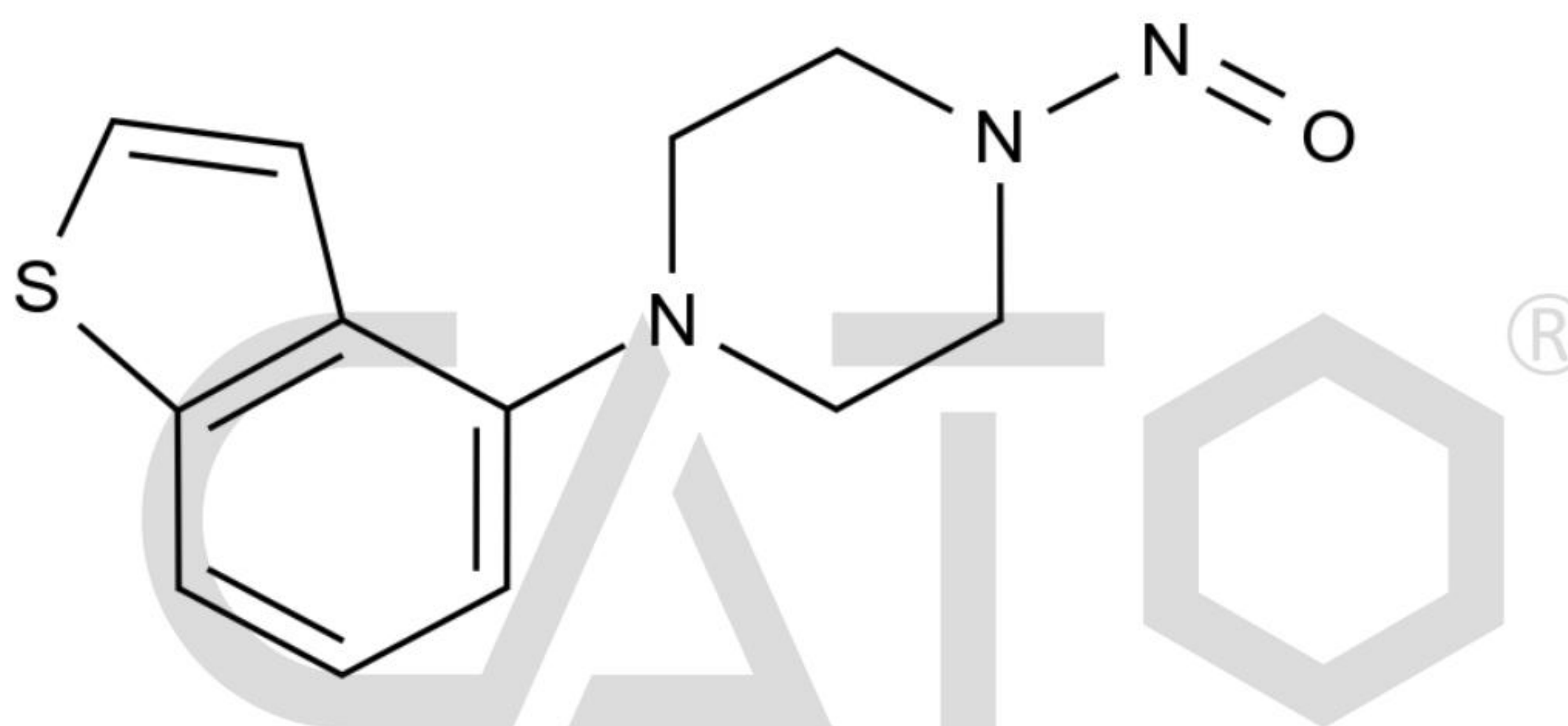


# Certificate of Analysis

## Reference Material & Standard

|                           |                                                   |                            |                                           |
|---------------------------|---------------------------------------------------|----------------------------|-------------------------------------------|
| <b>Product Name:</b>      | Piperazine Impurity 33                            | <b>Catalogue Number:</b>   | C4X-242733                                |
| <b>Synonyms:</b>          | N/A                                               | <b>Lot Number:</b>         | 0320-RH-0064                              |
| <b>CAS Number:</b>        | 2639426-95-0                                      | <b>Expiry Date:</b>        | Mar 23, 2030                              |
| <b>Molecular Formula:</b> | C <sub>12</sub> H <sub>13</sub> N <sub>3</sub> OS | <b>Storage:</b>            | -20°C±5°C Protected from light and Sealed |
| <b>Molecular Weight:</b>  | 247.32                                            | <b>Shipping Condition:</b> | Shipping with Ice Packs                   |
| <b>Solubility:</b>        | Acetonitrile                                      |                            |                                           |

Chemical Structure:



| Test Items     | Method            | Results      |
|----------------|-------------------|--------------|
| Appearance     | Visual inspection | Yellow Solid |
| Identification | LCMS&HNMR         | Confirmed    |
| Purity         | HPLC              | 100.000%     |
| Loss On Drying | TGA               | 0.4588%      |
| Assay          |                   | 99.5%        |

## Comment:

The calculation of the mass balance method follows the formula (calculated on the non-dried basis):

Assay (%) = (100% - Loss On Drying) \* Purity HPLC (%) / 100%

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

Signature:

Prepared by:

*Nice*

Reviewed by:

*Koi*

Approved by General Manager:

*David*

Date: Mar 24, 2026

Date: Mar 24, 2026

Date: Mar 24, 2026



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