

The Outer Membranes of *Brucella* spp. Are Resistant to Bactericidal Cationic Peptides

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Abstract of:

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The actions of polymyxin B, rabbit polymorphonuclear lysosome extracts, 14 polycationic peptides (including defensin NP-2, cecropin P1, lactoferrin B, and active peptides from cationic protein 18 and bactenecin), EDTA, and Tris on *Brucella* spp. were studied, with other gram-negative bacteria as controls. *Brucella* spp. were comparatively resistant to all of the agents listed above and bound less polymyxin B, and their outer membranes (OMs) were neither morphologically altered nor permeabilized to lysozyme by polymyxin B concentrations, although both effects were observed for controls. EDTA and peptides increased or accelerated the partition of the hydrophobic probe *N*-phenyl-naphthylamine into *Escherichia coli* and *Haemophilus influenzae* OMs but had no effect on *Brucella* OMs.

Since *Brucella* and *H. influenzae* OMs are permeable to hydrophobic compounds (G. Martínez de Tejada and I. Moriyón. J. Bacteriol. 175:5273-5275, 1993) the results show that such unusual permeability is not necessarily related to resistance to polycations. Although rough (R) *B. abortus* and *B. ovis* were more resistant than the controls were, there were qualitative and quantitative differences with smooth (S) brucellae; this may explain known host range and virulence differences. *Brucella* S-lipopolysaccharides (LPSs) had reduced affinities for polycations, and insertion of *Brucella* and *Salmonella montevideo* S-LPSs into the OM of a *Brucella* R-LPS mutant increased and decreased, respectively, its resistance to cationic peptides. The results show that the core lipid A of *Brucella* LPS plays a major role in polycation resistance and that O-chain density also contributes significantly. It is proposed that the features described above contribute to *Brucella* resistance to the oxygen-independent systems of phagocytes.

The Human Entorhinal Cortex: A Cytoarchitectonic Analysis

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The entorhinal cortex of man is in the medial aspect of the temporal lobe. As in other mammalian species, it constitutes an essential component of the hippocam-

pal formation and the route through which the neocortex interacts with the hippocampus. The importance of knowing its architecture in detail arises from the possibility of extrapolating it to experimental findings, notably in the nonhuman primate. We have investigated the cytoarchitectonic features of the human entorhinal cortex by using as a base our previous study (D.G. Amaral, R. Insausti, and W.M. Cowan [1987] J.

Comp. Neurol. 264:326-355) of the nonhuman primate entorhinal cortex. We prepared serial sections of the temporal lobe from 35 normal brains. Thionin- and myelin-stained series were made of all cases. Sections spaced 500 μm apart through the full rostrocaudal extent of the entorhinal cortex were analyzed. The human entorhinal cortex is made up of six layers, of which layer IV does not appear throughout all subfields of the entorhinal cortex. The overall appearance resembles that of the adjacent neocortex in lateral and caudal portions. In harmony with general structural principles in the nonhuman primate entorhinal cortex, our analysis supports the partitioning of the human entorhinal cortex into eight different subfields. (1) The olfactory subfields (EO), the rostralmost field, is little laminated. (2) The lateral rostral subfield (ELr), laterally located, merges with the laterally adjacent perirhinal cortex. (3) The rostral subfield (ER) is between EO and

ELr, with better differentiation of layers II and III than EO. (4) The medial intermediate subfield (EMI) is located at the medial border. (5) The intermediate field (EI) is a lateral continuation of EMI; lamina dissecans (layer IV) can be best appreciated in this field. (6) The lateral caudal subfield (ELc) laterally borders on EI as a continuation of ELr. (7) The caudal subfield (EC) lies caudal to the beginning of the hippocampal fissure, with a distinctive, clear space (Vc) between layers V and VI. (8) The caudal limiting field (ECL) forms the caudal termination of the entorhinal cortex. Thus our parcellation of the entorhinal cortex in man is largely parallel to that arrived at in the monkey. This close homology provides a rational basis for the application to clinical problems of anatomical and functional information obtained in experimental work in nonhuman primates.

PATOLOGIAS MACROSCOPICAS



HISTORIA CLINICA:

Mujer de 47 años diagnosticada en otro centro de cistoadenoma mucinoso de ovario hace 6 años. Actualmente presenta en toda la cavidad abdominal múltiples implantes quísticos de tamaño variable y contenido mucoide. Se le extirpa el epiplon.

FOTO MACROSCOPICA:

El epiplon presenta múltiples cavidades quísticas que oscilan entre 5 y 30 mm de contenido gelatinoso filante.

DIAGNOSTICO:

Pseudomixoma Peritonei.

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