Bacteria Species	NCBI Sequence ID
Achromobacter deleyi	HG324053.1
Achromobacter kerstersii	HG324052.1
Achromobacter pestifer	HG324051.1
Achromobacter spiritinus	HE613447.1
Acidithiobacillus ferrooxidans	AM890075.2
	AH001793.2
Acinetobacter baumannii	AB594765.1
Acinetobacter calcoaceticus	AB626122.1
Acinetobacter lwoffii	AB626125.1
Acinetobacter sp.	Z93454.1
	FM177774.1
Agrobacterium radiobacter	AJ389904.1
	AJ130719.1
	AM181758.1
Aminobacter aminovorans	LT984904.1
	LN995690.1
Aminobacter anthyllidis	FR869633.2
Aminobacter sp.	AB905480.1
	FM886907.1
Arthrobacter oxydans	LN880075.1
	LN774480.1
Arthrobacter sp.	KM362724.1
Azospirillum brasilense	AB681745.1
	DQ438999.1
Azospirillum lipoferum	LN874293.1
Azospirillum oryzae	AB185396.1
Azospirillum zeae	HE977584.1
Azotobacter chroococcum	AB430880.1
	LN874290.1
Azotobacter vinelandii	LK391702.1
	LN874283.1
	LN874283.1
Bacillus caldolyticus	EF472596.1
Bacillus caldotenax	EU484354.1
	AY952967.1
Bacillus cereus	NR_074540.1
Bacillus clarkii	X76444.1
Bacillus mucilaginosus	AY571332.1
	DQ898310.1
	DQ898308.1
	DQ898307.1
	DQ898309.1
Bacillus mycoides	AB547222.1
Bacillus oceani	KC160501.1
Bacillus selenitireducens	AF064704.1
	NR_028707.1
Bacillus sp.	AM179887.1
	DQ643085.1
Bacillus subtilis	AJ277905.1
	AJ277906.1
	M87888.1
	AB018487.1
	AH013002.3
Bacillus thermocloacae	Z26939.1
	NR_036986.1
Bacillus thuringiensis	AM779002.1
	FJ358616.1
Bacillus vedderi	Z48306.1
	NR_026526.1
Burkholderia fungorum	AB091193.1
	EF650018.1
	KJ026454.1
	JF708122.1
	KM263605.1
	KU321260.1

Bacteria Species	NCBI Sequence ID
Gordonia amarae	AF020329.1
	AF020330.1
	AF020331.1
	AF020332.1
	NR_037032.1
Halomonas denitrificans	AM229317.1
Halomonas elongata	AM941743.1
Halomonas janggokensis	AM229315.1
Halomonas sp. BH1	FN433898.1
Halomonas sp. SR4	JF794994.1
Janthinobacterium agaricidamnosum	AB681849.1
Janthinobacterium lividum	AB021388.1
Janthinobacterium sp.	AB252072.1
	AJ846273.1
	AM071372.1
Kocuria carniphila	AJ622907.1
Kocuria flava	HQ331530.1
Kocuria polaris	AJ278868.1
Kocuria sp.	LT674162.1
	AB773222.1
Labrys methylaminiphilus	AB236172.1
Labrys miyagiensis	AB236170.1
	AB236171.1
Labrys okinawensis	AB236169.1
Labrys sp.	LC372609.1
Lysinibacillus composti	AB547124.1
Lysinibacillus pakistanensis	AB558495.1
Lysinibacillus parviboronicapiens	AB681953.1
Lysinibacillus sp.	HG931343.1
Lysinibacillus sphaericus	JX485781.1
Mycobacterium colombiense	AM062764.1
Mycobacterium haemophilum	L24800.1
Mycobacterium phlei	JX266706.1
	KF378762.1
	NR_041906.1
	GU142920.1
	GU142927.1
Mycobacterium ratisbonense	AJ271863.1
Mycobacterium sp.	U46146.1
	X84978.1
Paenibacillus polymyxa	HG324075.1
	HG324076.1
	HG324077.1
Pimelobacter simplex	NR_036916.1
	AY509240.1
Pseudomonas alcali	AJ006110.1
Pseudomonas alcalophila	AB030583.1
Pseudomonas caspiana	NR_152639.1
Pseudomonas fluorescens	AJ278814.1
	FJ972536.1
Pseudomonas mendocina	M59154.1
Pseudomonas putida	L28676.1
Pseudomonas sp.	AJ391194.1
	AM179883.1
	AF065166.1
	AJ417069.1
Pseudomonas stutzeri	AJ006107.2
Rahnella aquatilis	AB675632.1
	AB725657.1
	LK391526.1
	LT608120.1
Rhizobium leguminosarum	D14513.1
Rhizobium sp.	LN832063.1
	AB755791.1
Rhizobium tropici	D11344.1

Bacteria Species	NCBI Sequence ID
Burkholderia gladioli	AH004175.2
Burkholderia glathei	AB021374.1
Burkholderia mallei	AH004174.2
Burkholderia solanacearum	U28233.1
	U28230.1
	U28229.1
	U28231.1
	U28232.1
Burkholderia uboniae	AB030584.1
Citrobacter braakii	HG798904.1
Citrobacter freundii	AB626119.1
Citrobacter koseri	HG798905.1
Citrobacter rodentium	AB682287.1
Citrobacter sp.	KY774317.1
Collimonas fungivorans	AB740921.1
	AJ310394.2
Collimonas pratensis	AY281143.1
Collimonas sp.	LT719158.1
	FR729923.1
Dyella ginsengisoli	AB245367.1
Dyella japonica	AB681770.1
Dyella koreensis	AB681264.1
Dyella sp.	FR822525.1
	MG460580.1
Enterobacter cloacae	AJ251469.1
	AB680426.1
Enterobacter hormaechei	AB682284.1
Enterobacter kobei	AB616140.1
Enterobacter sp.	U39556.1
Escherichia coli	J01859.1
	HM194886.1
	KF535120.1
	AF527827.1
	NR_024570.1
	Z83204.1
	Z83205.1
	KJ937037.1
Frateuria aurantia	AJ010481.1
	AB091200.1
Frateuria sp.	AB264175.1
Frateuria terrea	AB682159.1
	EU682683.1
Geobacter metallireducens	L07834.1
	NR_075011.1
	NR_025895.1

Bacteria Species	NCBI Sequence ID
Rhizobium tropici	X67234.2
Serratia marcescens	AJ550467.1
	HG423362.1
Serratia rubidaea	AB681976.1
Serratia sp.	AJ846269.1
	FM178865.2
Shewanella abyssi	AB201475.1
Shewanella morhuae	AB205576.1
Shewanella oneidensis	AB968243.1
	NR_074798.1
	MG563755.1
	MG563756.1
	KC594645.1
Shewanella putrefaciens	AJ000213.1
Shewanella surugensis	AB094597.1
Sphingomonas anadarae	AB261013.1
Sphingomonas ginsengisoli	AB245347.1
Sphingomonas paucimobilis	D13725.1
Sphingomonas sanguinis	D13726.1
Sphingomonas sp.	AF385529.1
Sporosarcina globispora	AB681045.1
Sporosarcina koreensis	AB682452.1
Sporosarcina pasteurii	KR185867.1
	KC211297.1
Sporosarcina psychrophila	AB680853.1
Sporosarcina saromensis	AB243859.1
Staphylococcus aureus	D83356.1
Staphylococcus epidermidis	D83363.1
Staphylococcus lugdunensis	NR_024668.1
Staphylococcus lutrae	AB233333.1
Staphylococcus sp.	FR687206.1
Streptomyces lividans	AB184826.1
	AB184695.1
Streptomyces pilosus	AB184161.1
	MH244332.1
Streptomyces sp.	AJ002086.1
	AJ002088.1
	AJ002087.1
	AJ002089.1
	KX427167.1
Thiobacillus ferrooxidans	AH001791.2
	AH001792.2
	AH001796.2
	AH001795.2
	AH001788.2

Supplementary Table I. References of weathering bacteria and their corresponding sequences for Blosting

Bacteria Species	**NCBI Sequence ID**
Bacillus cereus	NR 074540.1
Bacillus megaterium	JX893034.1
	KC121060.1
Bacillus mycoides	AB547222.1
Bacillus sp.	DQ643085.1
	AM179887.1
Bacillus subtilis	AB018487.1
Bacillus thuringiensis	AM779002.1
Halomonas denitrificans	AM229317.1
Halomonas elongata	AM941743.1
Halomonas janggokensis	AM229315.1
Halomonas sp.	FN433898.1
	JF794994.1
Kocuria carniphila	AJ622907.1
Kocuria flava	HQ331530.1
Kocuria polaris	AJ278868.1
Kocuria sp.	AB773222.1
	LT674162.1
Lysinibacillus composti	AB547124.1
Lysinibacillus pakistanensis	AB558495.1
Lysinibacillus parviboronicapiens	AB681953.1
Lysinibacillus sp.	HG931343.1
Lysinibacillus sphaericus	JX485781.1
Sporosarcina globispora	AB681045.1
Sporosarcina koreensis	AB682452.1
Sporosarcina pasteurii	KC211297.1
	KR185867.1
Sporosarcina psychrophila	AB680853.1
Sporosarcina saromensis	AB243859.1

Supplementary Table 2. Reference DNA sequences for urease-producing bacteria