## Supplementary Information for "The role of non-specific interactions in a patchy model of protein crystallization"

October 3, 2015

0.3 0.25 0.2 Frequency 0.15 0.1 0.05 0 P1211 P3221 P43212 C 2 2 21 P 65 P 43 P 32 P 31 2 1 I 2 2 2 P 41 P 21 21 21 C 1 2 1 P 21 21 2 Ρ1 P 41 21 2 P 61 P 65 2 2 P 61 2 2 P 31 Η3 Space group

Figure S1: Distribution of symmetry space groups in protein crystals. The most common symmetry space groups of crystals of monomeric proteins, as calculated from a non-redundant set of  $\sim 3000$  high-resolution protein structures from the Protein Data Bank (http://www.rcsb.org/pdb/home/home.do), accessed in July 2015.



Figure S2: Distribution of unit cell energies and particle volume fractions. Histograms of the energies and particle volume fractions of the sampled P2<sub>1</sub>2<sub>1</sub>2<sub>1</sub> unit cells, each color representing a different random decoration of patches. Note that, since only the lowest energy structures were of interest, these figures only display data for unit cells with  $E_{uc} < -40$  (in units of  $\varepsilon_{ns}$ ).



Figure S3: Poor crystal nucleation for conditions otherwise consistent with crystal growth. Snapshots from the end of simulations with  $\eta = 1.0$ ,  $\xi = 3.0$  and (upper image)  $\varepsilon_{ns} = 2.0 kT$  and (lower image)  $\varepsilon_{ns} = 2.2 kT$ . Particles colored gray have not created any crystalline bonds. Any other color indicates a crystalline particle.