This version of the ESI published 25 July 2024 replaces the original version published 20 May 2020.

Supplemental Data

Movie1: After 1 hours of AuNPs-FAM-siRNA$_{NPR1}$ infiltration, the fluorescence in *Nicotiana benthamiana* leaves was observed by confocal microscope.

Movie2: After 1-2 hours of AuNPs-FAM-siRNA$_{NPR1}$ infiltration, the fluorescence in *Arabidopsis* protoplasts was observed by confocal microscope.

Figure S1: Estimation of FAM by laser confocal scanning microscope in *Nicotiana benthamiana* leaves.

Scanning 30 layers of *Nicotiana benthamiana* mesophyll cells from top to bottom, decompose the image of each layer. Images were taken under the excitation of 492nm wavelengths (green is the fluorescence of FAM). Bars = 5μm.

Figure S2: Protoplasts of *Arabidopsis* leaf epidermal cells 1 hour after injection by AuNPs-FAM-siRNA.

The green small spherical bright spots represented by the red arrow is AuNPs-FAM-siRNA. The blue arrow indicates the same position of these fluorescence in the bright field. Bars = 4μm.

Figure S3: The bacteria growth of plants inoculated with Pst DC3000 (*AvrRps4*) after different treatment for 3 days.

Columns 1: *npr1* infiltrated with buffer solution grew the most colonies (the colonies grew in the third row or even the fifth row)

Columns 2: the growth of colonies in the leaves of Col-0 plants infiltrated with AuNPs-siRNA$_{NPR1}$ (no colonies in the third row, but many colonies in the second row)

Column 3: Col-0 infiltrated with buffer solution had the least colony growth (only a few colonies in the second row)

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Figure S4： Original figures of western blot in Fig.5E. The NPR1 protein expressed (MW, 66 kDa) and its loading control β-actin (MW, 43 kDa) in the left panel in Fig.5E. Due to the silencing effect on fourth day was similar to that on third day, we just chose the results from D1 to D3. The NPR1-GFP protein (MW, 93 kDa) expressed and its loading control β-actin (MW, 43 kDa) in the right panel in Fig.5E. Due to the loading control β-actin in lane 4 is significantly lower than in the other lanes, the data from the WB of this lane were removed.

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Table S1: Statistics of colonies after different treatments

Counted the number of colonies with corresponding dilution on the solid medium, and then calculated the total number of colonies by the following formula:

Colony-Forming Units (cfu) /leaf disc = ((colonies *10^ dilution / 10) * 500)/2

Table S2: Zeta potential detected in this study.

Table S3: Particle sizes detected in this study.

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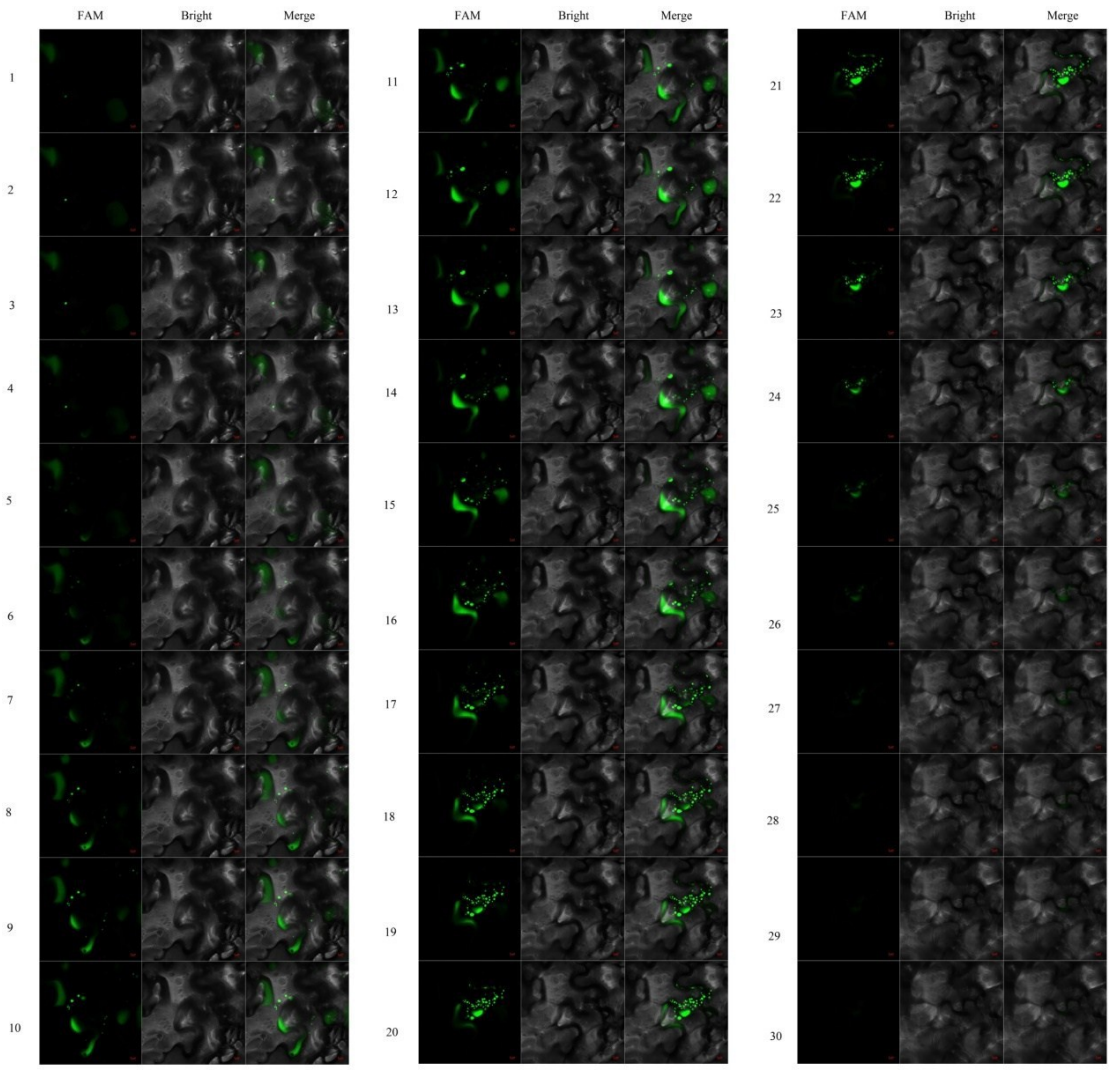

Figure S1

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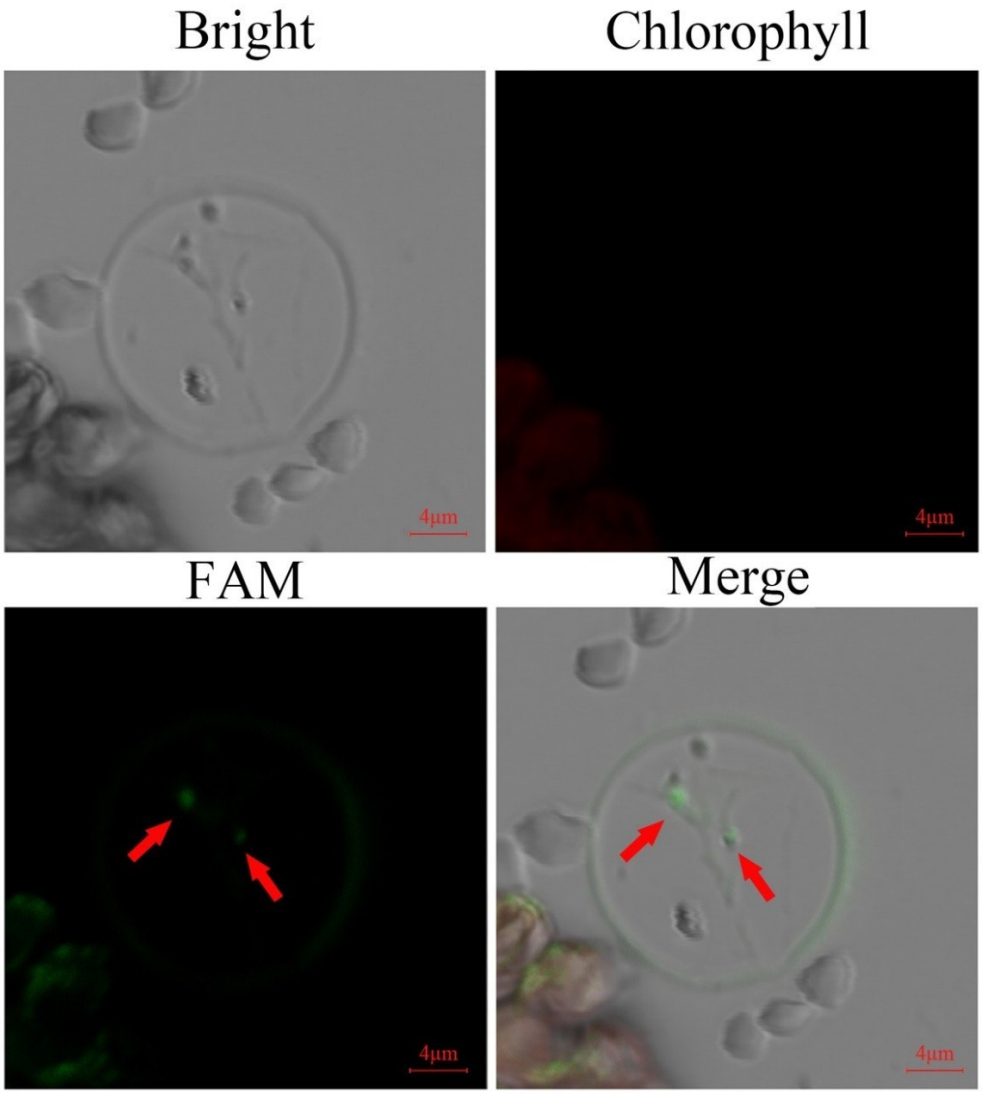

Figure S2

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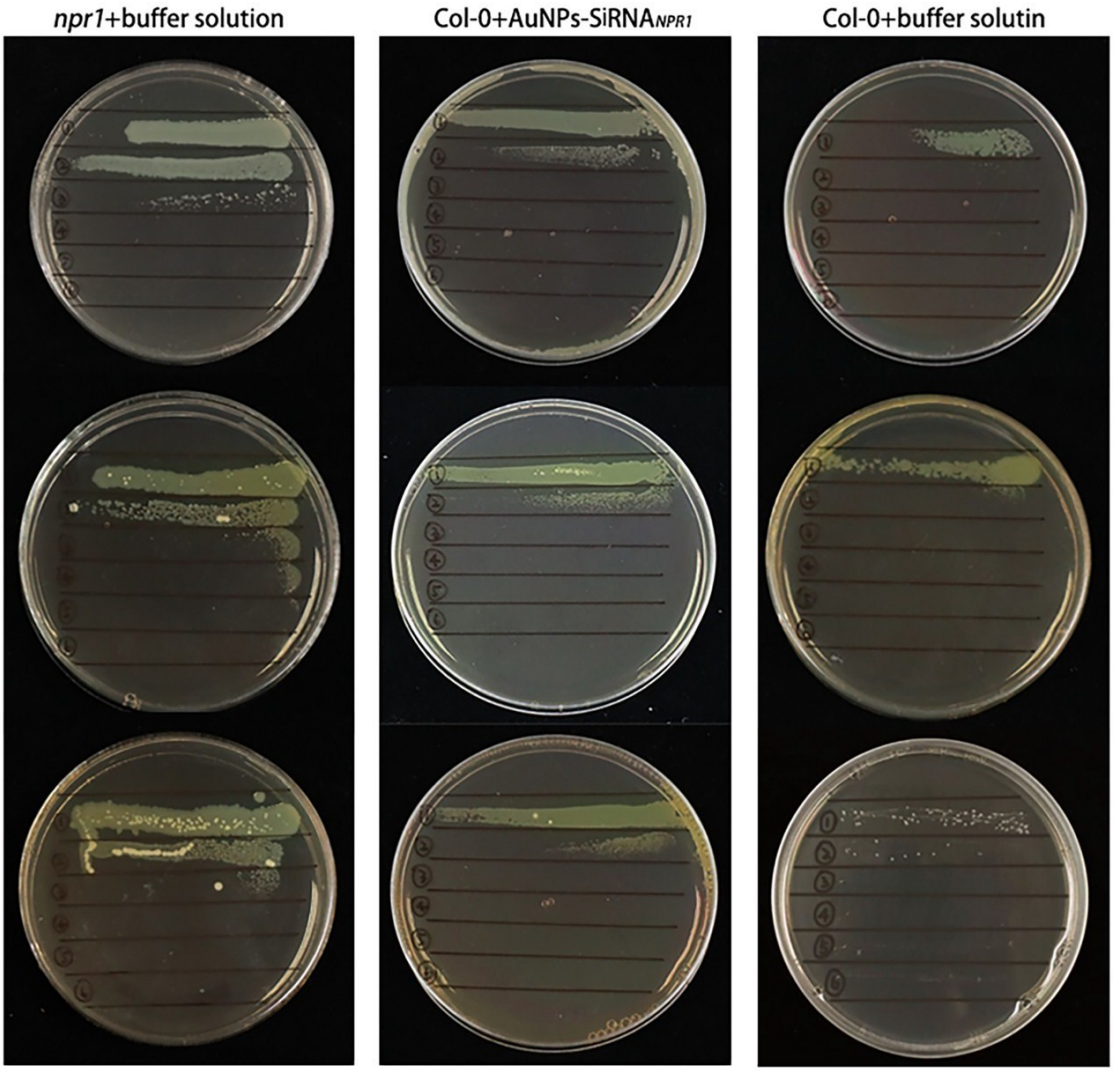

Figure S3

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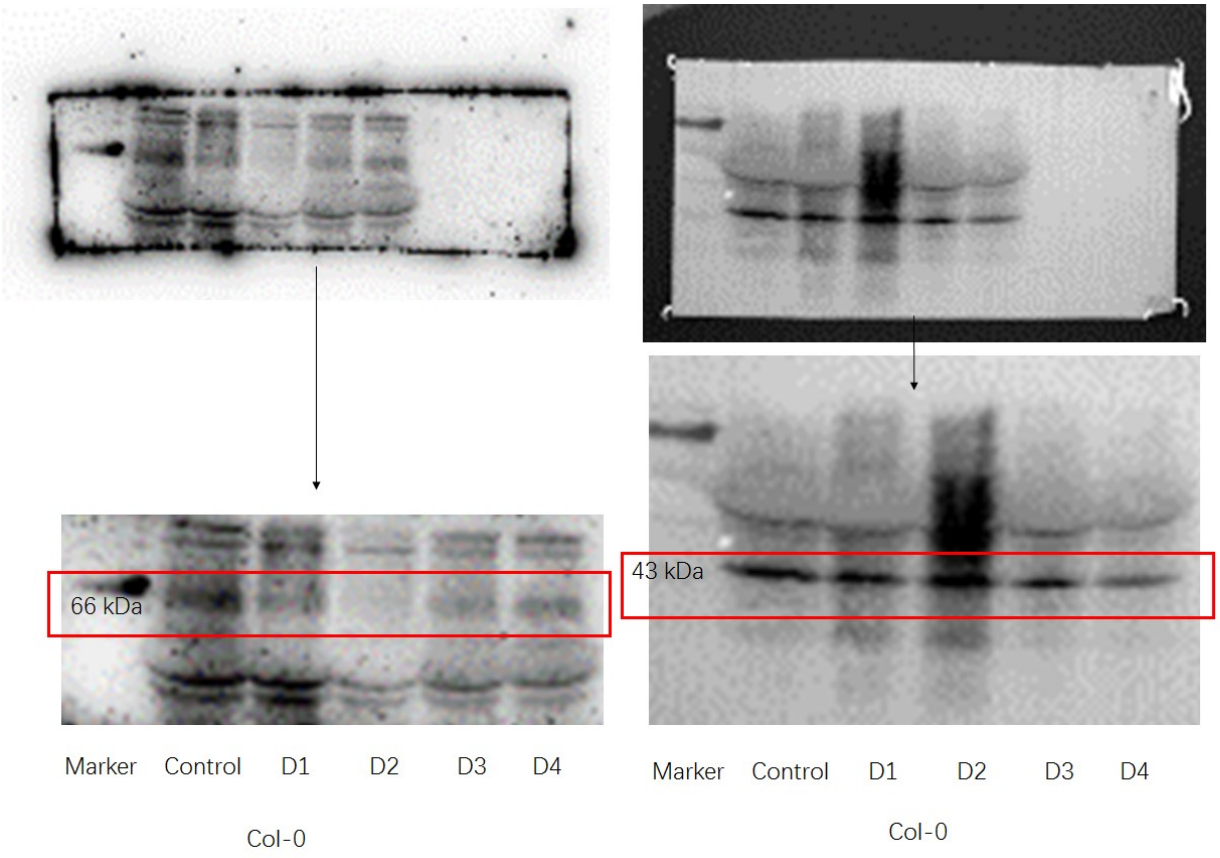

Figure S4

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Table S1: Statistics of colonies after different treatments

Genotype	plant	colonies	dilution	cfu/leaf disc	log(cfu)	ave log
npr1 + buffer solution	1	87	3	2175000	6.3375	
	2	5	5	12500000	7.0969	
	3	68	3	1700000	6.2304	
						6.5549
Col + SiRNA*NPR1*	1	214	2	535000	5.7284	
	2	237	2	592500	5.7727	
	3	189	2	472500	5.6744	
						5.7251
Col + buffer solution	1	14	2	35000	4.5441	
	2	31	2	77500	4.8893	
	3	13	2	32500	4.5119	
						4.6484

Table S2: Zeta potential detected in this study

Type	Sample Name	T ° C	ZP mV	Mob μmcm/Vs	Cond mS/cm
Zeta	AU	25	25.4	1.988	0.00876
Zeta	AU	25	25.2	1.974	0.00922
Zeta	AU	25	26.8	2.098	0.0168
Zeta	Au+siRNA	25	3.14	0.01961	0.000477
Zeta	Au+siRNA	25	3.69	0.289	0.000366
Zeta	Au+siRNA	25	5.48	0.4294	0.00172

Mean Au	25.8
Std Dev	18.38
Mean Au+siRNA	4.10333
Std Dev	1.22353

Table S3: Particle sizes detected in this study

Type	Sample Name	T ° C	Z-Ave d.nm	PdI	Mean Count Rate kcps	Derived Count Rate kcps	Intercept	Pk1 Mean Size d.nm	Pk2 Mean Size d.nm	Pk3 Mean Size d.nm
Size	Au	25	34.02	0.305	228.3	2056.7	0.91	49.27	4169	0
Size	Au	25	33.52	0.303	224.3	2020.6	0.91	50.46	4306	0
Size	Au	25	34.22	0.398	240.1	2163.4	0.908	49.02	4429	0
Size	Au+SiRNA	25	37.6	0.526	332.3	2993.6	0.907	52.65	1018	3554
Size	Au+SiRNA	25	38.79	0.55	362.5	3265.9	0.901	75.51	3673	0
Size	Au+SiRNA	25	38.36	0.423	348.2	3137	0.905	200.5	0	0

Mean Au	33.92
Std Dev	0.36056
Mean Au+SiRNA	38.25
Std Dev	0.60258