Electronic Supplementary Material (ESI) for Analyst.

Supporting Information

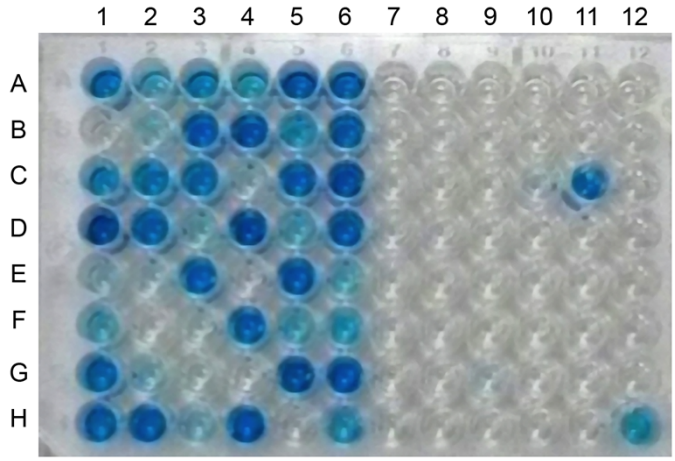

Figure S1: Phage-ELISA performed on forty-eight myc receptor proteins, which were selected randomly after two rounds of panning. Wells in rows A–H and columns 1-6 were labeled with anti-myc tag antibody, and then exposed to different phage particles displaying different anti-myc tag antibody-specific receptor proteins. The corresponding controls for each well (rows A–H and columns 7-12) were labeled with casein instead of anti-myc tag antibody.

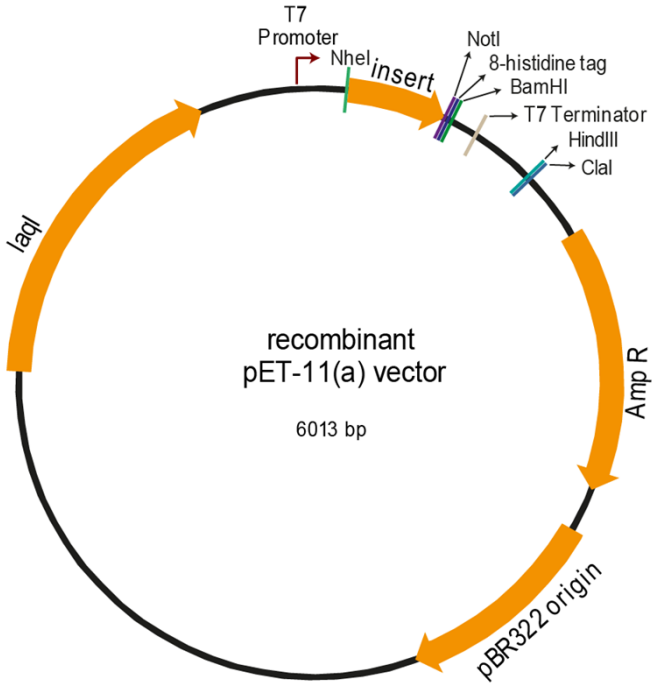

Figure S2: Schematic of pET-11(a) vector with non-antibody receptor protein nucleic acid sequence inserted between the NheI and BamHI restriction sites. The insert is followed by an 8-histidine tag to enable affinity purification of the expressed proteins.

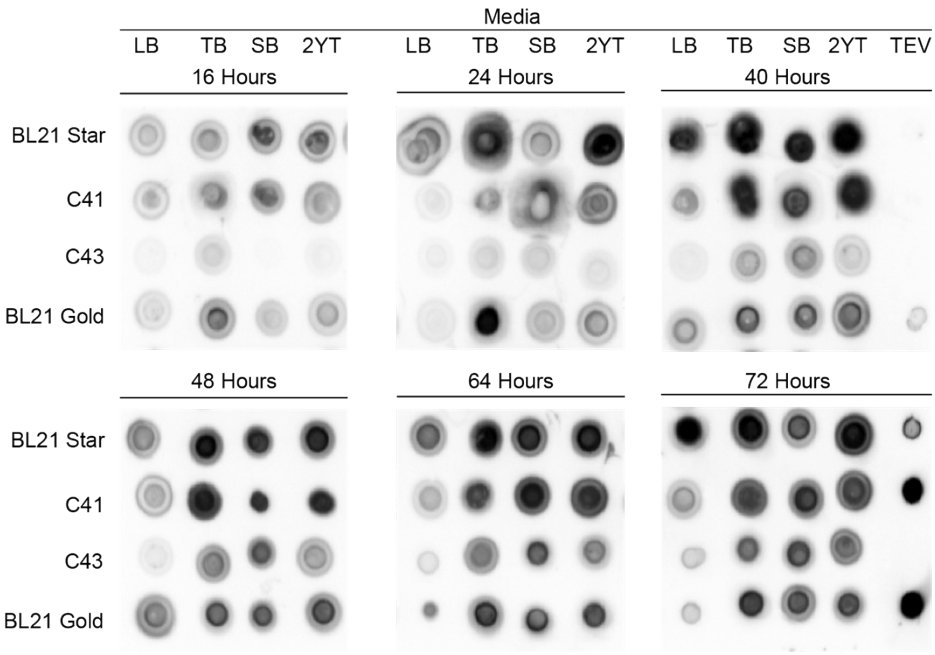

Figure S3: Chemiluminescence detection of a dot blot on non-antibody receptor protein samples collected from cell cultures of BL21-star (DE3), C41 (DE3), C43 (DE3), and BL21-gold (DE3) harvested at time intervals of 16 hours, 24 hours, 40 hours, 48 hours, 64 hours, and 72 hours. The various media used were LB, TB, SB, and 2YT. In the final columns different concentrations of his-tagged TEV protein provide a positive control.

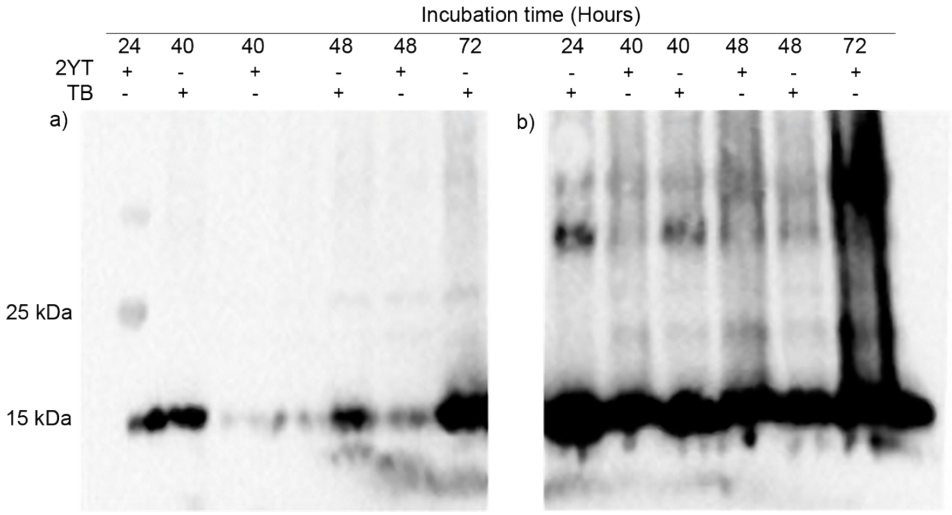

Figure S4: A western blot performed on receptor protein samples chosen from the dot blot experiment in figure S3. The expression of the native scaffold in (a) the supernatant of the cell lysate and (b) the total cell lysate were analyzed using anti-histidine tag antibody. The bands were observed over the range of 12–15 kDa molecular weight. The observed receptor protein concentration in the supernatant was comparable to the concentration in the cell lysate when expressed in 2YT for 24 hours, TB for 48 hours, and TB for 72 hours.

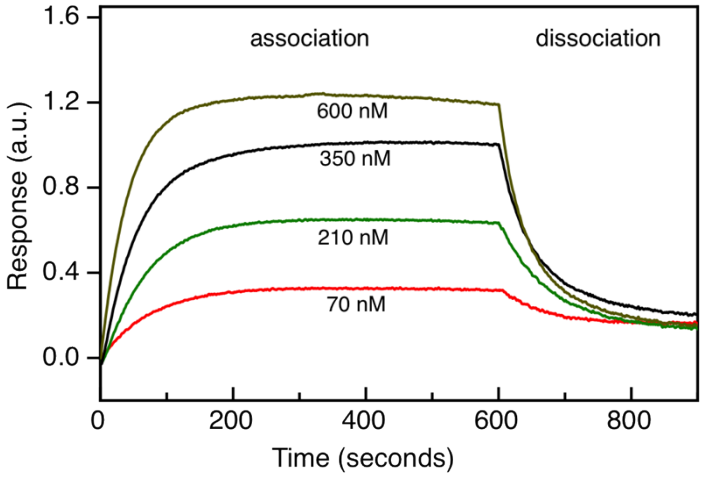

Figure S5: Bio-layer interferometry sensograms showing association and dissociation response of monoclonal anti-myc antibody at concentration from 70 nM to 600 nM to receptor protein-2 immobilized on the sensor. The curve was obtained after taking into account the response of the sensor from the PBS buffer.

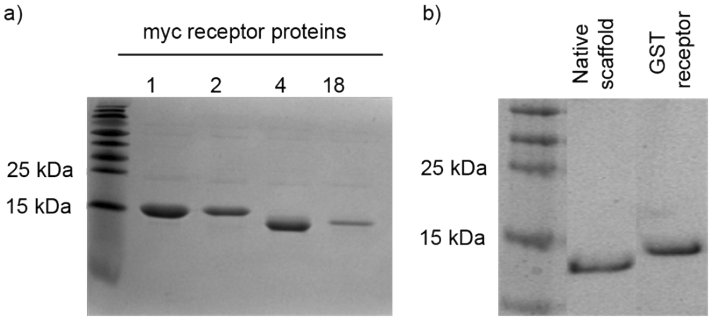

Figure S6: 15% SDS-PAGE (200 V, 1h). 10 µg of protein was loaded in each lane. (a) Receptor protein-1, -2, -4 and -18. (b) Controls (native scaffold, GST receptor protein). Pre-stained molecular weight protein ladder was loaded in lane 1 in all gels.