



Supplementary

Crossiella, a Rare Actinomycetota Genus, Abundant in the Environment

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Table S1. Occurrence of the genus *Crossiella* in different environments.

Soils	Locations	References
Soil	Barton Road Ecological Research Area, Pocatello, USA	[58]
Soil	Ekiti State, Southwestern, Nigeria	[6]
Soil	Mayotte Island, Comoros, Africa	[59]
Soil	Antarctica	[60]
Soil	Wangcheng, Changsha, China	[61]
Soil	Hexi Corridor, Black Gobi region, China	[62]
Soil	Botucatu, Sao Paulo State, Brazil	[63]
Soil	Tibetan Plateau, China	[64]
Soil	Mu Us Sandy Land, China	[65]
Soil	Qinghai-Tibet Plateau, China	[66]
Soil	Atacama Desert, Chile	[67]
Soil	Wenchuan, Sichuan, China	[68]
Soil	Herring Island, East Antarctica	[69]
Soil	Florida, USA	[70]
Soil	Not reported	[71]
Soil	Not reported	[72]
Soil	Yujiagong Village, Shaanxi, China	[73]
Soil	Different German regions	[74]
Soil	Weizhou and Xieyang Islands, China	[75]
Soil	Meizhou City, Guangdong, China	[76]
Permafrost	Edmonson Point, Antarctica	[77]
Permafrost	Muot da Barba Peider, Switzerland	[78]
Metal contaminated soils	Greater Sudbury Region, Canada	[79]
Contaminated soil	Farmland, Hunan, China	[80]
Fertilized soils	Jilin Province, China	[81]
Forest soil	Songshan Reserve, Beijing, China	[82]
Forest of <i>Pinus</i> spp. and <i>Populus canadensis</i>	Fujia forest farm, Changtu County, Liaoning Province, China	[83]
Soils restored with <i>Pinus</i> spp., <i>Populus canadensis</i>	Fujia forest farm, Changtu County, Liaoning Province, China	[84]

Root-associated soils	Grasslands, Tibetan Plateau, China	[85]
Grassland	Tibetan Plateau, China	[86]
Mountain soil	Taylor Valley, Antarctica	[87]
Degraded limestone soils	Almería, Spain	[88]
Sahara dust	Mont Blanc glacier, France	[89]
Karst rocky desert areas	Mengzi, China	[90]
Salar de Tara	Atacama Desert, Chile	[91]
Volcanic soils	Fogo Island, Cape Verde Archipelago	[92]
Forest soils	Baotou City, Inner Mongolia	[93]
Plastisphere and soil	Panggezhuang, Beijing, China	[94]
Plastics in soils	Nanquan Town, Shandong Province, China	[95]
<i>Eucalyptus</i> plantation soils	Zengcheng District, Guangzhou, China	[96]
Plant Rhizosphere		
<i>Fragaria x ananassa</i>	ILVO in Merelbeke, Belgium	[97]
<i>Agave lechuguilla</i>	Valle de Cuatro Ciénegas, Coahuila, México	[98]
<i>Zea mays</i>	Turin district, Italy	[99]
<i>Saccharum officinarum</i>	Dongsancun, Guandu Town, Shaoguan City, Guangdong, China	[100]
<i>Miscanthus</i> spp.	Nanyang city, Henan province, China	[101]
<i>Agave lechuguilla</i>	Valle de Cuatro Ciénegas, Coahuila, México	[102]
<i>Bidens pilosa</i>	Greenhouse, Minas Gerais, Brasil	[103]
<i>Anthyllis cytisoides</i> , <i>Macrochloa tenacissima</i>	Semiarid grassland, Almeria, Spain	[104]
<i>Zea mays</i>	Hinterland of the Three Gorges Reservoir Area, China	[105]
<i>Glycine max</i>	Mpumalanga Highveld region, South Africa	[106]
<i>Panax quinquefolius</i>	Farmlands, Houjia Town, Wendeng District, China	[107]
<i>Cynodon dactylon</i> , <i>Xanthium sibiricum</i> , <i>Echinochloa crusgalli</i> , <i>Cyperus rotundus</i>	Baijiayi riparian zone, China	[108]
<i>Dendrobium</i> spp.	Anhui Tongjisheng Biotechnology Company, Lu'an, China	[109]
<i>Mesembryanthemum</i> spp.	Institute of Modern Agriculture, Dongying, China	[110]
<i>Panax ginseng</i>	Jilin Province, China	[111]
<i>Pennisetum ciliare</i>	Rancho Diamante, Sonora, Mexico	[112]
<i>Arabidopsis halleri</i>	Southern Poland	[113]
<i>Boehmeria nivea</i>	Xikuangshan Sb mine, Hunan, China	[114]
<i>Spartocytisus supranubius</i>	Teide National Park, Tenerife, Spain	[115]
<i>Myrica rubra</i>	Majian Town, Lanxi City, China	[116]
Different shrub species	Boyd Deep Canyon Desert Research Center, CA, USA	[117]
<i>Carica papaya</i>	Fujian Agriculture and Forestry University, China	[118]
<i>Piper nigrum</i>	Dak Lak and Dak Nong provinces, Vietnam	[119]
Mines		
Restored soils in an open-cut magnesite mine	Haicheng city, Liaoning Province, China	[120]
Post-coal-mining reclamation soil	Emalahleni Highveld, Mpumalanga province, South Africa	[121]
Gold mine	Lead, South Dakota, USA	[122]
Marsberg Copper Mine	Marsberg, Germany	[123]
Mining wastes	Hnúšť'a, Slovakia	[7]
Contaminated soil	Mining area, Zhejiang Province, China	[124]
Stone/Buildings		
Tomba del Colle	Chiusi, Italy	[125]
Wall paintings	Kalliroi's Fountain, Greece	[126]
Ancient painted sculptures	Majjishan Grottoes, China	[127]
Klippe Buddhist statues	Hangzhou, China	[128]
Stone monuments	Hangzhou, China	[129]
Sandstones	Angkor Thom and Beng Mealea, Cambodia	[130]
Sandstone/mortar	Wawel Royal Castle, Krakow, Poland	[131]

Maya stone/plaster	Archeological Maya site of Copan, Honduras	[132]
Calcareous stones	Roman ruins (Algeria and Tunisia)	[133]
Lede stone	Castle of Berlare, Belgium	[134]
Jinsha earthen relic	Archeological Jinsha Site, Chengdu Plain, China	[135]
Limestone	Old cathedral of Coimbra, Portugal	[136]
Thyssen Museum	Malaga, Spain	[32]
Limestones	Anavarza archeological site, Adana, Turkey	[137]
Mural painting	Sean Khan temple, Thailand	[138]
Others Sites		
Sea sediments	Southwest Indian Ridge	[139]
Book front cover	Book collections from Poland and Czech Republic	[140]
Sea sediments	Oman Sea, Hormozgan province, Iran	[141]
Drinking water	Flanders, Belgium	[142]
Water and biofilms	Can Verdaguer, Spain	[143]
Bryophyte crusts	Karst rocky desert areas, Guizhou Province, China	[144]
Synthesis of polyenes	<i>Crossiella cryophila</i>	[145]
<i>Ruditapes philippinarum</i> clam	Dandong City, Liaoning Province, China	[146]
