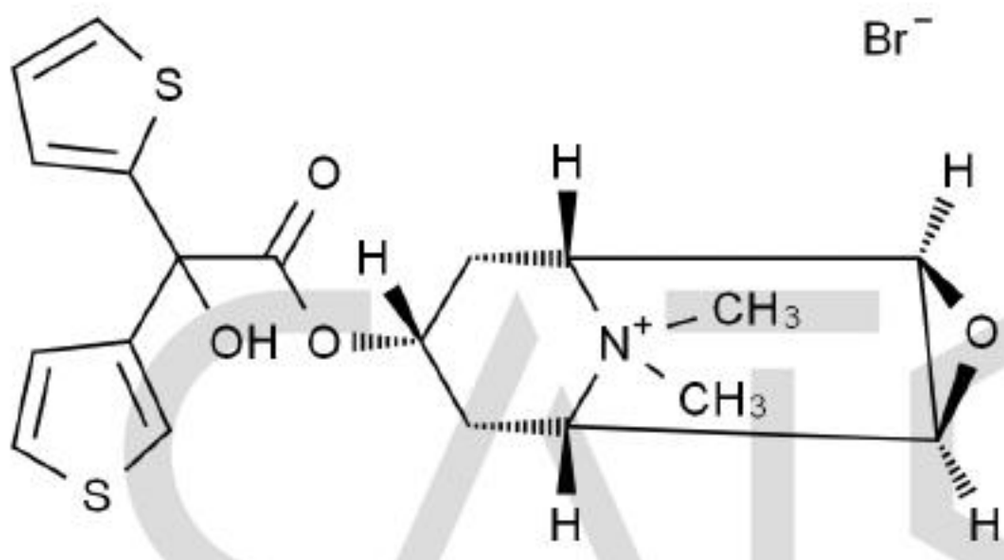
# Certificate of Analysis

## Reference Material & Standard

| | | | |
|---|---|---|---|
| **Product Name:** | Tiotropium Bromide Impurity 24 | **Catalogue Number:** | C4X-176424 |
| **Synonyms:** | N/A | **Lot Number:** | 0611-SA-7379 |
| **CAS Number:** | 1978292-75-9 | **Expiry Date:** | Jun 10, 27 |
| **Molecular Formula:** | $C_{19}H_{22}NO_4S_2$ Br | **Storage:** | 2°C ~ 8°C Protected from light and Sealed |
| **Molecular Weight:** | 392.51 79.90 | | |

**Chemical Structure:**




| Test Items | Method | Results |
|---|---|---|
| **Appearance** | Visual inspection | Solid |
| **Identification:** | LC&HNMR | Confirmed |
| **Purity:** | HPLC | 97.643% |

CATO Research Chemicals Inc.

**Signature:**

Prepared by: Lisa — Date: Jun 11, 23

Reviewed by: Yuki — Date: Jun 11, 23

Approved by General Manager: David — Date: Jun 11, 23

CATO Research Chemicals Inc.

## Directions:

*1. Intended use: This product is suitable for identification and quantification of the analyte(s), instrument calibration, method development and quality control in analytical and R&D applications. It is not intended for administration to humans or animals, and shall not be used to diagnose, treat or cure any diseases.*

*2. Minimum sample size: 1mg is recommended as the minimum sample size.*

*3. Metrological traceability: This product meets the requirements of ISO 17034 and is traceable to NMI through an unbroken chain of comparisons.*

*4. Instructions for handling and correct use: Handling in a well-ventilated place.*

## Document Version:

| Revision No. | Date | Reason for Revision |
|---|---|---|
| 01 | Jun 11, 23 | First release. |

CATO Research Chemicals Inc.