Table S1: Plasmids

Plasmid	Genotype	
pAC225	*cat amp*	(Gift of Amy Camp, Mount Holyoke College)
pDG1515	*tet amp*	(36)
pDG780	*kan amp*	(36)
pDP155	*amyE::*P_{haq}*-GFP cat amp*	
pDP242	Δ*swrB mls amp*	
pDP266	*6His-SUMO-FlgM amp*	
pDP305	Δ*flgB mls amp*	
pDP306	Δ*flgE mls amp*	
pDP311	Δ*bpr mls amp*	
pDP312	Δ*vpr mls amp*	
pDP313	Δ*nprE mls amp*	
pDP314	Δ*aprE mls amp*	
pDP315	Δ*epr mls amp*	
pDP317	Δ*wprA mls amp*	
pDP320	Δ*mpr mls amp*	
pDP326	Δ*sigD mls amp*	
pDP327	Δ*ylxF mls amp*	
pDP328	Δ*flgD mls amp*	
pDP329	Δ*ylzI mls amp*	
pDP330	Δ*fliL mls amp*	
pDP332	Δ*fliO mls amp*	
pDP333	Δ*flhF mls amp*	
pDP335	Δ*fliH mls amp*	
pDP336	Δ*fliI mls amp*	
pDP338	Δ*cheA mls amp*	
pDP340	Δ*cheC mls amp*	
pDP341	Δ*cheD mls amp*	
pDP342	Δ*cheW mls amp*	
pDP343	Δ*cheY mls amp*	
pDP344	Δ*cheB mls amp*	
pDP345	Δ*fliQ mls amp*	
pDP346	Δ*fliP mls amp*	
pDP347	Δ*flhB mls amp*	
pDP349	Δ*flgC mls amp*	
pDP350	Δ*fliE mls amp*	
pDP351	Δ*fliR mls amp*	
pDR111	*amyE::Physpank spec amp*	(37)
pKB40	Δ*fliG mls amp*	
pKB93	Δ*fliK mls amp*	
pLC16	Δ*fliF mls amp*	
pLC22	Δ*flhG mls amp*	
pLC25	Δ*fliJ mls amp*	
pLC47	Δ*flhA mls amp*	
pMiniMAD	ori^{BsTs} *amp mls*	(35)
pMP50	Δ*comI mls amp*	
pRC21	*amyE::*$P_{hyspank}$*-flgM spec amp*	
pRC62	Δ*swrB mls amp*	
pSG32	Δ*fliM mls amp*	
pSG6	Δ*fliY mls amp*	
pTB146	*6His-SUMO amp*	(38)

Table S2: Primers

Primer	Sequence
140	AGGAGATGCAGAAATCATAAATGCATT
141	GAACAACCTGCACCATTGCAAGAATTGATTGATTTTCATAGGATTCCTCT
142	TTGATCCTTTTTTTATAACAGGAATTCAATATGATTAATTTTTATAAAAAGCAATAAAA
143	TTCAGAAATATAATTAAACGTTTCAGCT
212	ATGTCCCGGTTGCCAGCATCTTT
213	GAACAACCTGCACCATTGCAAGATCTTCATAATTCAAGGATTGCATTGTT
214	TTGATCCTTTTTTTATAACAGGAATTCAATCTGCTGGAAAAAGTGATACAATAA
215	CGAAGTTTGTTAATGTACCGCCCA
721	TGAATCCCGCACGACCAAAGCA
722	ACATTCGCCCTATAGTGAGTCGTAAAACTGAAAAACAGAGTGACTGATA
723	CCAGCTTTTGTTCCCTTTAGTGAGAAAACAAAGCTGCAAAAACGGCTG
724	ATGCGTCAAAAGCCCTGCAATCA
740	ATACCTACGCCTCGTTTAGAATTC
741	CTCCTGTCGACCCATAATAGTGTTGACATGTTTTTCA
770	AGGAGGGGATCCGGTTAACCGAATTCATAAAGAAATCG
771	CTCCTGTCGACTGTAAGCTTATCTTGATCACGTCTC
772	AGGAGGTCGACGCAAGAGGCGGAGGGGATGATA
773	CTCCTGAATTCAGGAGGAAAGCCTCTTTATCATCAG
826	AGGAGGAATTCAGCCAATTCATTCAAAATATATCGTTCT
827	CTCCTGGATCCGTCATATCTGTTCATCTGCACAGC
828	AGGAG GGATCC TTAATGAGGAGGGCTTAATTTGATTC
829	CTCCTGTCGACCTGGTGCGTTCAAATCCTTAGGG
839	AGGAGGTCGACGAAGAGCTCGTAAACAGTGAGGTC
840	CTCCTGGATCCTCCGCCTTCAGCAGCAAGATTTTTA
857	AGGAGGTCGACCGAGATAAAGGCCAAAATGTCATGT
858	CTCCTGGATCCTTGATAAGCCACGTTTATTCCTCATTT
859	AGGAGGGATCCTTCAAGGCCATTAGGAGCGAATGT
860	CTCCTGAATTCGAAAACTCCTGGCTACTTTTCATGT
933	AGGAGGCTCTTCCGGTATGAAAATCAATCAATTTGGAACACAA
934	CTCCTCTCGAGGTTCAATAATTGCCTTCGCTGACAT
976	AGGAGGAATTCCAAAGGCTTTAAACGAATATACAGTAT
977	CTCCTGCATGCGGATAAATCTCTTGTTGACATGCTG
978	AGGAGGCATGCAGCATTGGAGTGGTGGATATTTAAT
979	CTCCTGGATCCTATCAACAAACACATGATCATACTCA
1135	TCCTCGCATGCCCTTCGCTGACATGGGCTTTCTCC
1387	AGGAGGAATTCCCGGTTCTTAAAGAATTGGTCCCT
1388	CTCCTGTCGACAGGTCCGGCTAATTCAAGCAGCT
1389	AGGAGCTCGAGGTGTCGATGGTTGAAATGGAGGAA
1390	CTCCTGGATCCTGATTCCAGAATAAAGTGAACGTAAC
1479	AGGAGGAATTCCTGTTGAGAACAGAGACCTGTTTCA
1480	CTCCTCTCGAGTTCAAGATTTTGTATCGTTCCAGAAA
1481	AGGAGCTCGAGTTTAATTCGCTGAAGACCGTATTAAC
1482	CTCCTGGATCCCTCACTCGTTTTGTTTTTCATTTGC
1483	AGGAGGAATTCATAGTAAATCAGGACTCCAAATGCT
1484	CTCCTCTCGAGCATACCGCTGATTCCAGAATAAAG
1485	AGGAGCTCGAGGATGAAATCCTTCAAGAACTGGTTA
1486	CTCCTGGATCCACAGAACTGACAGATATGTGAATATA
1569	AGGAGGAATTCCGGGATTGTTACTTTTGCCAACAG
1570	CTCCTGGATCCGAGAACTTCTCCTGACATTTTCCTC
1571	AGGAGGGATCCGGTGAACAAGATGGAGAATAATAGAT
1572	CTCCTGTCGACCTCGATAATACTTCCGGCAGAAAG
1574	GTGCGCTGCGGTTTTCTAAGGAT
1575	CTCCTGGTACCTAATCTATTATTCTCCATCTTGTTCAC
1576	AGGAGGGTACCCGCATTAATAATTTAAAATAACGAAACAC

1577	CTCCTGTCGACTACACCGACGACGAGCACACTTT
1692	AGGAGGAATTCCTGATGATGAAATGCTGGTGAAAG
1693	CTCCTCTCGAGCTTTTTCAACAGTCGTACACCCT
1694	AGGAGCTCGAGTCTGAAGGAAAGAAGAAAGGCCCA
1695	CTCCTGGATCCAATTGAATTCATCTCTACATTACCCT
1739	AGGAGGAATTCGTGGATACACTGATCGTGAT
1740	CTCCTGTCGACTCTGTTTTTCGTTTTTTTCCTCA
1741	AGGAGGTCGACAATGGAAAACTTAATATGAACACAGAAAAT
1742	CTCCTGGATCCGGTTTAACGCATAATAAAAATTGA
1743	CAAAGCGAATTCGTGTTGGA
1744	CTCCTGTCGACGTTTTGACCGAAGAACCTTTC
1745	AGGAGGTCGACAAGCAGAAAGCGAATGATCCC
1746	CTCCTGGATCCTCTCTCCCGCCAATTTGCTT
1747	AGGAGGAATTCACAGAAACACGAATGCAATCG
1748	CTCCTGTCGACAGCAACAGACAATTTCTTACCT
1749	AGGAGGTCGACGTTGAAGCAGCCTGGAATGC
1750	CTCCTGGATCCATGATCAACCTCGAAAACCTG
1751	CCTATGAATTCTCCATTTTCTTCT
1752	CTCCTGTCGACCAAGCTGATCCACAATTTTTTG
1753	AGGAGGTCGACGGAAAAGGGTTAATCAACGTAC
1754	CTCCTGGATCCGTATATGAAGTGAACATGTCAG
1755	AGGAGGAATTCATCTGCACAAATTCAGCGATC
1756	CTCCTCTCGAGTACAACAAGTTTGCAAGACATG
1757	AGGAGCTCGAGAAACGGCTGAACGCCGTCA
1758	CTCCTGGATCCTAGGTATGGGTTGCTGCCAA
1759	AGGAGGAATTCCTTGTGTCGTTAAACCATTGAT
1760	CTCCTCTCGAGTTGTTTTCTGAATCTTGGAACTA
1761	AGGAGCTCGAGTTCAACAATATTCAATATTGGGC
1762	CTCCTGGATCCAGAATCAAAGACATCTTTCATCC
1763	AGGAGGAATTCACATGTGACATCAGCTCCAAT
1764	CTCCTCTCGAGAGCAAGGAAGCAAAAGTTGTTG
1765	AGGAGCTCGAGCACAACCGAGCTGAATTTTCT
1766	CTCCTGGATCCACATTATTGCCACCGGTACG
1898	AGGAGCTCGAGCTGGCCGAGGATTAGGAGGAATTA
1899	CTCCTGGATCCTAAATGCAGAAGATAATTTTTGTTC
1900	AGGAGGAATTCTTCAAAAATTACGGAGGATGATTC
1901	CTCCTCTCGAGTTTCATTTGCATTAGAGTACGATT
2019	AGGAGGAATTCAGCACCCTCTGCATAAATCG
2020	CTCCTCTCGAGCAAGTATTAAATCTTTCTACGTC
2021	AGGAGCTCGAGACGGCGCATTAAGTCGTCAC
2022	CTCCTGGATCCCTGAGGCTGTTGTTATAAAGGTTG
2029	AGGAGGAATTCACAAAAGGCTATACACCTTCAG
2030	CTCCTCTCGAGGAGGATAATGATAAGCAAAACC
2031	AGGAGCTCGAGGACATATTGGCGAAAATGACTC
2032	CTCCTGGATCCTTCCAGAAACATCCGATGCAT
2033	AGGAGGAATTCACTGATCTCGGGAATGGCA
2034	CTCCTCTCGAGGTTCGTTTTTTCAGGCAGTTT
2035	AGGAGCTCGAGACCGAGATCAGTCCTGCGA
2036	CTCCTGGATCCACAGCGGAGAAGCGATTACT
2037	AGGAGGAATTCGTTCACTTTATTCTGGAATCAG
2038	CTCCTCTCGAGCGCATTCAGTGTAAAGGGCT
2039	AGGAGCTCGAGATACAAATATTTGCAATGGATCAA
2040	CTCCTGGATCCTGACTCGATCCATCATCGTAT
2041	AGGAGGAATTCGACAGCTTATACAAGAGCAGG
2042	CTCCTCTCGAGGATAAGAATAATTAGTAATATGATC
2043	AGGAGCTCGAGCTCCAAGAAGGAAAAGTAGAAA

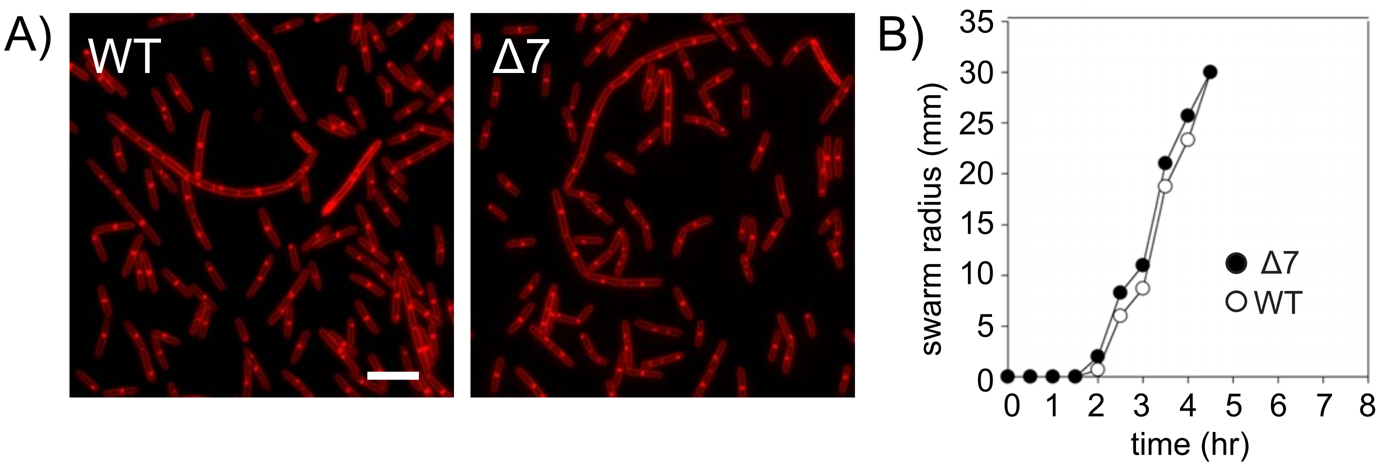
2044	CTCCTGGATCCGGATACAGAGATTAATGACACC
2103	AGGAGGAATTCCAATTCGAAACTTAGTAACGATT
2104	CTCCTCTCGAGTTCATTACCTAACTCTTTTCTGA
2105	AGGAGCTCGAGATGACTAACGGCCAGAATGTG
2106	CTCCTGGATCCTAATCGAACTGGCTTAATGCAT
2122	AAGGAGGAATTCTCCGCAGACGATGGCGTTA
2123	CTCCTCTCGAGACGCACCTCTTGTATAGAAAG
2124	AGGAGCTCGAGGTTGACACACAATTGATGCAAT
2125	CTCCTGGATCCTATCTCGGAAATACTCGGCAA
2126	AGGAGGAATTCATTGAAGAAGCAAAAGCCGAG
2127	CTCCTCTCGAGCATCAAGCCGATTACCCGC
2128	AGGAGCTCGAGACAGACGAACCGGCTTTATTG
2129	CTCCTGGATCCTGCGATTAATAGAAACATCAGC
2177	AGGAGGAATTCATTAAAACCGGATGTTATTACTC
2178	CTCCTCTCGAGTGTTTGTAAATGTTCTTTACTCTC
2179	AGGAGCTCGAGACAAACGTCTTTGCAATTTCCG
2180	CTCCTGGATCCTAGAGCTGGAGTTTCGTCAAA
2185	AGGAGGAATTCAGAGTTTAAAATAGAAGATACAAG
2186	CTCCTCTCGAGATTGCCGACTTCCCGCAAAA
2187	AGGAGCTCGAGCTGAAAGCGCATATGTTTATG
2188	CTCCTGGATCCTCGGCAGTCCGACAGAAATT
2189	AGGAGGAATTCCCGATCAAGCTTAATCTTAAAGG
2190	CTCCTCTCGAGGTCAGCAATCCCAACCTTTAT
2191	AGGAGCTCGAGTTAGCGATAAAAGAACAGCTGT
2192	CTCCTGGATCCTTTGTCATCTCTGATCATGACT
2193	AGGAGGAATTCAGGACTTGACGTTGTAAAAAAC
2194	CTCCTCTCGAGATATTCTTTGCCATTTACCATAAA
2195	AGGAGCTCGAGATTGATGCGAACGCGGTTTTG
2196	CTCCTGGATCCTCGACAACAATGGCGTGTTC
2197	AGGAGGAATTCAGCCTGAAGTTACATACGAAC
2198	CTCCTCTCGAGAAATGCTGCGTCATCTACAATTA
2199	AGGAGCTCGAGCCTTTCCAGGCTGACCGTG
2200	CTCCTGGATCCTCAGCAGCTGGATCGTCTC
2282	AGGAGGAATTCCCATTATGGACGCATACAGC
2283	CTCCTCTCGAGTCTCGCAGTTCCGATTACTTC
2284	AGGAGCTCGAGCATGTGGAAGATATCGCAGC
2285	CTCCTGGATCCATTCCCAATCAGATGCTGAAC
2286	AGAGGAATTCTCGCATCGTCATTGTTCTGT
2287	CTCCTCTCGAGCGTTACGTATACGGCTTTTTC
2288	AGGAGCTCGAGTCATTTACAACAGAGCTGTTTTC
2289	CTCCTGGATCCCGCTGACATTTGAAAAGCGA
2290	AGGAGGAATTCCGACTGTTGAAAAAGAGTCAAT
2291	CTCCTCTCGAGCGAACTTACGTTTTCCGGATC
2292	AGGAGCTCGAGATGCTGCCTCCAGTTATGATT
2293	CTCCTGGATCCTGCTATTGAAAATCCCATTTGAA
2294	AGGAGGAATTCCTTATTTCCTGCTTTTTTATTGGT
2295	CTCCTCTCGAGTTCTGTCTTCTCTCCCGCAA
2296	AGGAGCTCGAGCTGGCTTACGTATATAAAACAAA
2297	CTCCTGGATCCATGCAGCTCTTGTGACCACA
2317	AGGAGGAATTCGAAATTCTGCTATTTTCAGGCT
2318	CTCCTCTCGAGCTGAGCTGTTAAAGCCGATGC
2319	AGGAGCTCGAGATGAATGCCACAAAGGGAATG
2320	CTCCTGGATCCCAAAGAATCAACCTGATCC
2321	AGGAGGAATTCGAGATGACAGAATTGGCGCA
2322	CTCCTCTCGAGTTGAACCTGAAAAGGAGAAATTG
2323	AGGAGCTCGAGGTGGAAGCTTATCAGGAGATT

2324	CTCCTGGATCCACGATTGATGCAGATGCTGC
2325	AGGAGGGATCCGTCTTGATGTCAATGGGAATG
2326	CTCCTCTCGAGTCGATGTCCAAATAGCGGAAT
2327	AGGAGCTCGAGGTTTTCAGTTTAACGATTGAAAC
2328	CTCCTGAATTCAGCTCTACAATCGCCCTCAT
2365	AGGAGGAATTCAGATCACTCATCTTCCTAATTTGGC
2366	CTCCTGGATCCCAAAGTCGCTTCAATTGTTCAATAA
3260	GGCAACGGGAGCAGGTAC
3261	CAATTCGCCCTATAGTGAGTCGTCTGAAAATCAGTGCAAAAATAAG
3262	CCCAGCTTTTGTTCCCTTTAGTGAGTCACGGCTGTGGATACAGAT
3263	AAGCCAGACTCAACATCTGC
3330	AGGAGGCTAGCTGCAACGGAAAGCGAGAGGAATCC
4190	AGGAGGGATCCGGGCTTCGTAAAGAAGATTGGCTG
4191	CTCCTGTCGACTGTTGACATGTTTTTCACTCGCTAAC
4192	AGGAGGTCGACCAGATACTTGAAGAGACGGAAAACA
4193	CTCCTGAATTCTCCTCCGCTTAGGTCATTTTTGTA

Supplemental Figure Legends

Figure S1. The Δ7 protease mutant grows as single cells and swarms like wild-type *Bacillus subtilis*. A) Florescence microscopy comparing WT (3610) and Δ7 protease mutant (DS6329). Membranes are stained with FM-4-64 and are false-colored red. Scale bar, 4μm. B) Quantitative swarm assay for WT (open circles, 3610) and Δ7 protease mutant (closed circles, DS6329).

Figure S1


A)
WT
Δ7
B)
35
30
25
20
15
10
5
0
swarm radius (mm)
0 1 2 3 4 5 6 7 8
time (hr)
Δ7
WT