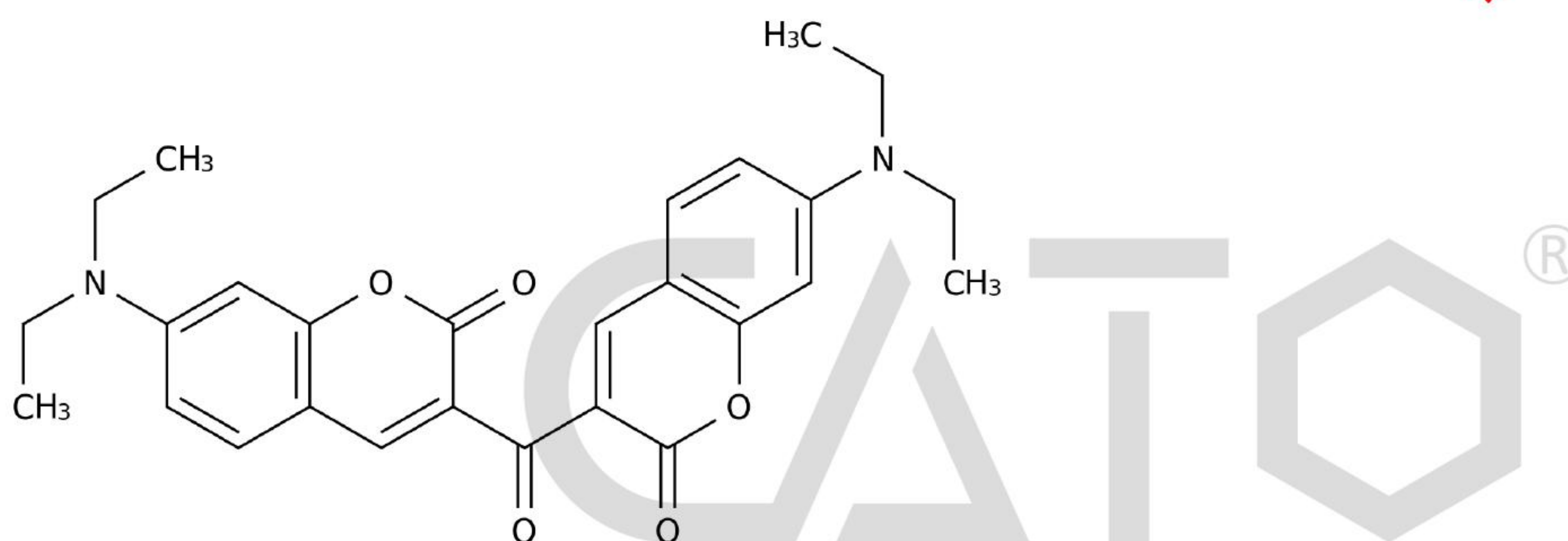


Certificate of Analysis

Reference Material & Standard

Product Name:	3,3'-Carbonylbis(7-diethylaminocoumarin)	Catalogue Number:	CCFD201699
Synonyms:	N/A	Lot Number:	0308-RD-0062
CAS Number:	63226-13-1	Expiry Date:	Mar 09, 2026
Molecular Formula:	C ₂₇ H ₂₈ N ₂ O ₅	Storage:	Room Temp Protected from light and Sealed
Molecular Weight:	460.52	Warning:	

Chemical Structure:



Test Items	Method	Results
Appearance	Visual inspection	Yellow Powder
Identification	LCMS&HNMR	Confirmed
Purity	HPLC	100.000%
Loss On Drying	TGA	0.0482%
Assay		100.0%
Uncertainty		±2.0%

Comment:

1. The calculation of the 100% method follows the formula (calculated on the non-dried basis):

$$\text{Assay (\%)} = (100\% - \text{Loss On Drying}) * \text{Purity HPLC (\%)} / 100\%$$

Loss On Drying is considered as absolute effect, HPLC purity is considered as relative effect.

2. The uncertainty values are the expanded uncertainty and represent an estimated standard deviation equal to the positive square root of the total variation of the uncertainty of components. A normal distribution is assumed and a coverage factor of K=2 is chosen using approximately a 95% confidence level.

Signature:

Prepared by:

Hin Lam

Reviewed by:

Debia

Approved by General Manager:

David

Date: Mar 10, 2022

Date: Mar 11, 2022

Date: Mar 11, 2022

