



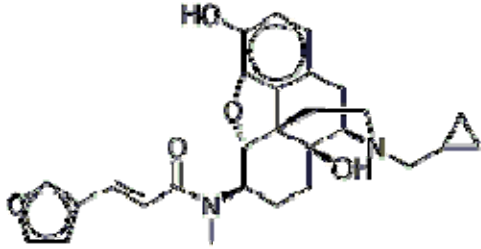
HANGZHOU DINGYAN CHEM CO.,LTD

TEL: 86-571-87157530,86465881,88025800, FAX:86-571-87156470

E-Mail:sales@dingyanchem.com,Web: www.dingyanchem.com

CERTIFICATE OF ANALYSIS

NO: **DYC101704211**

Product Name	Nalfurafine
CAS Number	152658-17-8
Molecular Structure	 <p>HCl</p>
Molecular Formula	C ₂₈ H ₃₃ CIN ₂ O ₅
Batch Number	20161212
Mfg.&Exp Date	2016-12-12,2019-12-31
Test Date	2016-12-12

Items	Standard	Result
Appearance	White or light yellow powder	Off-white powder
Solubility	Should be soluble in water and methanol, slightly soluble in ethanol, almost insoluble in ethyl acetate ether	complies
Identification	<ol style="list-style-type: none">In the chromatogram recorded under the content determination, the retention time of the main peak of the test solution should be consistent with the retention time of the main peak of the reference solutionShould be at 207nm and 280nm wavelength at the maximum absorptionThe infrared absorption spectrum of this product should be consistent with the map of the reference substanceShould show the identification of chloride reaction	complies
PH	4.5-6.5	5.5
Sulfate	≤0.1%	<0.1%
Water	≤6.0%	4.2%
Heavy metal	≤20.0%	<20.0%
Related substance	Simple impurity ≤0.3% Total impurities ≤ 1.0%	0.08% 0.33%

Add: Xiasha 571,19TH Street E-COMMERCE 4A601-602,Jiangan Area, Hangzhou, China

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remaining solvent	Ethyl acetate $\leq 0.5\%$ Toluene $\leq 0.089\%$	0.08% ND
Residue on ignition	$\leq 0.1\%$	0.06%
Assay, Anhydrous calculation	Has $C_{28}H_{32}N_2O_5 \cdot HCL$, 98.0%-102.0%	100.0%
Conclusion	Qualified	

QUALITY CONTROL:
Hangzhou Dingyan Chem Co., Ltd.
Quality Control Melinda
Signature(s)

CHECK: 姚仙娟

INSPECTOR: 刘清风