

## Supplementary Information

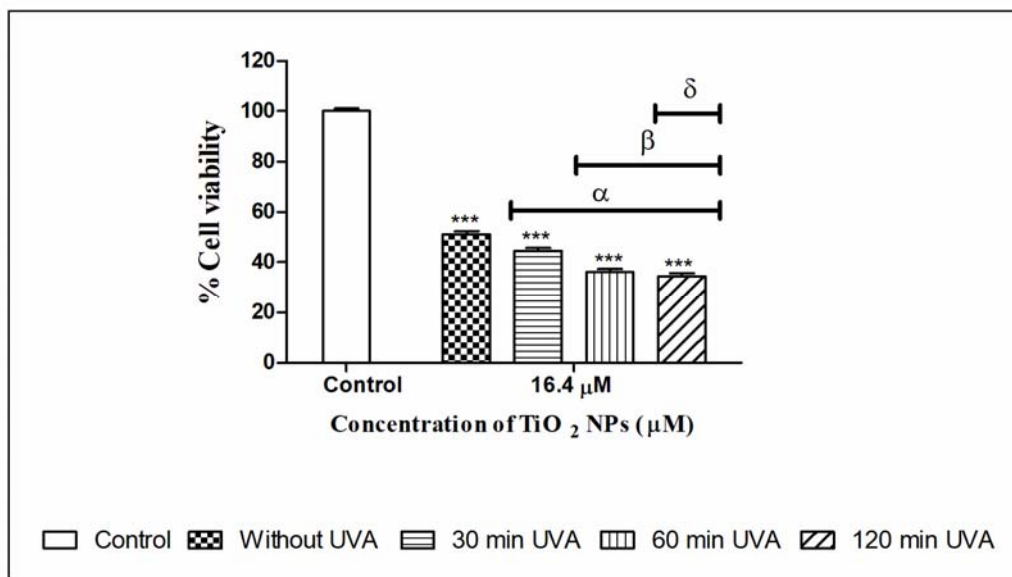


Fig. S1 UVA pre-irradiation time set for P25 TiO<sub>2</sub> NPs after treating *A. cepa* roots with UVA pre-irradiated (30, 60 and 120 min) TiO<sub>2</sub> NPs (EC<sub>50</sub> concentration i.e., 16.41 µM) (\*\*\*,  $\alpha$ ,  $p < 0.001$ ;  $\beta$ ,  $p < 0.01$ ;  $\delta$ ,  $p > 0.05$  or non-significant)

**Table S1** Abbott's modeling shows the types of interaction between the NPs and TC inside the binary mixture

Condition	Conc. of TiO <sub>2</sub> NPs (µM) + TC (0.016 µM)	R <sub>I</sub> value	Type of interaction between TiO <sub>2</sub> and TC
Non-irradiated TiO <sub>2</sub> NPs	0.782 µM TiO <sub>2</sub> NPs	≈ 1	Additive
	1.56 µM TiO <sub>2</sub> NPs	≈ 1	Additive
	3.13 µM TiO <sub>2</sub> NPs	> 1	Synergistic
	6.26 µM TiO <sub>2</sub> NPs	> 1	Synergistic
UVA pre- irradiated TiO <sub>2</sub> NPs	0.782 µM TiO <sub>2</sub> NPs	≈ 1	Additive
	1.56 µM TiO <sub>2</sub> NPs	≈ 1	Additive
	3.13 µM TiO <sub>2</sub> NPs	> 1	Synergistic
	6.26 µM TiO <sub>2</sub> NPs	> 1	Synergistic

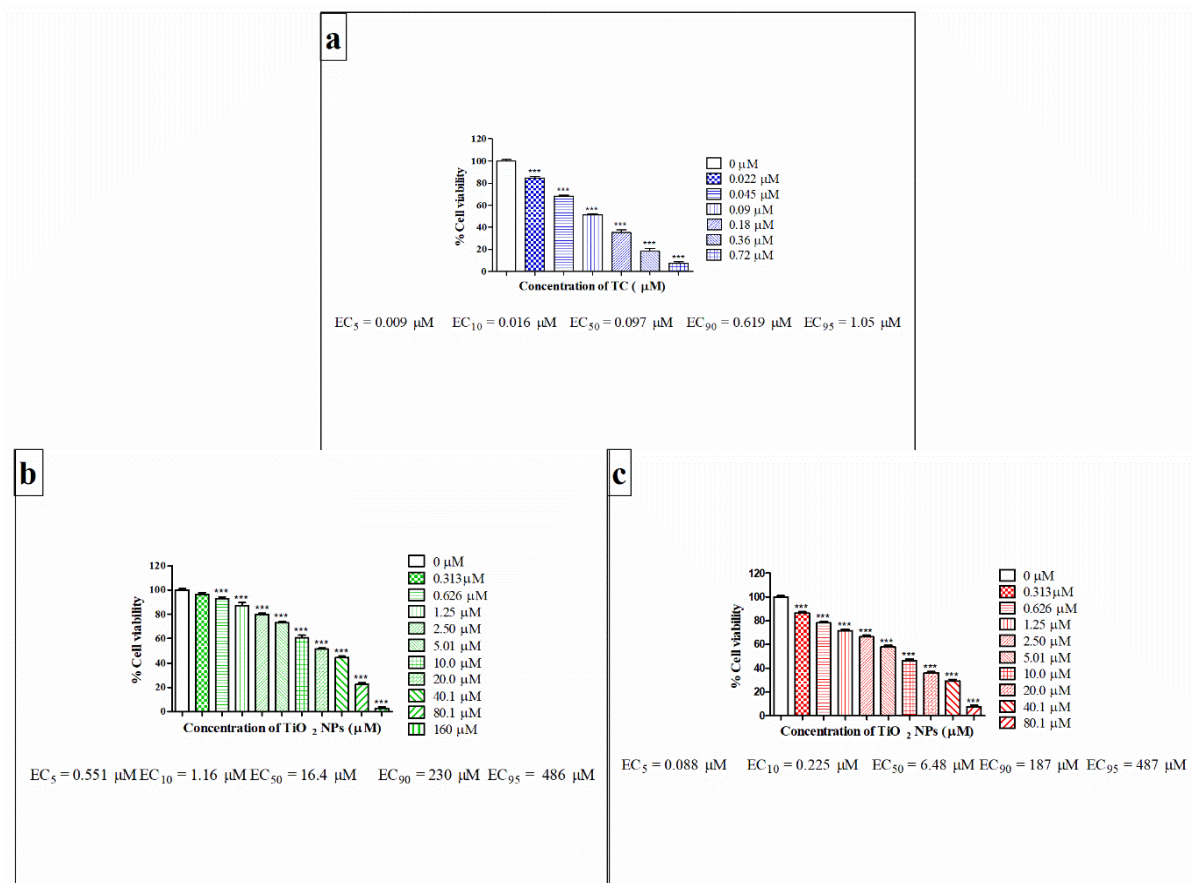


Fig. S2 EC<sub>50</sub> Value determination for (a) TC, (b) NI-TiO<sub>2</sub> NPs, and (c) UVA- TiO<sub>2</sub> NPs treated *A. cepa* root tips cells

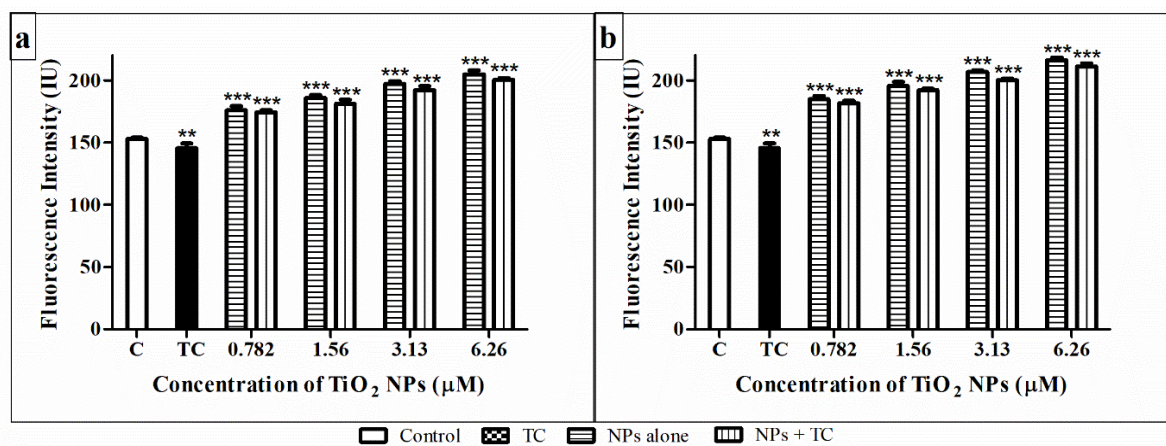


Fig. S3 Total intracellular ROS generation after treatment of *A. cepa* roots with an individual and binary mixture of TC and TiO<sub>2</sub> (a) Non-irradiated TiO<sub>2</sub> NPs and (b) UVA pre-irradiated TiO<sub>2</sub> NPs. \* denoted the significance with the control sample (\*\*,  $p < 0.01$ ; \*\*\*,  $p < 0.001$ )