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**Certificate of Analysis**

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Product Name: Tiotropium Bromide hydrate  
Cat. No.: GC13134  
Batch No.: 1  
Chemical Name: (1R,2R,4S,5S,7s)-7-(2-hydroxy-2,2-di(thiophen-2-yl)acetoxy)-9,9-dimethyl-3-oxa-9-azatricyclo[3.3.1.0<sup>2,4</sup>]nonan-9-ium bromide hydrate

**PHYSICAL AND CHEMICAL PROPERTIES**

Cas. No.: 139404-48-1  
Molecular Formula: C<sub>19</sub>H<sub>22</sub>NO<sub>4</sub>S<sub>2</sub>.Br.xH<sub>2</sub>O  
Molecular Weight: 490.43  
Storage: Store at -20°C  
Chemical Structure:

**ANALYTICAL DATA**

Appearance: solid  
HNMR: Consistent with structure  
HPLC: Consistent with structure  
Purity: >98%  
Conclusion: The product has been tested and complies with the given specifications.

**Caution: Product has not been fully validated for medical applications. For research use only.**

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