Left is the same as Figure 7B in the revised manuscript and the gel does not contain the chloroquine. Right is the chloroquine gel (2.5 μg/ml) and the same samples as the left were loaded.

Since chloroquine is intercalator and accumulates the positive supercoiling in the plasmid DNA (Shure M et al, 1977), higher concentrations of chloroquine accumulate more positive supercoiling. Therefore, relaxation form runs faster than negatively supercoiled DNA. In the case of Fig. 7A, the gel without chloroquine could not separate the topoisomers clearly, and, therefore, the chloroquine gel is required. On the other hand, Fig. 7B shows the agarose-gel fractionation in the absence of chloroquine, which sufficiently illustrates the relaxation by cell extract. However, in the chloroquine gel, the higher relaxed forms run faster than the supercoiled one (Fig. 7C).