## **Certificate of Analysis**



## Product Identification

**Chemical Structure** 

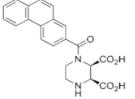
Catalog numberHB0531Compound namePPDA

Chemical name (2S,3R)-1-(Phenanthren-2-carbonyl)piperazine-2,3-dicarboxylic acid

 $\begin{array}{lll} \textbf{Batch number} & & \textbf{E1418-1-4} \\ \textbf{Batch molecular formula} & & \textbf{C}_{21}\textbf{H}_{18}\textbf{N}_2\textbf{O}_5.2.6\textbf{H}_2\textbf{O} \end{array}$ 

Batch molecular weight 425.22

Solubility



Meets specification

Date

## Method QC requirement QC Result

HPLC Reverse Phase HPLC shows >98% purity Meets specification: 98.3% NMR 1H NMR in D<sub>2</sub>O/NaOD at 400 MHz consistent with Meets specification Mass spectrum Electrospray negative analysis consistent with Meets specification Elemental analysis is within 0.4% for the batch Microanalysis Meets specification molecular formula TLC TLC analysis in 40% PAW/BuOH shows one spot Meets specification: R<sub>f</sub>=0.3 under ninhydrin Physical appearance White to off-white solid Meets specification: White solid

Soluble in water with 2 eq. NaOH (50 mM) and in DMSO (100 mM)

Produced by

Signature

Passed by

Signature

This product is for RESEARCH USE ONLY and is not intended for therapeutic or diagnostic use. Not for human or veterinary use.