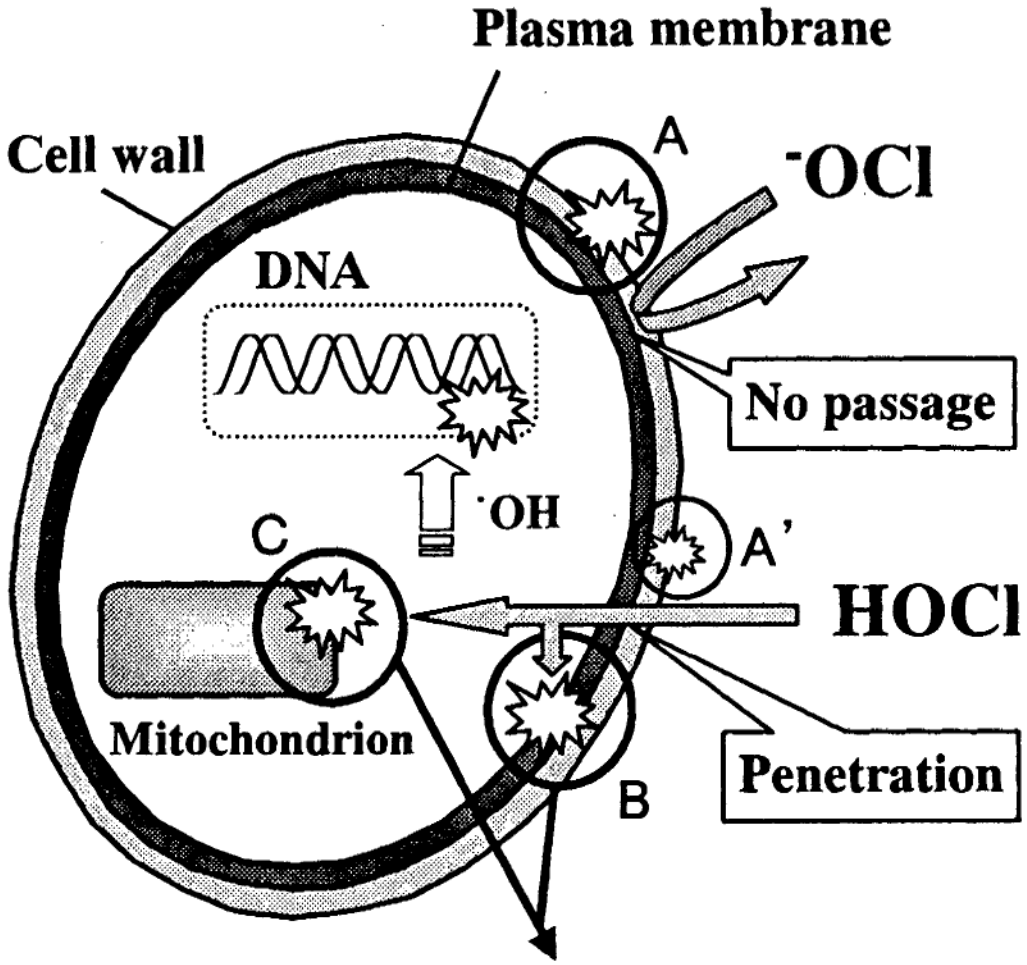
PROCESS CLEANING SOLUTIONS
Bringing Science to the Art of Cleaning ®

Membrane permeability and germicidal activity

A model for the germicidal actions of HOCI and - ocI based on their ability to penetrate into the mitochondrion



$$H_2O_2 + Fe^{2+} \rightarrow {}^{\cdot}OH + {}^{-}OH + Fe^{3+}$$

$$HOCl + Fe^{2+} \rightarrow {}^{\cdot}OH + Cl^{-} + Fe^{3+}$$

Model illustrating the mechanisms of the germicidal actions of HOCI and -oc1 based on their ability to penetrate the membrane into the microbial cell. Ionized -oc1 has a poor germicidal activity because of its inability to diffuse through microbial I plasma mem-brane, and it exerts an oxidizing action only from outside of the cell (circle A). HOCI can penetrate the lipid bilayer in the plasma membrane by passive diffusion due to its electrical neutrality. HOCI can attack the microbial cell both from the outside (circles A') and inside the cell (circles B and C), which is responsible for the potent germicidal activity of HOCI.