TITLE OF INVENTION: CHARACTERISTIC SPECTRUM CONSTRUCTION METHOD FOR WOODWARDIA UNIGEMMATA, CARBONIZED WOODWARDIA UNIGEMMATA DECOCTION PIECES, STANDARD DECOCTION AND FORMULA GRANULES

CROSS REFERENCE TO RELATED APPLICATIONS

[0001] This application claims the priority of Chinese Patent Application No. 202311154624.4, filed with the China National Intellectual Property Administration on September 7, 2023, and titled with “STANDARD DECOCTION CHARACTERISTIC SPECTRUM METHOD AND IDENTIFICATION FOR WOODWARDIA UNIGEMMATA AND CARBONIZED WOODWARDIA UNIGEMMATA DECOCTION PIECES, STANDARD DECOCTIONS, AND FORMULA GRANULES”, which is hereby incorporated by reference in its entirety.

FIELD

[0002] The present disclosure relates to the field of analytical detection, especially relates to a standard decoction characteristic spectrum method and identification for *Woodwardia unigemmata* and carbonized *Woodwardia unigemmata* decoction pieces, standard decoctions, and formula granules.

BACKGROUND

[0003] Guan Zhong refers to the dried rhizome of *Woodwardia unigemmata* (Makino) Nakai, a plant of the family Blechnaceae, and is commonly known as “Gouji Guan Zhong.” It is harvested in spring and autumn, with the petioles removed, fibrous roots and soil removed, washed clean, and sun-dried; alternatively, the fresh material may be sliced and then sun-dried. Guan Zhong has the effects of clearing heat and detoxifying, stopping bleeding, and promoting sore healing and tissue regeneration. *Woodwardia unigemmata* standard decoction is a freeze-dried powder prepared from the medicinal material after processing according to a fixed preparation process. *Woodwardia unigemmata* formula granules are prepared by the *Woodwardia unigemmata* medicinal material processed according to the main quality indicators of the standard decoction.

	Peak 1	Peak 2	Peak 3 (S)	Peak 4	Peak 5	Peak 6	Peak 7	Peak 8	Peak 9	Peak 10	Peak 11	Peak 12	Peak 13
0	53.000	71.509	81.807	28.944	3.911	32.230	6.268	26.703	15.367	24.752	15.662	9.241	4.751
3	53.322	72.234	83.928	28.837	3.834	32.906	6.369	27.081	15.647	25.217	16.491	9.434	5.347
6	53.085	71.789	83.315	28.634	3.873	32.551	6.329	26.848	15.423	24.963	16.242	9.321	5.326
9	53.268	72.013	83.607	28.639	3.861	32.613	6.326	26.897	15.460	24.919	16.320	9.285	5.395
12	52.908	71.598	83.131	28.500	3.828	32.223	6.301	26.607	15.300	24.629	16.083	9.196	5.284
18	53.445	72.398	83.875	28.882	3.910	32.593	6.339	26.932	15.367	24.889	16.159	9.322	5.651
24	53.426	72.342	83.276	28.902	3.879	32.683	6.396	26.924	15.345	24.950	15.732	9.381	6.056
RSD(%)	0.40	0.50	0.86	0.59	0.86	0.76	0.67	0.59	0.75	0.74	1.89	0.87	7.32

[00303] The results showed that the RSDs of the retention times of the corresponding characteristic peaks ranged from 0.02% to 0.24%, and the RSDs of the peak areas ranged from 0.40% to 7.32%. The sample solution was demonstrated to be relatively stable within 24 hours.

[00304] In summary, the RSDs of the relative retention times of the characteristic peaks in the above investigations all met the requirements, indicating that the method was good. The above 13 characteristic peaks were included in subsequent investigations.

[00305] Example 13 : Determination of characteristic peaks and establishment of reference spectrum

[00306] 13.1 Verification of the characteristic spectrum of 3 batches of *Woodwardia unigemmata* formula granules

[00307] Using the present method, characteristic spectrum determination was performed on 3 batches sample. The relative retention times and relative peak area were calculated. The results are shown in FIG. 31, Table 22-1 and Table 22-2. FIG. 31 shows the characteristic spectrum of *Woodwardia unigemmata* formula granules of 3 batches.

[00308] Table 22-1 3 batches carbonized *Woodwardia unigemmata* formula granules - relative retention time

No.	Batch No.	Characteristic peaks											
		Peak 1	Peak 2	Peak 3(S)	Peak 4	Peak 5	Peak 6	Peak 7	Peak 8	Peak 9	Peak 10	Peak 11	Peak 12	Peak 13