chromatograms of the reference solution and the test solution to ascertain that the test solution contains the compound of formula (I) of claim 1; and determining the content of the compound of claim 1 in rotigotine or the preparation thereof in weight percentage by an external standard method.

Yet another embodiment of the present disclosure provides a high-purity rotigotine, comprising rotigotine and a compound of formula (I) in an amount less than 0.5 weight percent.

EXAMPLES

The present disclosure will be further illustrated by the following examples and test examples~~, which will not limit the scope of the present invention in any way~~.

Example 1

Preparation of 5,6,7,8-Tetrahydro-6-[N,N-bis[(2-thienyl)ethyl]]amino-1-naphthol

5.0 g of 5,6,7,8-tetrahydro-6-amino-1-naphthol, 3.0 g of 2-(2-thienyl)ethyl4-methylbenzene-sulfonate, 4.8 g of sodium carbonate and 100 ml of xylene were mixed to form a mixture, and the mixture was refluxed for 48 h. The mixture was cooled to room temperature, and washed with an appropriate amount of water. Active carbon was added to decolorize the mixture. The mixture was filtered and left standing. An organic phase was reserved and concentrated under vacuum to obtain a residue. The residue was purified by column chromatography to obtain 1.7 g of 5,6,7,8-tetra-hydro-6-[N,N-bis[(2-thienyl)ethyl]] amino-1-naphthol. Attributions of nuclear magnetic resonance (NMR) spectra of 5,6,7,8-tetrahydro-6-[N,N-bis[(2-thienyl)ethyl]]amino-1-naphthol were shown in Table 1. A high resolution mass spectrum of 5,6,7,8-tetrahydro-6-[N,N-bis[(2-thienyl)ethyl]]- amino-1-naphthol was shown in Fig. 1.

Table 1 Attributions of NMR Spectra of 5,6,7,8-Tetrahydro-6-[N,N-bis[(2-thienyl)ethyl]]amino-1-naphthol

No.	^{1}H-NMR	^{13}C-NMR	No.	^{1}H-NMR	^{13}C-NMR
1	----------	153.4	2'	2.55	25.3
2	6.65	111.7	3'	----------	142.6
3	6.95	126.1	4'	6.80	124.4
4	6.52	121.4	5'	6.92	126.8
5	3.04, 2.79	32.5	6'	7.11	123,3

preparing a test solution containing rotigotine or a preparation thereof;

obtaining HPLC chromatograms of the reference solution and the test solution by high pressure liquid chromatography analysis respectively;

comparing respective retention times in the HPLC chromatograms of the reference solution and the test solution to ascertain that the test solution contains the compound of formula (I) of claim 1; and

determining the content of the compound of claim 1 in rotigotine or the preparation thereof in weight percentage by anexternal standard method.

~~8. A high-purity rotigotine, comprising rotigotine and a compound of claim 1 in an amount less than 0.5 weight percent.~~