

Discrimination of geographical origin of cultivated *Polygala tenuifolia* based on multi-element fingerprinting by inductively coupled plasma mass spectrometry

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Table S1. Samples source of cultivated *P. tenuifolia* in this work

Code	Locations	Coordinates	province	Code	Locations	Coordinates	province
SHX1	Suide	E110° 14' N37° 29'	Shaanxi	SX13	Aodi	E111° 08' N35° 26'	Shanxi
SHX2	Pucheng	E109° 35' N34° 58'		SX14	Fenyang	E111° 49' N37° 12'	
SHX3	Chengcheng	E109° 56' N35° 18'		SX15	beizhang	E111° 06' N35° 42'	
SHX4	Zizhou	E110° 03' N37° 27'		SX16	wanan	E111° 07' N35° 32'	
HB1	Anguo	E115° 18' N38° 25'	Hebei	SX17	peishe	E111° 19' N35° 17'	Shanxi
HB2	Neiqiu	E114° 03' N37° 18'		SX18	Pinglu	E111° 11' N34° 58'	
HB3	Xinglong	E117° 31' N40° 26'		SX19	Daning	E110° 42' N36° 30'	
HN1	Xingyang	E113° 25' N34° 57'	Henan	SX20	Wenxi	E111° 05' N35° 24'	
HN2	Mengjin	E112° 25' N34° 50'		SX21	Hongdong	E111° 38' N36° 29'	Shanxi
SX1	Pingyao	E112° 15' N37° 10'	Shanxi	SX22	liyuan	E111° 19' N35° 30'	
SX2	Linyi	E111° 29' N35° 06'		SX23	dongzhen	E111° 18' N35° 25'	
SX3	Jishan	E111° 00' N35° 28'		SX24	Lanxian	E110° 35' N38° 20'	
SX4	Heping	E111° 38' N36° 28'		SX25	nianzhang	E111° 17' N35° 15'	
SX5	Xinjiang	E111° 07' N35° 31'		SX26	Yonghe	E110° 38' N36° 37'	
SX6	Dongjiazhuang	E111° 45' N32° 16'		SX27	Taiyin	E111° 35' N35° 29'	
SX7	Shilou	E110° 47' N37° 07'		SX28	Jiangxian	E111° 35' N35° 36'	
SX8	tuanbo	E111° 38' N36° 28'		SX29	Houma	E111° 18' N35° 32'	
SX9	Xiaxian	E111° 15' N35° 04'		SX30	hedu	E111° 21' N35° 19'	
SX10	Xiangfen	E111° 23' N35° 52'		SX31	Xingxian	E111° 22' N38° 47'	
SX11	Yicheng	E111° 38' N35° 41'		SX32	Lishi	E111° 03' N37° 32'	
SX12	Hengqiao	E111° 13' N35° 34'		CK	Youyu	E112° 20' N40° 11'	

CK: *ephedra sinica* as control group.

Table S2. Elemental contents (mg/kg) in cultivated *P. tenuifolia* from different regions

	Ca	N	K	P	Mg	S	Fe	Cl	Na	Sr	Mn	Zn	B	Cu	Mo
LOD	0.004	0.01	0.001	0.002	0.004	0.01	0.002	0.01	0.005	0.002	0.002	0.002	0.006	0.001	0.003
SHX1	29567.77	20986.81	5702.76	2644.20	2057.66	1072.63	947.60	228.54	89.49	34.86	25.16	19.12	13.28	4.55	1.93
SHX2	32127.56	21833.30	6305.05	2064.38	1643.22	1150.38	1317.34	214.52	85.77	36.58	29.35	20.65	12.98	4.89	2.03
SHX3	21801.63	24359.70	7237.47	1946.25	1996.90	1070.61	617.27	232.96	97.09	33.67	29.31	19.13	14.50	4.69	1.86
SHX4	25672.32	21181.79	6235.94	4565.63	1873.94	992.43	710.06	187.21	90.02	30.31	20.84	15.68	17.36	4.11	1.68
HB1	27147.18	22192.00	6432.40	1896.88	2002.55	986.35	743.53	207.51	145.42	29.13	25.77	15.37	19.58	4.70	1.61
HB2	17770.21	35666.60	8379.01	2118.13	2223.01	1446.43	899.17	269.69	202.98	30.79	31.39	15.71	21.10	5.54	1.70
HB3	19123.79	21476.16	3381.53	1386.20	1544.26	1429.04	851.75	233.89	39.97	22.45	18.42	13.82	15.00	4.73	1.24
HN1	22470.69	22122.85	6211.42	1782.50	2017.34	1056.32	993.73	226.10	106.20	33.79	24.80	17.41	15.76	4.50	1.87
HN2	20362.39	21962.50	6362.77	1713.13	2278.13	965.11	772.10	239.06	100.10	24.30	23.05	14.50	15.85	4.36	1.35
SX1	24736.66	20867.55	5056.66	1948.13	1831.96	980.52	728.41	212.77	87.66	23.42	19.52	15.17	13.88	4.62	1.30
SX2	26037.71	28066.98	8138.69	2260.05	1682.77	1123.66	590.58	253.28	114.12	33.66	27.73	19.46	16.93	5.19	1.86
SX3	25705.48	29530.22	8669.09	2289.03	2351.62	1203.57	495.46	281.08	118.36	46.41	33.88	21.89	19.56	5.86	2.57
SX4	25848.40	23547.30	7543.55	2152.50	2324.82	1141.05	732.51	276.97	106.78	36.49	29.50	20.18	16.85	6.00	2.02
SX5	24363.56	24130.23	7720.40	1478.75	1645.48	1034.45	539.69	231.83	114.57	34.17	24.83	18.38	17.82	4.64	1.89
SX6	24623.46	20825.05	6217.71	2055.00	2369.99	1051.27	798.46	251.67	78.38	32.96	25.26	18.44	12.63	5.06	1.94
SX7	25213.40	19838.85	6718.52	2235.75	1699.52	954.85	659.65	199.08	76.11	32.78	27.21	17.39	13.29	4.02	1.81
SX8	32200.72	26119.05	7323.75	2608.13	2663.94	1205.59	909.00	234.24	100.71	45.32	28.19	21.82	15.94	4.74	2.51
SX9	22760.48	22230.67	5584.44	2079.75	2167.39	1057.99	794.24	191.84	98.81	27.97	24.86	17.59	14.66	4.12	1.55
SX10	25318.60	24649.64	7377.97	2123.25	2792.54	1133.07	1040.38	246.73	144.79	29.93	27.44	19.11	21.49	5.18	1.66
SX11	24718.15	23071.24	6999.13	2811.25	1690.22	1197.51	926.42	203.98	89.10	30.45	29.49	20.43	13.22	4.46	1.69
SX12	25505.58	21077.67	6219.49	2632.50	2296.50	1073.89	1053.83	197.99	91.96	28.00	25.72	18.01	13.65	4.08	1.55
SX13	26685.94	20668.50	6270.21	2463.13	1887.70	1097.13	1051.60	206.97	88.46	28.61	25.99	17.99	13.13	4.21	1.58
SX14	25896.18	22374.39	5716.25	2089.88	1804.73	909.05	1096.41	179.57	102.48	27.37	23.80	15.66	15.21	3.66	1.52
SX15	24880.38	22665.39	7362.32	2423.25	1708.60	978.18	859.49	194.46	108.00	28.92	24.92	17.81	16.03	3.95	1.60
SX16	22289.54	20652.53	6565.37	2043.75	1543.25	1131.12	922.64	237.21	79.25	28.18	24.17	17.01	14.76	4.32	1.56
SX17	28884.64	27659.58	8191.10	2847.50	1984.18	1097.19	1120.98	240.08	112.70	38.14	29.31	20.89	16.72	5.09	2.11
SX18	24888.04	23148.81	7122.67	2346.88	2461.85	966.44	1078.32	266.13	115.10	29.14	25.04	17.64	16.08	5.34	1.61
SX19	27726.64	21380.02	5822.35	1940.00	1955.66	1010.86	1112.36	228.20	80.91	28.52	23.41	17.78	12.90	4.17	1.58
SX20	26689.86	23358.41	7186.25	1885.00	1774.03	1123.01	916.69	230.62	93.62	35.93	26.77	19.12	13.89	4.91	1.99
SX21	26110.68	20506.82	5346.31	2865.63	1949.38	1039.07	1200.87	211.15	68.28	32.82	22.58	17.73	14.13	4.19	1.82
SX22	28528.98	21572.64	6544.50	1950.83	1832.05	1104.74	1015.76	199.81	86.53	33.45	25.85	18.12	12.84	4.16	1.85
SX23	25870.53	22275.27	6793.77	1897.98	2020.92	996.28	839.53	206.27	101.20	31.22	23.82	17.22	15.02	3.67	1.73
SX24	20680.40	19998.67	5223.67	1912.70	1897.10	939.43	671.98	188.09	79.10	22.84	20.13	14.86	13.74	3.29	1.26
SX25	29097.71	21667.04	6173.14	1925.00	1724.63	1100.34	911.66	194.84	113.41	34.84	25.74	18.95	16.83	3.87	1.93
SX26	2579.70	29580.55	8373.86	2025.00	1471.93	1031.83	998.69	226.65	116.31	32.23	26.69	17.99	17.90	4.72	1.78
SX27	29381.06	20405.26	6121.35	1963.65	1982.99	1092.54	888.20	239.02	72.03	30.26	25.71	18.74	11.79	4.36	1.68
SX28	25317.72	19804.07	6299.41	2456.13	2354.44	943.77	825.07	207.89	101.67	24.31	27.91	14.76	15.99	4.21	1.35
SX29	26906.65	23033.17	6897.58	1979.10	1616.74	1116.00	923.68	243.90	96.33	33.85	27.99	20.29	17.29	4.81	1.87
SX30	27364.07	20762.27	6928.66	2233.88	1745.34	975.85	1153.56	232.20	85.45	27.98	33.29	16.68	18.68	4.59	1.55
SX31	22187.25	21201.78	5480.93	1862.43	1771.94	880.07	1148.75	204.65	117.80	23.09	29.18	13.77	17.70	4.26	1.28
SX32	23454.47	26505.37	6297.05	2378.44	1635.11	919.34	856.48	258.15	97.80	25.33	24.84	15.96	15.51	5.25	1.40
RSD(%)	12.32	13.44	15.70	23.02	16.59	11.47	21.22	11.56	25.46	17.10	12.77	11.86	14.87	12.74	17.16
CK	12674.39	1798.69	1294.9	916.43	2369.99	1370.41	100.57	73.84	85.02	10.79	11.01	3.83	4.84	1.12	0.62

CK: *ephedra sinica* as control group.

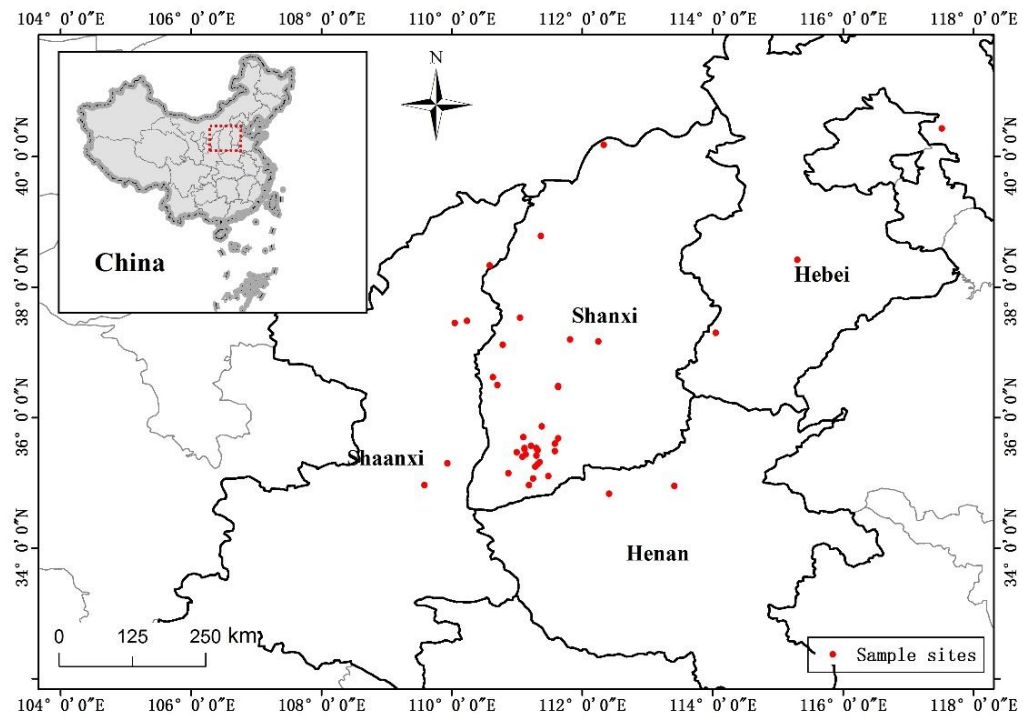


Fig. S1. Geographical origin locations of the 41 cultivated *P. tenuifolia* samples involved in four provinces for this study. Maps generated using ArcGIS 10.3.

(ArcMap URL: <http://www.esri.com/en/arcgis/products/arcgis-pro/resources/arcmap-resources>)

