

# Certificate of Analysis

|              |                                                                               |                   |                                                                                     |
|--------------|-------------------------------------------------------------------------------|-------------------|-------------------------------------------------------------------------------------|
| Product      | HGH 191AA<br>(Somatropin)                                                     | CAS No. :         | 12629-01-5                                                                          |
| Product No.: | HGH191AA                                                                      | Molecular Formula | C <sub>990</sub> H <sub>1592</sub> N <sub>268</sub> O <sub>288</sub> S <sub>6</sub> |
| Sequence     | Amino acid sequence: 191 amino acids<br>( Identical to human growth hormone ) |                   |                                                                                     |
| Batch No.    | HGH191AA-260601                                                               | Quantity          | 2.0kg                                                                               |
| Mfg. Date    | May 26th, 2026                                                                | Retest Date       | May 25th, 2028                                                                      |

| 【 ITEMS 】                                   | 【 SPECIFICATIONS 】                                                                                                                     | 【 RESULTS 】              |
|---------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| Appearance                                  | White or almost white lyophilized powder                                                                                               | White lyophilized powder |
| Solubility                                  | Freely soluble in water                                                                                                                | Conforms                 |
| Solution clarity and color                  | Clear and colorless                                                                                                                    | Conforms                 |
| Specific optical rotation $[\alpha]_D^{20}$ | -20.0° to -40.0° (anhydrous and sodium ion-free substance)                                                                             | -25.6°                   |
| Identification by HPLC                      | The retention time of the principal peak of the test solution corresponds to that of the reference solution, as obtained in the Assay. | Conforms                 |
| Molecular weight (calculated)               | 22,125 Da                                                                                                                              | 22,126 Da (by MS)        |
| pH (1mg/mL in water)                        | 6.0~7.5                                                                                                                                | 6.8                      |
| Water content(KF)                           | NMT 8.0%                                                                                                                               | 3.9%                     |
| Related proteins(HPLC)                      | Any individual impurity: NMT 1.0%<br>Total impurities: NMT 2.0%                                                                        | 0.21%<br>0.76%           |
| Purity (HPLC)                               | NLT 98.0%                                                                                                                              | 99.12%                   |
| Sodium ion                                  | 1.0~2.0%                                                                                                                               | 1.4%                     |
| High molecular protein                      | NMT 1.0%                                                                                                                               | 0.35%                    |
| Amino acid content                          | Corresponds to the theoretical composition of HGH 191AA                                                                                | Conforms                 |
| Biological activity                         | NLT 3.0 IU/mg (in vivo assay)                                                                                                          | 3.6 IU/mg                |
| Endotoxin                                   | NMT 10 EU/mg                                                                                                                           | <3 EU/mg                 |
| Amino acid sequence                         | 191 amino acids sequence identical to human growth hormone (Somatropin)                                                                | Conforms                 |



|                                                                      |                                                                                                                    |                                  |
|----------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|----------------------------------|
| Residual solvent                                                     | Methylene chloride NMT 600ppm<br>Acetonitrile NMT 410ppm<br>Methyl tert-butyl ether NMT 5000 ppm<br>DMF NMT 880ppm | N.D<br>28ppm<br>N.D<br>N.D       |
| Peptide content                                                      | NLT 90.0%                                                                                                          | 91.5%                            |
| Bacterial endotoxins                                                 | NMT 10EU/mg                                                                                                        | <3EU/mg                          |
| Microbial limits                                                     | TAMC NMT 100 cfu/g<br>TYMC NMT 100 cfu/g<br>E. Coli: Absent                                                        | <20 cfu/g<br><20 cfu/g<br>Absent |
| Assay                                                                | 95.0%~105.0%(Calculated with reference to the dried basis.)                                                        | 98.7%                            |
| Storage                                                              | Store at 2~8°C, protected from light. Do not freeze.                                                               |                                  |
| Report                                                               | <i>Li peng</i>                                                                                                     | Date 2026.06.03                  |
| Reviewer                                                             | <i>Fang Hui Liao</i>                                                                                               | Date 2026.06.03                  |
| Conclusion: This batch of product complies with Enterprise Standard. |                                                                                                                    |                                  |



It is only supplied as chemical product.  
It is only for R&D use.

Testing Organization:  
Shanghai High Purity Peptide Biotechnology Co., Ltd.  
上海高纯肽生物科技有限公司