

# Certificate of Analysis

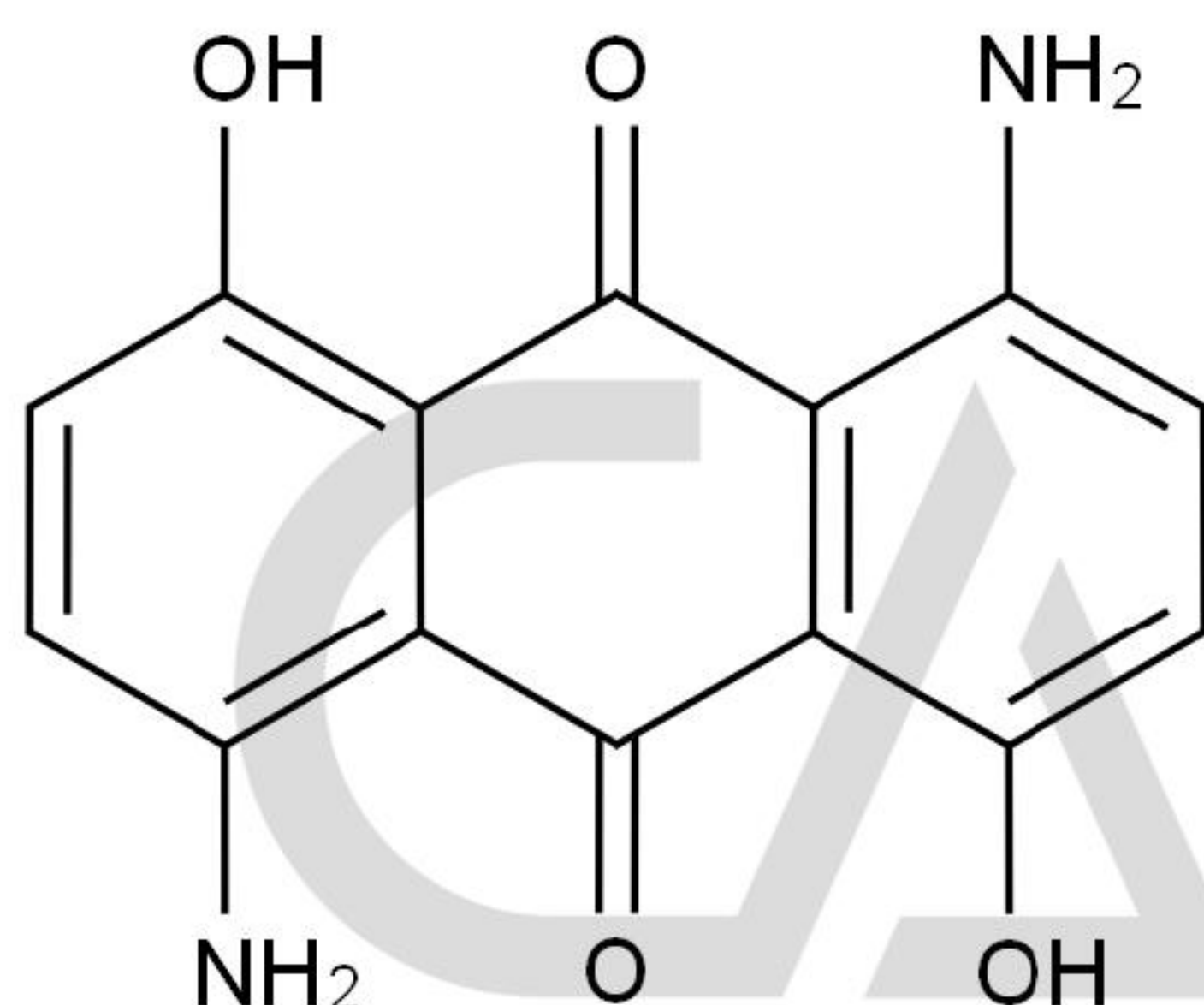
## Reference Material & Standard

|                    |                                                               |                     |                                           |
|--------------------|---------------------------------------------------------------|---------------------|-------------------------------------------|
| Product Name:      | 1,5-Diamino-4,8-dihydroxyanthraquinone                        | Catalogue Number:   | CCHM702926                                |
| Synonyms:          | N/A                                                           | Lot Number:         | 1219-RD-0035                              |
| CAS Number:        | 145-49-3                                                      | Expiry Date:        | Dec 22, 2025                              |
| Molecular Formula: | C <sub>14</sub> H <sub>10</sub> N <sub>2</sub> O <sub>4</sub> | Storage:            | 2°C ~ 8°C Protected from light and Sealed |
| Molecular Weight:  | 270.24                                                        | Shipping Condition: | Shipping at Room Temperature              |

Warning:



Chemical Structure:



| Test Items     | Method            | Results      |
|----------------|-------------------|--------------|
| Appearance     | Visual inspection | Black Powder |
| Identification | LCMS&HNMR         | Confirmed    |
| Purity         | HPLC              | 99.754%      |
| Loss on Drying | TGA               | 0.1676%      |
| Assay          |                   | 99.6%        |
| Uncertainty    |                   | ±2.0%        |

## Comment:

1. The calculation of the mass balance 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:

*Yuki*

Reviewed by:

*Xenia*

Approved by General Manager:

*David*

Date: Dec 23, 2022

Date: Dec 27, 2022

Date: Dec 27, 2022



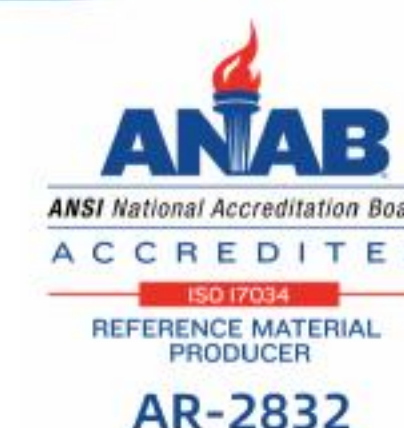
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