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Computational modeling of autocatalytic heteropolymer replication HEMACHANDER SUBRAMANIAN, ROBERT GATENBY, Moffitt Cancer Center — We computationally study replication of a hypothetical autocatalytic heteropolymer using Kinetic Monte Carlo. When cooperativity is included in the model, we observe better replication characteristics and higher fitness in strands with certain symmetries broken. We correlate this symmetry-breaking with the observed broken mirror symmetry of extant heteropolymers.

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