

## Analytical Data Sheet

Lot number **1069145**  
not for drug use

Catalog number **G-3220.0005**  
Product number **4001222.0005**  
Product **H- Ser- Phe- OH**  
Molecular formula **C<sub>12</sub>H<sub>16</sub>N<sub>2</sub>O<sub>4</sub>**  
Relative molecular mass **252.27**

| Tests                               | Results   |        |       |            |            |           |           |            |            |
|-------------------------------------|---|--------|-------|------------|------------|-----------|-----------|------------|------------|
| Appearance                          | white powder  |        |       |            |            |           |           |            |            |
| Appearance of solution              | clear, colorless solution (10 mg/mL in AcOH 80%)  |        |       |            |            |           |           |            |            |
| Identification (ESI-MS)             | m = 252.2u (average mass)   |        |       |            |            |           |           |            |            |
| Identification (elemental analysis) | <table> <thead> <tr> <th>Theory</th> <th>Found</th> </tr> </thead> <tbody> <tr> <td>C = 57.1 %</td> <td>C = 56.8 %</td> </tr> <tr> <td>H = 6.4 %</td> <td>H = 6.2 %</td> </tr> <tr> <td>N = 11.1 %</td> <td>N = 10.9 %</td> </tr> </tbody> </table> | Theory | Found | C = 57.1 % | C = 56.8 % | H = 6.4 % | H = 6.2 % | N = 11.1 % | N = 10.9 % |
| Theory                              | Found   |        |       |            |            |           |           |            |            |
| C = 57.1 %                          | C = 56.8 %  |        |       |            |            |           |           |            |            |
| H = 6.4 %                           | H = 6.2 %   |        |       |            |            |           |           |            |            |
| N = 11.1 %                          | N = 10.9 %  |        |       |            |            |           |           |            |            |
| Identification (TLC)                | complies with authentic material  |        |       |            |            |           |           |            |            |
| Specific optical rotation           | $[\alpha]_D^{24} = +19.8^\circ$ (0.5 % in 1N HCl)   |        |       |            |            |           |           |            |            |
| Purity (TLC)                        | > 99%   |        |       |            |            |           |           |            |            |
| TLC conditions                      | methanol/chloroform/ammonia 17% 2/2/1<br>ethylacetate/pyridine/acetic acid/H <sub>2</sub> O 60/60/12/36<br>n-butanol/acetic acid/H <sub>2</sub> O 4/2/2<br>plate: silicagel 60 F <sub>254</sub><br>detected by: UV, ninhydrin, chlorine-tolidine    |        |       |            |            |           |           |            |            |
| Assay (elemental analysis)          | 98.5% (Nth 11.10 %, Nfd 10.93 %)  |        |       |            |            |           |           |            |            |
| Assay (titration)                   | 98.3% (HClO <sub>4</sub> )  |        |       |            |            |           |           |            |            |

Latest update: December 20, 2016

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