of the HSP, the 104 kDa HSP was induced by ethanol shock, and amount of the 104 kDa HSP (p104) reached up to 18% of total cellular protein. But unlike other bacteria, GroEL, DnaK and Clp protein was not induced by ethanol shock.
The aims of this study was to determine and characterize physiological role of HSP104 in S. pneumoniae. S. pneumoniae defective in p104 was produced by insertion deletion mutagenesis by tripartite PCR followed by transformation. To elucidate mechanism of the p104 in thermotolerance, viability of the cells was determined after heat shock. In basal thermotolerance test, the p104 mutant showed no significant difference with that of the wild type. However, the mutant cells were 10 times more sensitive than the wild type in induced thermotolerance test. These result suggested that the p104 has chaperone fuction. Immunological crossreactivity of anti-pneumococcal p104 with other organisms(B.subtilis, S.aureus, S.pyogen, E.coli, S.typi) cell lysates was measured by Western blot. But anti-pneumococcal p104 antibody did not crossreact with other organism's cell lysates protein.

[PC2-7] [04/21/2000 (Fri) 14:50 - 15:50 / [1st Fl, Bldg 3]]

Inhibition of acyl CoA synthetase by phenazine-1-carboxylic acid

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Incubation of phenazine-1-carboxylic acid (PCA) with acy CoA synthetase from Pseudomonas leads to enzyme-catalyzed depletion of PCA, to transient inhibition, and to irreversible inactivation of the enzyme. Both the transiently inhibited and irreversibly inactivated species show a marked increase in the absorbance at 360 nm that is proportional to the decrease in enzyme activity. Hydroxylamine treatment of irreversibly inactivated enzyme restores about one-third of the catalytic activity, with a concomitant decrease in absorbance at 360 nm. Polyacrylamide isoelectric focusing of the irreversibly inactivated enzyme shows three bands of approximately equal intensity, different native enzyme. Upon hydroxylamine treatment, one of the three bands disappear and now focuses identically with native enzyme. It is evident that the irreversible inactivation of enzyme by an excess of PCA generates three products, one of which can be reactivated by hydroxylamine.

[PC2-8] [04/21/2000 (Fri) 14:50 - 15:50 / [1st Fl, Bldg 3]]

Characterization of the Salmonella typhimurium ATCC-13311 astJ Gene, Encoding an Arylsulfate Sulfotransferase

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Sulfoconjugation is an important pathway in the detoxification of compounds which have phenolic functional group. It is reported that many intestinal florae use arylsulfate sulfotransferase (ASST) whose donor substrates are phenyl sulfate esters, for conjugation.
The gene encoding ASST from the Salmonella typhimurium ATCC-13311 was cloned and expressed in Escherichia. coli TH2. On the basis of restriction enzyme map, insert DNA was subcloned and sequenced by Sanger dideoxy termination method. The substrate specificity of recombinant ASST was same with that of parent ASST. Using p-nitrophenyl sulfate as a donor substrate, phenol is the best acceptor substrate, followed by 1-naphthol, resorcinol, tyramine, acetaminophen, and tyrosine

[PC3-1] [04/21/2000 (Fri) 14:50 - 15:50 / [1st Fl, Bldg 3]]

EFFECTS OF CURCUMIN AND RELATED DIARYLHEPTANOIDS ON INDUCIBLE