



Certificate of analysis

Productname: Estradiol valerate

Cas number: 979-32-8

Molecular Formula: $C_{23}H_{32}O_3$

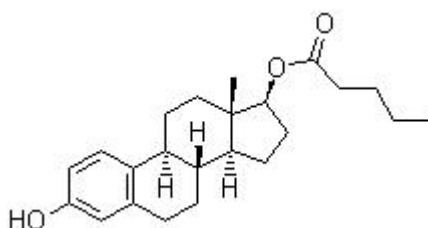
Molecular Weight: 356.50

Date of production: Oct. 12, 2020

Batch No: 20201012

Exp Date: Oct. 11, 2022

Chemical structure:



| Items | Specifications | Test results |
|---------------------------|----------------------------------|--------------------------|
| Appearance | White crystalline powder | White crystalline powder |
| Identification | IR | Conforms |
| Specific optical rotation | +41.0° ~ +47.0° | +44.3° |
| Melting range | 143~150°C | 148.5°C |
| Water | ≤ 0.1% | 0.06% |
| Limit of estradiol | ≤ 0.1% | 0.41% |
| Ordinary impurities | ≤ 2% | 1.02% |
| Free acid | ≤ 0.5% | 0.32% |
| Residual Solvents | Acetal ≤ 5000 | Conforms |
| | Methanol ≤ 3000 | |
| | Acetic acid ≤ 5000 | |
| Assay | 98.0~102.0% (on the dried basis) | 99.15% |

Conclusion: It complies with the USP33 Standard.

Analyst: Zhao

Checker: Liu

Q.C Director. Fang F