



**Fig. 1.** Antibacterial effect of powdered TiO<sub>2</sub> on *S. mutans* AHT.

Photo semiconductors are excited and carry out photo-catalytic reaction when irradiated with light of shorter wave-length than the band gap energy of semiconductors. Therefore, in the case of TiO<sub>2</sub> light under 415 nm including ultraviolet rays which corresponds to the band gap energy (3.0 eV) would be quite effective [Matsunaga, 1985]. The light derived from a mercury lamp contains a wide range of wavelengths from ultraviolet to infrared. Since the glass of the desiccator and vials absorbed a large part of the ultraviolet rays, the direct bactericidal effect of these rays was eli-

minated. This is verified from the fact that cell viability in the control mixture did not decrease during 120 min of incubation. Further studies should be done using other species of oral microorganisms.

## References

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