Supplementary information

The Antifungal Activity of Ag/CHI NPs against *Rhizoctonia solani* Linked with Tomato Plant Health

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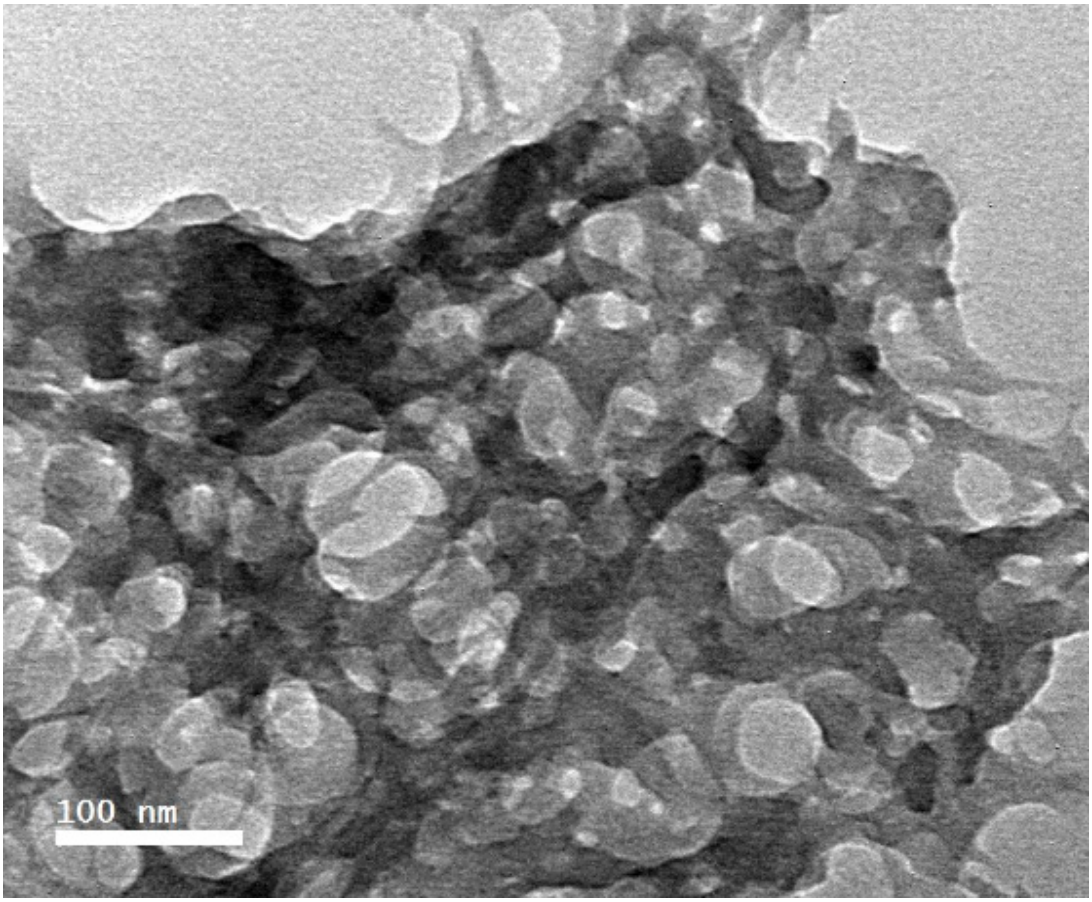

Figure S1. TEM of Silver nanoparticles adhered to CHI NPs in100 nm scale, histogram to average size of the silver NPs and CHI NPs were estimated by imageJ® software.

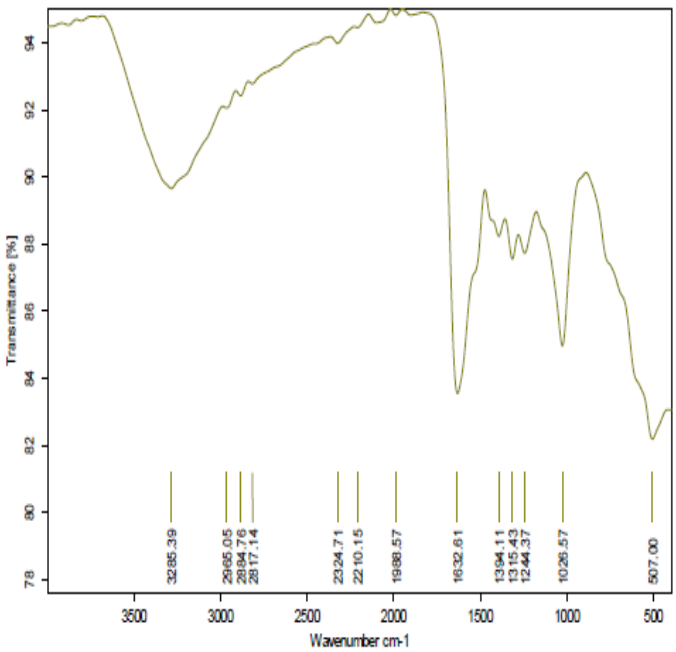

Figure S2(a). FTIR of AgNPs.

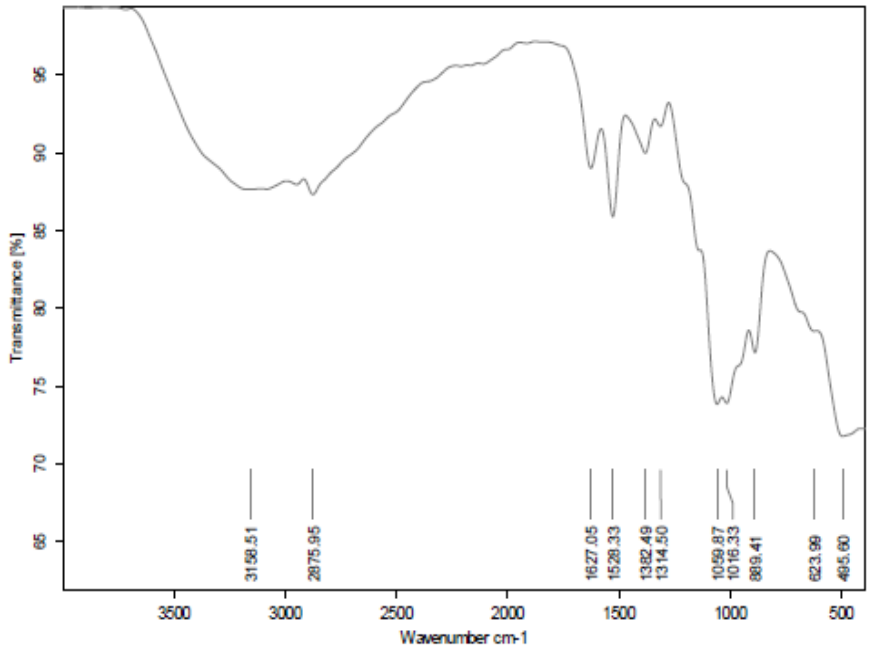

Figure S2(b). FTIR of CHI NPS.

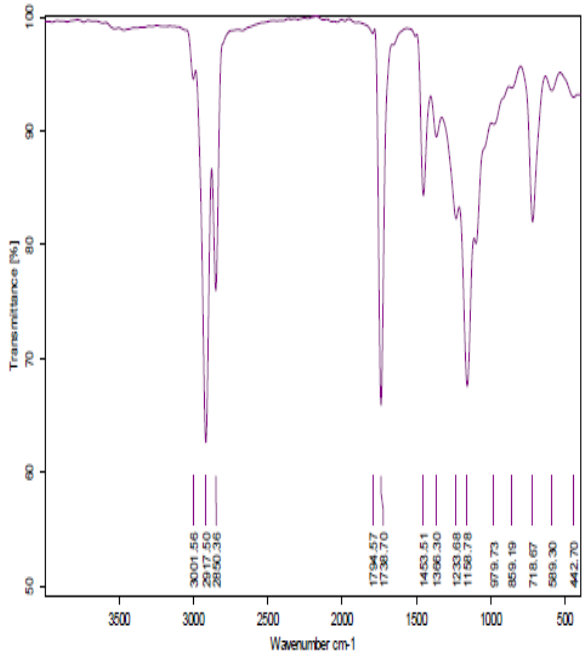

Figure S2(c). FTIR of CHI NPs -AgNPs.

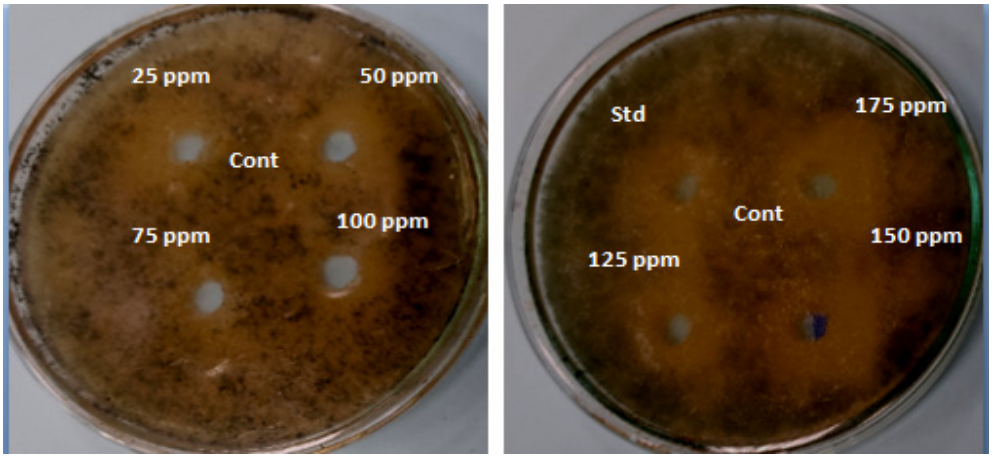

Figure S3. Ag/CHI NC concentrations.

Table S1. Genes and Primers used for Q-PCR.

Gene Name		Sequence
GST	F	5′- ACAAAAAGAGAGCTTGAGCAGC -3’
	R	5′- TCCTGGCAGGCATTTTGTCT -3’
AFPRT	F	5′- GTCGTCTTC TGC CCA TGA TT -3’
	R	5′- ACG TGG AGC ATG GTG TAT CA -3’
PAL1	F	5′- TCG CAA TCG CAA ACA TC -3′
	R	5′- TGC CCT TGA ACC CGT AGT C -3′
Defensin (PR12)	F	5′-CCAAATGCCTCGTCATCT-3′
	R	5′-ATTAGAGTCAAGCTCAAAAGG-3′
Chitenase (PR3)	F	5′-GCGGATCCCAACGCACTGCAACCGATTAT-3′
	R	5′-GCCCATGGAAGGAATCAGTTATGCGCAAAT-3′
β-Actin	F	5′-GTGCCCATTTACGAAGGATA- 3′
	R	5′-GAAGACTCCATGCCGATCAT- 3′
Fungal ITS	F	TCTGTAGGTGAACCTGCGG
	R	TCCTCCGCTTATTGATATGC

Table S2. Concentration (ppm) and inhibitory zones (mm) of Ag-Chitosan and Fungistatin.

Treatment	Concentration (ppm)	Growth reduction zone (mm)
Ag-Chitosan concentrations	25	13.483±0.289
	50	17.33±0.288
	75	18.7000±0.05
	100	21.217±0.287
	125	23.93±0.29
	150	25.817±0288
	175	27.117±0.29
Fungistatin (Std)	5 µL	24.57±0.29

Table S3. Treatment and germination schedule.

Soil inoculation with *R. Solani* 0ne week before transplantation	Foliar application NC (200 ppm)	**Germination**		
		15 days In peat moss (15 DAS)	Transplantation (pot exp.) 7 days (22 DAYS)	(Pot exp.) 7 days (29 DAYS)
Un inoculated	control	Seed growing inpeat moss and regularly irrigated with ¼ strength Hoagland solution	regularly irrigated	
	NC		NC foliar every 3 days + regularly irrigated	regularly irrigated
Inoculated	P		regularly irrigated	
	P+ NC		NC foliar every 3 days + regularly irrigated	regularly irrigated