Suppression of cell growth by heavy chain ferritin

阮淑慧

Guo;J.-H.;Juan;S.-H.;andAust;S.D.

摘要

Abstract

While producing recombinant rat liver H and L chain ferritin homopolymers using the baculovirus expression system, we noticed that rat liver H chain ferritin, but not L chain ferritin, had a suppressive effect on the growth of Spodoptera frugiperda (Sf-21) cells. Suppression was observed immediately after infection with recombinant H chain ferritin baculovirus prepared from lysed infected cells. Immediate suppression was observed when purified with either recombinant H chain apoferritin or various holoferritins (loaded with 1,970 +/- 50 or 2,520 +/- 90 atoms of iron/ferritin) indicating that suppression was not due to sequestration of iron required for cell growth. Suppression by H chain ferritin was also observed upon attempting to express the protein in Escherichia coli. Strategies for expression of recombinant rat liver H and L ferritin homopolymers in both prokaryotic and eukaryotic expression systems were developed.