## Chem-Impex International, Inc.

Tel: (630) 766-2112 E-mail: sales@chemimpex.com Shipping and Correspondence: 935 Dillon Drive Wood Dale, IL 60191 Fax: (630) 766-2218 Web site: www.chemimpex.com Manufacturing site: 825 Dillon Drive Wood Dale, IL 60191

## Certificate of Analysis

| Lot Number   000129-11046                                                                                                                                                                                                                                                                   |                                            | 12(20                                                               |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|---------------------------------------------------------------------|
|                                                                                                                                                                                                                                                                                             |                                            |                                                                     |
| Decoder of $\lambda_{0}$ $\Sigma_{-1}$ $\lambda_{0}$ $\Sigma_{-1}$ $\lambda_{0}$ $\lambda_{1}$ $\lambda_{1}$ $\lambda_{1}$ $\lambda_{1}$ $\lambda_{1}$                                                                                                                                      | Lot Number                                 | 000129-11046                                                        |
| Product N <sup>w</sup> -Fmoc-N <sup>v</sup> -(4,4-dimethyl-2,6-                                                                                                                                                                                                                             | Product                                    | $N^{\alpha}$ -Fmoc- $N^{\delta}$ -(4,4-dimethyl-2,6-                |
| dioxocyclohex-1-ylidene)-3-methylbutyl-L-                                                                                                                                                                                                                                                   |                                            | dioxocyclohex-1-ylidene)-3-methylbutyl-L-                           |
| ornithine                                                                                                                                                                                                                                                                                   |                                            | ornithine                                                           |
|                                                                                                                                                                                                                                                                                             |                                            | Fmoc-L-Orn(ivDde)-OH                                                |
| Fmoc-L-Orn(ivDde)-OH                                                                                                                                                                                                                                                                        | CAS Number                                 | 1198321-33-3                                                        |
|                                                                                                                                                                                                                                                                                             | Molecular Formula                          | $C_{33}H_{40}N_2O_6$                                                |
| <b>CAS Number</b> 1198321-33-3                                                                                                                                                                                                                                                              | Molecular Weight                           | 560.6                                                               |
| CAS Number   1198321-33-3     Molecular Formula   C <sub>33</sub> H <sub>40</sub> N <sub>2</sub> O <sub>6</sub>                                                                                                                                                                             | Appearance                                 | White crystalline powder                                            |
| CAS Number 1198321-33-3   Molecular Formula $C_{33}H_{40}N_2O_6$ Molecular Weight 560.6                                                                                                                                                                                                     | Melting Point                              | 59-62 °C                                                            |
| CAS Number1198321-33-3<br>C_{33H40N_2O_6}Molecular Formula560.6Molecular Weight560.6AppearanceWhite crystalline powder                                                                                                                                                                      | <b>Optical Rotation</b>                    | [a] <sub>D</sub> <sup>20</sup> = +32.2° (C=1 in CHCI <sub>3</sub> ) |
| CAS Number1198321-33-3<br>C_33H40N2O6Molecular FormulaC33H40N2O6Molecular Weight560.6AppearanceWhite crystalline powder<br>59-62 °C                                                                                                                                                         | Solvent                                    | DCM, Hexane                                                         |
| CAS Number1198321-33-3<br>$C_{33}H_{40}N_2O_6$ Molecular Formula560.6Molecular Weight560.6AppearanceWhite crystalline powderMelting Point59-62 °COptical Rotation $[a]_D^{20} = +32.2^{\circ}$ (C=1 in CHCl <sub>3</sub> )                                                                  | A h 4*4 4*                                 | 90 <i>5</i> M                                                       |
| CAS Number1198321-33-3<br>$C_{33}H_{40}N_2O_6$ Molecular Formula560.6Molecular Weight560.6AppearanceWhite crystalline powderMelting Point59-62 °COptical Rotation $[a]_D^{20} = +32.2^{\circ}$ (C=1 in CHCl <sub>3</sub> )                                                                  | Assay by utration                          | 80.5%                                                               |
| CAS Number1198321-33-3<br>$C_{33}H_{40}N_2O_6$ Molecular Formula560.6Molecular Weight560.6AppearanceWhite crystalline powderMelting Point59-62 °COptical Rotation $[a]_D^{20} = +32.2^{\circ}$ (C=1 in CHCl_3)SolventDCM, Hexane                                                            |                                            |                                                                     |
| CAS Number1198321-33-3<br>$C_{33}H_{40}N_2O_6$ Molecular Formula560.6Molecular Weight560.6AppearanceWhite crystalline powderMelting Point59-62 °COptical Rotation $[a]_D^{20} = +32.2^{\circ}$ (C=1 in CHCl <sub>3</sub> )SolventDCM, HexaneAssay by titration80.5%                         | Purity by HPLC                             | 99%                                                                 |
| CAS Number1198321-33-3<br>$C_{33}H_{40}N_2O_6$ Molecular Formula560.6Molecular Weight560.6AppearanceWhite crystalline powderMelting Point59-62 °COptical Rotation $[a]_D^{20} = +32.2^{\circ}$ (C=1 in CHCl_3)SolventDCM, HexaneAssay by titration80.5%Purity by HPLC99%                    | Purity by HPLC<br>Purity by TLC            | 99%<br>> 99%                                                        |
| CAS Number1198321-33-3<br>$C_{33}H_{40}N_2O_6$ Molecular Formula560.6Molecular Weight560.6AppearanceWhite crystalline powderMelting Point59-62 °COptical Rotation $[a]_{D}^{20} = +32.2^{\circ}$ (C=1 in CHCl_3)SolventDCM, HexaneAssay by titration80.5%Purity by HPLC99%Purity by TLC>99% | Purity by HPLC<br>Purity by TLC<br>Storage | 99%<br>> 99%<br>Store at 0-8 °C                                     |
| ornithine                                                                                                                                                                                                                                                                                   |                                            | Fmoc-L-Orn(ivDde)-OH<br>1198321-33-3                                |
| Product /v%-Emoc-/v%-t4 4-dimethvt-7.6-                                                                                                                                                                                                                                                     |                                            |                                                                     |
|                                                                                                                                                                                                                                                                                             |                                            |                                                                     |
|                                                                                                                                                                                                                                                                                             | Catalogue Number                           | 12620                                                               |

The foregoing is a copy of the Certificate of Analysis as provided by our supplier

kumer.

Bala Kumar Quality Control Manager