soil, fesh water and sea water, 7 strains of Chitinolytic bacteria were isolated. 5-3K which exhibited the highest chitinase activity was identified as *Aeromonas hydrophila* and cultural conditions from maximum chitinase production were determined. Optimum Chitinase production was obtained at pH 7, 33eC and with chitin concentration greater tham 0.2% Under optimal conditions, high yields of Chitinase were obtained in 16-30 hours. Chitinase was purified by ammonium sulfate precipitation and sephadex G-100 gel-filtration from the culture filtrgte.

## Deactivation kinetics of *C. rugosa* lipase

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To extend the spectrum of enzyme utilization in the organic solvent system, *C. rugosal* lipase was selected as a model enzyme because its substrate is soluble to organic solvent. One of the serious disadvantages in this system was the deactivation of the lipase. The pattern of lipase deactivation was the biphasic model. The activation energies for the deactivation were $14.05 \times 10^4$ KJ/ Kg mole in the first phase and $3.59 \times 10^4$ KJ/mole in the second phase. The several factors were studied for their influences on the pattern of deactivation. Iso-octane as organic solvent influenced more on the first phase than the second phase. Urea as the reagent affecting boty hydrophobic interaction and hydrogen bond of enzyme also influenceo more on the first phase. And the optimum pH for the activity was not correlated to that of the stability.

## Characteristics of lipase immobilized on sephadex LH-20 and sephade x LH-60 for hydrolysis of olive oil in reverse phase system

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The hydrolysis of olive oil was attempted with immobilized *C. rugosa* lipase in the reverse phase solvent system. (i.e. immobilized wet particles is dispersed in continuous phase olive oil or organic solvents containing olive oil). Sephadex LH-20 and LH-60 were used as the supports that can be used in organic solvents. The water content of wet particles of sephadex LH-20 and LH-60 were about 72% (w/w) and 85% (w/w), respectively. Both swollen gels with 0.05M buffers adsorbed about 18% of lipase dissolved. They were easily dispersed in liquid olive oil or in organic solvents. The effects of organic solvents on the stability and catalytic activity of the lipase have been examined. The results revealed that isooctane is superior to the other solvents examined for enzymatic fat spliting in reverse phase system. Kinetics of enzymatic hydrolys of olive oil by immobilized lipase has been investigated in a batch reactor. Effects of pH and temperature on the lipase were studied. The substrate concentration was influenced positively on the thermal stability.