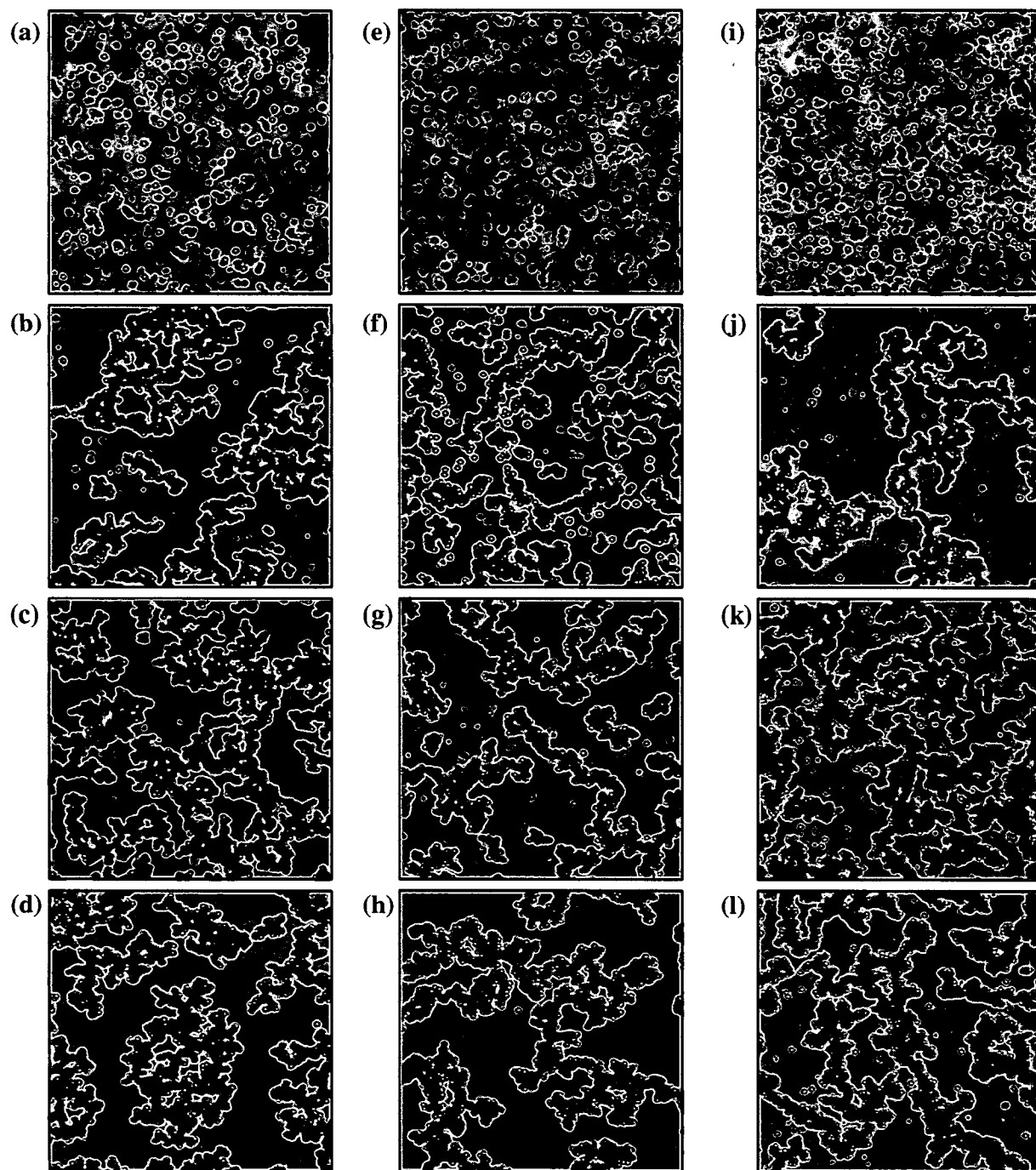


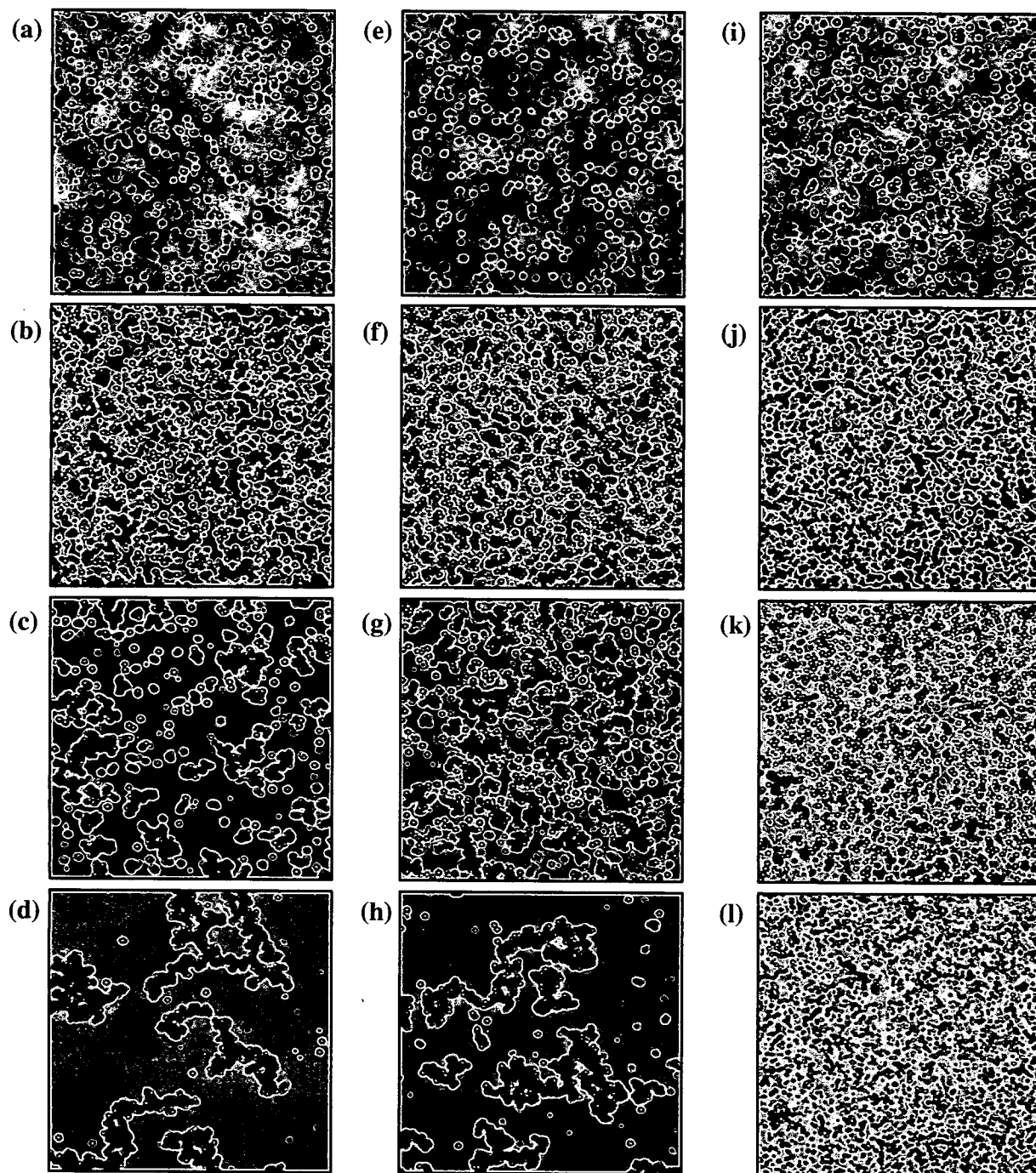
**Supporting Information**

**Figure S1.** Phase contrast micrographs (20x) of time-dependent structural evolution of colloidal gels comprised of 1.10 and 1.87 $\mu\text{m}$  beads with complementary strands of varying overlapping segment length. Each suspension had the same total volume fraction ( $\phi_{t,0}=10^{-4}$ ) and ionic strength (200mM NaCl). Mixtures of small and large beads were functionalized with (a-d) **a18** and **b18** respectively (12 base pair overlap) (e-h) **a17** and **b17** respectively (10 base pair overlap) and (i-l) **a16** and **b16** respectively (8 base pair overlap). Micrographs were taken (a,e,i) 10 minutes (b,f,j) 2h (c,g,k) 4h and (d,h,l) 24h after mixing heterogeneous beads together.

**Figure S2.** Phase contrast micrographs (20x) of time-dependent structural evolution of colloidal gels comprised of 1.10 and 1.87 $\mu\text{m}$  beads with complementary strands of varying overlapping segment lengths hybridization. Each suspension had the same total volume fraction ( $\phi_{t,0}=10^{-4}$ ) and ionic strength (50mM NaCl). Mixtures of small and large beads were functionalized with (a-d) **a18** and **b18** respectively (12 base pair overlap) (e-h) **a17** and **b17** respectively (10 base pair overlap) and (i-l) **a16** and **b16** respectively (8 base pair overlap). Micrographs were taken (a,e,i) 10 minutes (b,f,j) 2h (c,g,k) 4h and (d,h,l) 24h after mixing heterogeneous beads together.



**Figure S1**



**Figure S2**

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