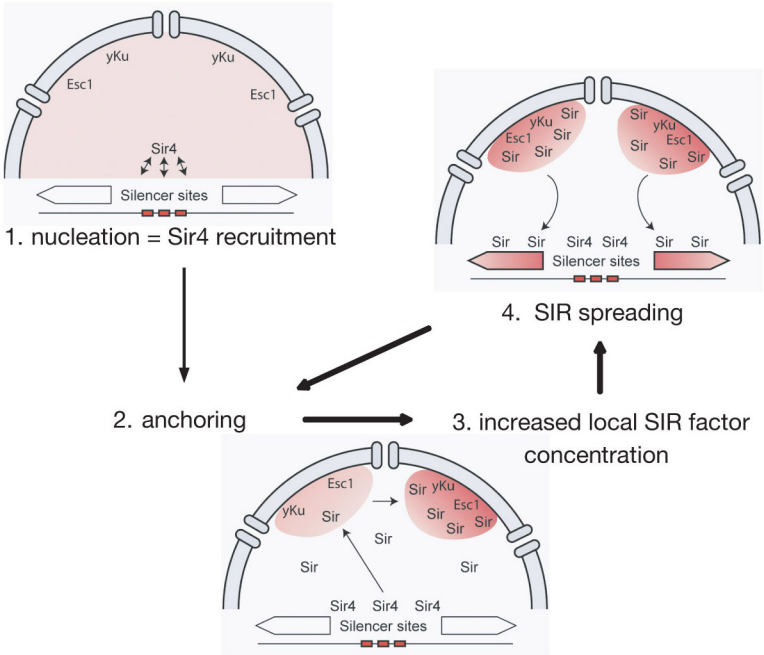

Figure 10. Spontaneous Formation of Silencing Subcompartments

A simple model for the formation of subnuclear compartments is shown. (*1*) Sir4 is first recruited at the nucleation center by DNA-binding proteins that can bind Sir4. These include Rap1, ORC, Abf1, and yKu. (*2*) The presence of Sir4 at the locus will then bring it to the nuclear periphery through one of the two Sir4-anchoring pathways (yKu or Esc1). (*3*) At the nuclear envelope, the high local concentrations of SIR proteins will help silencing complexes assemble and spread. (*4*) The ability of silent loci to remain attached at the periphery increases the local concentration of SIR proteins and reinforces the silencing of other loci within this region. Importantly, telomere-bound yKu can independently recruit telomeres to the nuclear envelope just as Sir4 recruits silencer sequences.