

Supplementary Information

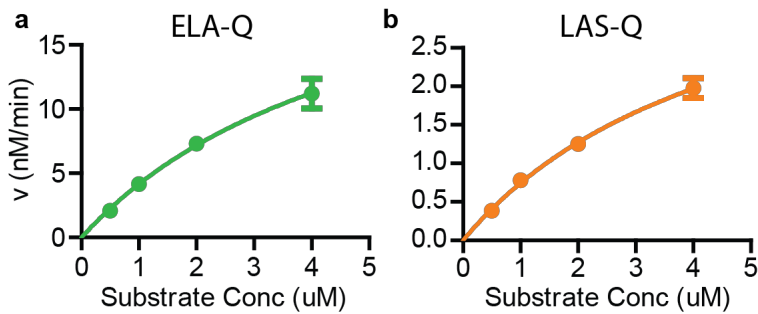


Figure S1. Cleavage of substrates by PA01 supernatant. Supernatant from PA01 culture was collected and incubated with various concentrations of FRET-paired substrates ELA-Q (a) and LAS-Q (b) and cleavage was monitored by fluorescence signal.

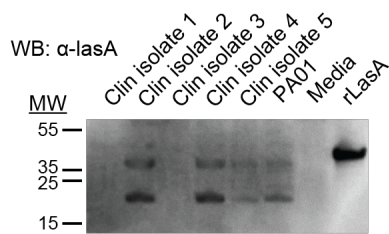


Figure S2. Characterization of LasA secretion by *P. aeruginosa* strains. Anti-LasA immunoblot of supernatant protein from *P. aeruginosa* clinical isolates and the laboratory strain PA01, with fresh bacterial growth media, and recombinant LasA protein controls, all run on an SDS-PAGE gel. The slight difference in gel migration between supernatant and recombinant protein samples is likely due to the presence of a 6xHis-SUMO tag on the recombinant protein.

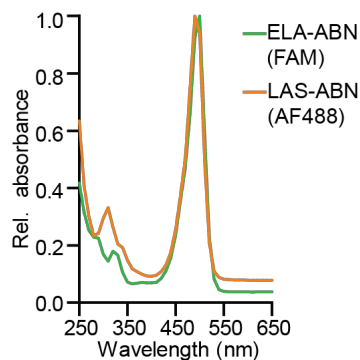


Figure S3. Absorbance spectra of activity-based nanosensors. Absorbance spectra were collected for activity-based nanosensors responsive to elastases (ELA-ABN, green curve) or LasA (LAS-ABN, orange curve), showing FAM and Alexa Fluor 488 absorbance peaks, respectively.