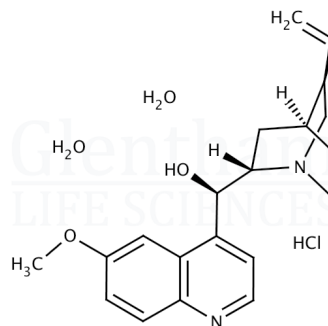


## Certificate of Analysis

|                 |                                 |
|-----------------|---------------------------------|
| Product Name    | Quinine hydrochloride dihydrate |
| Glentham Code   | GA8217                          |
| CAS Number      | 6119-47-7                       |
| EINECS          | 205-001-1                       |
| MDL-Nummer      | MFCD00078498                    |
| Zusätzliche CAS | 130-89-2                        |
| Zusätzliche CAS | 60-93-5 ( $\cdot 2\text{HCl}$ ) |
| PubChem SID     | 310279542                       |
| Batch Number    | 690UFJ                          |

|                   |                                                                                             |
|-------------------|---------------------------------------------------------------------------------------------|
| Molecular Weight  | 396.91                                                                                      |
| Molecular Formula | $\text{C}_{20}\text{H}_{24}\text{N}_2\text{O}_2 \cdot \text{HCl} \cdot 2\text{H}_2\text{O}$ |
| Storage Temp.     | +20°C                                                                                       |



| Property                       | Specification                                    | Batch 690UFJ                    |
|--------------------------------|--------------------------------------------------|---------------------------------|
| Physical Description           | White or almost white crystalline powder         | Almost white crystalline powder |
| Identification                 | Identification tests A, B, C, D, E               | Entspricht                      |
| Appearance of Solution         | Clear, and colour $\leq \text{Y6}$               | Entspricht                      |
| pH (1% in water)               | 6.0 - 6.8                                        | 6.2                             |
| Specific Optical Rotation      | -245 - -258 °                                    | -250°                           |
| Other Cinchona Alkaloids       | Dihydroquinine hydrochloride: $\leq 10.0\%$      | 5.2%                            |
|                                | Any impurity eluted before quinine: $\leq 5.0\%$ | 1.6%                            |
|                                | Any Other Impurity: $\leq 2.5\%$                 | 0.0%                            |
| Loss on Drying                 | 6.0 - 10.0 %                                     | 7.4%                            |
| Sulphated Ash                  | $\leq 0.1\%$                                     | Entspricht                      |
| Sulphates                      | $\leq 500\text{ppm}$                             | Entspricht                      |
| Barium Test                    | No turbidity produced                            | Entspricht                      |
| Heavy Metals                   | $\leq 10\text{ppm}$                              | Entspricht                      |
| Assay                          | 99.0 - 101.0 %                                   | 99.8%                           |
| Pharmacopoeia Specification(s) | Conforms to BP, EP                               | Entspricht                      |

|                       |            |
|-----------------------|------------|
| Specification Version | v1.0       |
| Manufacture Date      | 2023-06-30 |
| Re-Test Date          | 2033-05-28 |

Glentham Life Sciences confirm that the above referenced product conformed to the information displayed in this document on the quality release date. Please check [www.glentham.com](http://www.glentham.com) or contact us using the details above for the current version of this document.

This document was generated electronically and is therefore valid without signature. © Glentham Life Sciences Ltd, 2025