杭州东瑞医药科技有限公司 HANGZHOU DAWN RAY PHARMACEUTICAL CO.,LTD.

CERTIFICATE OF ANALYSIS

Tigecycline (CAS 220620-09-7)

| Batch No.: DR20131002 | Piece: 2.0kg |
|------------------------------|--------------------------------|
| Manufacture Date: 2013.10.02 | Expiry Date: 2015.10.01 |

TESTS:

| Items | Specification | Results |
|---|--|---------------------------|
| Appearance | Orange to orange-red crystalline powder | Orange crystalline powder |
| Water | ≤2.0% | 0.83% |
| Solubility | Soluble in water, slightly soluble in ethanol ,very slightly soluble in and methanol | Conforms |
| Identification by A) IR B) HPLC | The infrared absorption spectrum is consistent with the spectrum of Tigecycline reference The retention times of the major peaks in the chromatogram of the assay preparation correspond to those of th standard preparation as obtained in the assay | Conforms |
| PH | 7.0~8.5 | 7.9 |
| Specific Rotation | -190° ~ -215° | -194° |
| Residue on ignition | ≤0.1% | 0.01% |
| Heavy metals | ≤10ppm | Conforms |
| Related substance | 9-amino-minocycine≤0.15% | 0.03% |
| | C-4 epimer≤1.0% | 0.31% |
| | Single individual impurity: ≤0.1% | 0.02% |
| | Total impurities:≤1.5% | 0.45% |
| Residual solvents | Dichloromethane ≤0.06% | ND |
| | Acetone ≤0.5% | 0.39% |
| | Methanol≤0.3% | ND |
| | Isopropanol≤0.5% | ND |
| | N-Methyl pyrrolidone≤0.053% | ND |
| | Toluene≤0.089% | ND |
| Bacterial endotoxins | <1.75EU/mg | Conforms |
| Microbial Limit | Total aerobic microbial count:≤100CFU/G | Conforms |
| Assay (HPLC) | 98.0%~102.0% calculated on anhydrous basis | 98.7% |
| Conclusion: The results conform with the in-house standard TAMP | | |

Analyst: Joe Yu Checker: Agnes Zhong QA.Manager: Sun Wenhu

E-mail: agnes@dawnraypharma.com Website: http://www.dawnraypharma.com/