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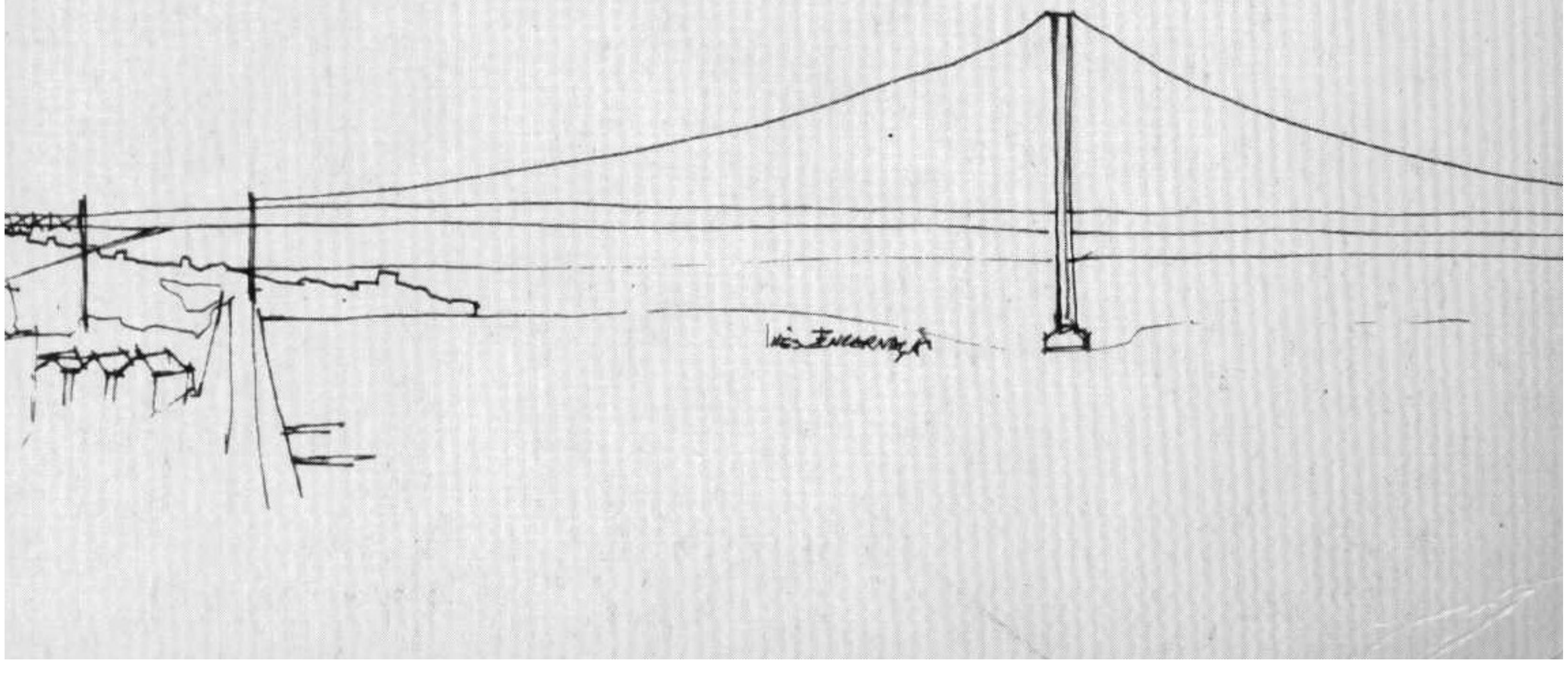
BOOK OF ABSTRACTS

LIST OF PARTICIPANTS



STRUCTURAL CHARACTERIZATION AND BIOLOGICAL ACTIVITIES OF AN EXOPOLYSACCHARIDE PRODUCED BY *LACTOBACILLUS KEFIRANOFACIENS*

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Lactobacillus kefiranofaciens, which is isolated from kefir grains, produces an exocellular polysaccharide when cultured, not only in reconstituted skim milk, but also in a liquid medium which contains rice that has been previously degraded by glucoamylase. The maximum yield of the polysaccharide from the rice culture was 1.7 g/L after a seven-day culture period at pH 5.0 and 33 °C. Compositional analysis, methylation analysis, specific rotation and ^{1}H and ^{13}C NMR spectroscopy revealed that the structures of polysaccharides from these two different media are essentially identical. The polysaccharide is composed of a hexasaccharide repeating unit and thus known as kefiran [1][2]. The weight-average molecular-weight and the z-average radius of gyration of a purified sample from the rice culture broth was determined to be 7.6 X 10^5 g/mol and 39.9 nm, respectively, by gel permeation chromatography equipped with a multi-angle laser-light-scattering photometer. Changes in blood pressure and serum components were examined for SHRSP/lzm rats, using a dose of 100 mg kefiran/kg rat. A suppression of the increase in the blood pressure was observed in these rats after 30 days. This activity will be discussed in terms of the concentration of serum components of the rat, especially lipid components such as cholesterols, triglycerides and free fatty acids.

[1] T. Mukai, T. Toba, T. Itoh, S. Adachi, *Carbohydr. Res.*, 204 (1991) 227-232.
[2] L. Micheli, D. Uccelletti, C. Palleschi, V. Crescenzi, *Appl. Microbiol. Biotechnol.*, 53 (1999) 69-74.