

**S1 Table. Strains isolated from the soil of the Qinghai-Tibet plateau and Gansu Corridor.**

NO.	Location of soil sample collection			Fungal strain	
	Name	Latitude and longitude	Vegetation	Name	Species
1	Lhasa (Lhasa, Tibet)	E91.226, N29.665	Grass	MaTS01	<i>M. anisopliae</i> var. <i>anisopliae</i>
				IfTS08	<i>I. fumosorosea</i>
				BbTS02	<i>B. bassiana</i>
2	QS (Qushui, Tibet)	E90.665, N29.322	Grass	PITS02	<i>P. lilacinus</i>
3	JZ (Jiangzhi, Ggangze, Tibet)	E90.171, N28.900	Grass	MaTS02	<i>M. anisopliae</i> var. <i>anisopliae</i>
				BbTS01	<i>B. bassiana</i>
4	LL (LuLang, Nyingchi, Tibet)	E94.814, N29.948	Forest	MaTS03	<i>M. anisopliae</i> var. <i>anisopliae</i>
5	BSC (Basongcuo, Nyingchi, Tibet)	E93.955, N30.001	Forest	MaTS04	<i>M. anisopliae</i> var. <i>anisopliae</i>
6	YZYC (Yangzhuoyongcuo, Langkazi, Tibet)	E90.411, N29.978	Grass	MaTS05	<i>M. anisopliae</i> var. <i>anisopliae</i>
7	Xigaze (Xigaze, Tibet)	E88.928, N29.320	Thin grass	—	—
8	RB (Renbu, Tibet)	E89.983, N29.344	Thin grass	—	—
9	Dazi (Dazi, Tibet)	E91.307, N29.669	Thin grass	—	—
10	Mila (Mila Mountain, Mozhugongka, Tibet)	E92.356, N29.832	Thin grass	—	—
11	GBJD (Gongbujiangda, Tibet)	E93.161, N29.941	Thin grass	—	—
12	NYH (Niyang river, Nyingchi, Tibet)	E94.011, N29.759	Grass	—	—
13	BGC (Brahmaputra grand canyon, Nyingchi, Tibet)	E94.892, N29.522	Thin grass	—	—
14	HY (Huangyuan, Qinghai)	E101.201, N36.568	Grass	IfTS02	<i>I. fumosorosea</i>
15	Datong (Datong, Qinghai)	E101.671, N36.813	Grass	IfTS05	<i>I. fumosorosea</i>
16	CHH (Datong, Qinghai)	E101.554, N37.253	Forest	IfTS04	<i>I. fumosorosea</i>
17	MY (Menyuan, Qinghai)	E101.464, N37.391	Grass	IfTS01	<i>I. fumosorosea</i>
18	JYL (Menyuan, Qinghai)	E101.420, N37.410	Grass	IfTS03	<i>I. fumosorosea</i>
19	Lanzhou (Yongdeng, Gansu)	E103.621, N36.470	Bush	AuTS01	<i>A. ustus</i>
				AuTS02	<i>A. ustus</i>
				PITS01	<i>P. lilacinus</i>
				LpTS01	<i>L. psalliotae</i>
20	Jintai (Jintai, Gansu)	E98.823, N40.051	Forest	BbTS03	<i>B. bassiana</i>

21	Qilian (Qilian, Qinghai)	E100.939, N37.984	Grass	—	—
22	Gonghe (Gonghe, Qinghai)	E100.678, N36.553	Grass	—	—
23	Tianzhu (Tianzhu, Gansu)	E103.171, N36.961	Thin grass	—	—
24	Wuwei (Wuwei, Gansu)	E102.661, N37.930	Thin grass	—	—
25	YCH (Yongchang, Gansu)	E101.910, N38.281	Thin grass	—	—
26	Zhangye (Zhangye, Gansu)	E100.092, N39.012	Thin grass	—	—
27	Jiayuguan (Jiayuguan, Gansu)	E98.411, N39.923	Thin grass	—	—
28	Yumen (Yumen, Gansu)	E97.415, N40.030	Grass	—	—
29	Guazhou (Guazhou, Gansu)	E95.912, N40.560	Grass	—	—
30	Dunhuang (Dunhuang, Gansu)	E94.701, N40.090	Thin grass	—	—
31	YMG (Yumenguan, Dunhuang, Gansu)	E93.875, N40.357	Thin grass	—	—
32	Yadan (Dunhuang, Gansu)	E93.195, N40.442	Thin grass	—	—