Supplementary Information.

Experimental Details.

Benzotriazole dye conjugation to YcC. YcC was coupled to PAM with a 25 fold excess of dye. This was conducted in an Eppendorf safe-twist tube containing 80 µl YcC (1.0 × 10-4 mol dm-3 in phosphate buffer 10 mM, pH7), 400 µl phosphate buffer, and 20 µl PAM 1.0 × 10-4 mol dm-3 in DMF). The reaction was left at room temperature and gently mixed for 2 hours.

Size exclusion HPLC. Seperation of the modified YcC from excess dye was achieved by size exclusion HPLC, using a 5 ml Sephadex column (Amersham Biosciences) on a Dionex instrument. Phosphate buffer, pH 7 was used as the mobile phase (1 ml / min), with UV/Vis detection at 283, 384, 406 and 599 nm. The product of the YcC with PAM reaction was collected, and labelled [1].

SE(R)RS Analysis. SE(R)RS spectra were recorded using a Renishaw confocal system with a CCD detector. A Kr ion laser provided excitation of 406 nm. All spectra were collected from a microtitre plate using a 20 × objective. A Renishaw probe system was also used with 514 nm excitation, 20 × objective, and disposable cuvettes used. The general assay for all SERRS analysis was: 400 µl citrate reduced silver colloid, 400 µl H2O, 200 µl analyte, 30 µl 0.01 % poly-L-lysine. The reagents were added to a disposable cuvette in the order given, and vortexed briefly. 320 µl of sample was removed from the cuvette and added to a well of the microtitre plate for analysis.