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Research Article

Proliferation Effect on Genes of Intracellular Bacteria

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ABSTRACT

Alkaline peptone broth was a medium for increasing the numbers of selected bacteria. These can multiply under alkaline conditions (etc. *Vibrio cholerae*) and cannot grow under high pH. The method involved stoichiometric test of the constituent of prokaryotic microorganisms in plants. The factors studied involve number of structures, different from round, to columnar to helical. The results showed the colonies in the Broth had developmentally complex Streptomyces on solid medium contained in two regions.

Keywords: Proliferation; Bacteria; Intracellular; Broth

INTRODUCTION

Phase 1 deposits such as round found in substrate mycelium region of the Broth with exterior development of Phase 2 spiral mycelium. It concluded the first structure had overproduction of coli or helical cells in yeast exopolyohosphatase. This reduced the resistance of the alkaline medium to H_2O whose polyphosphate kinase gene disrupted in the Broth. The bacteria symbiotic characterized based on composition of phyla in stoichiometric test. These grown in the laboratory [1]. *S. aureus* is the most frequently isolated pathogen in implant-associated bone infection. Although *S. aureus* was categorised as an extracellular pathogen due to its ability to colonise extracellular bone matrix and to form biofilm, there is a large body of evidence indicating that *S. aureus* can also internalise and survive within host cells thus acting as a facultative intracellular pathogen. This behaviour was implied as an immune-evasion strategy to escape extracellular host antibacterial defence mechanisms such as recognition by professional phagocytes, antibodies, cationic peptides and subsequently treatment with antibiotics. Consequently, such an immune-evasion strategy plays a significant role in persistence and recurrence of infection. The common bacterial internalisation process requires the involvement of cytoskeletal elements, including actin microfilaments, microtubules and clathrincoated pits. In this context, actin microfilaments play a significant role in the invasion process. *S. aureus* uses its adhesins, mainly fibronectin binding proteins A and B (FnBPA, FnBPB), to invade nonprofessional phagocytes such as epithelial and endothelial cells, fibroblasts, osteoblasts and keratinocytes by a zipper-type mechanism through fibronectinbridging between FnBPs and α5β1 integrins on the host cell surface. Furthermore, the ability of *S. aureus* to persist in an intracellular compartment has been attributed to the formation of Small Colony Variants (SCVs) that show increased uptake by non-professional phagocytes, resistance to intracellular defences, and reduced stimulation of host defences. Internalised *S. aureus* could subsequently escape from the endocytic vesicle into the host cell cytosol through the action of the pore-forming α-haemolysin under the control of the accessory gene regulator, agr.

Although many studies have focused on the invasion of epithelial cells by *S. aureus*, little is known about its further proliferation and survival in the intracellular milieu. The intracellular invasion of *S. aureus* is a virulence factor to escape antibiotic treatment. Gentamicin and rifampicin are important antibiotic agents in the treatment of implant-related *S. aureus* infections. Gentamicin was previously shown to be able to kill the Control of intracellular *S. aureus* by antibiotics facultative intracellular bacterium Listeria monocytogenes in the intracellular compartment of mouse peritoneal macrophages only when it was used in concentrations of at least 50 μg/mL. Moreover, a concentration of 10 μg/mL gentamicin was not sufficient for rapid eradication of intracellular *S. aureus* from human osteoblasts. However, 7.5 μg/mL rifampicin was able to control intracellular *S. aureus* survival 20 h after infection. In this context, the purpose of the study was to investigate firstly

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whether *S. aureus* is not only able to invade but also to proliferate within osteoblasts, secondly to delineate the mechanism of invasion and thirdly to clarify whether rifampicin or gentamicin can inhibit intracellular proliferation and survival of *S. aureus* in the SAOS-2 osteoblast-like cell line in an *in vitro* infection model.

MATERIALS AND METHODS

Eukaryotic structure

The length of DNA in the nucleus was much greater than the size of the compartment in containment. This condensed in a kind of manner [2]. Nitrate broth bacteria (etc. *Pseudomonas aeruginosa*) with enzyme systems to nitrate the acceptor. The product of the reaction was nitrite.

Bacteria characterization

Linear plasmids such as columnar mycelium found in spirochaetes, gram-positive bacteria, and gram-negative bacteria. Two structural kinds of bacterial linear DNA characterized the bacteria. Phase I and II structures produced in one or two glycogen enzyme isoforms. Phase II compared with phase I for the deposit's occurrences in the upper regions of aerial hyphae [3].

Kinase reactions

The effect of H_2O by cells studied for overproduction using stoichiometric test of exopolyphosphatase (PPX). This attributed to reduce the levels of regulatory phase induced genes. Linear genomic structures compared with common bacteria such as round and helical. However, the molecular biology explained for origin of linear DNA in bacteria for presence of eukaryotes [4].

Packing ratio

The degree the DNA condensed studied using colorimetric test known as the packing ratio. This was the length of DNA divided by the length into the packaged. In the colorimetric test if the test was negative, it suggested the nitrite reduced or reduced greater than the nitrite [5].

Procedure

To nitrate broth after 48 hours of incubation, added 0.2 ml of reagent (Solution A), a mixture of sulfanilic solution and then 0.2 ml of dimethyl-alpha-napthylamine reagent (Solution B). If the nitrite was present a red color this was a positive test for nitrate reduction [6].

RESULTS AND DISCUSSION

The formation showed second dendrite enzyme isoform, GlgBII. This indicate using colometric tests for the second isoform, glgBII [7]. The second subject the column structure included application of PPK for nucleosed triphosphate production. *E. coli* PPK or helical found to catalyze the kination of nucleoside diphosphate [8].

Linear genomic structures commonly found in the culture media common in bacteria. However, the interconversion between circular (round) and linear (column) isomers the (Hinnebusch J) [9].

Overall packing ratio

In its most condensed state during mitosis, the DNA was about 2 μm in length. This gave a packing ratio of 7000 (14000/2) where genome size of the *E. coli* (helical) was 14000 μm (Figure 1).

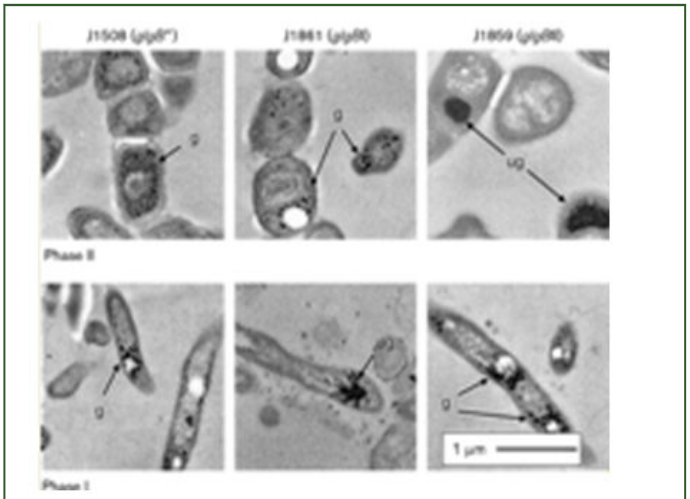

Figure 1: Culture media shown for measurement of overall packing ratio.

As shown from Figure 1 initially round was present but it had overproduction of columnar structures due to helical at the exterior. This indicated neither newly developed genes had glycogen depositions.

Glycogen metabolism

The Glycogen was highly dendritic, starch-like glucose polymer with approximately 95% α-1,4 helical linkages and 5% α-1,6 dendritic columnar linkages. In bacteria, three enzymes typically catalyze, glycogen biosynthesis from glucose 1-phosphate: Glycogen synthase (GlgA) solution A and glycogen dendritic enzyme (GlgB) solution B cultures (Figure 2).

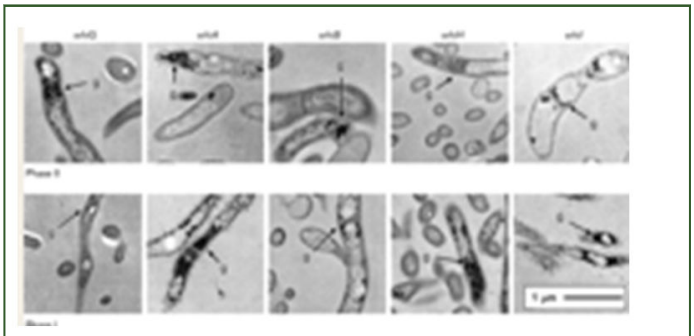

Figure 2: Phase after 2 days showing normal round glycogen depositions.

The cohesion of non-dendritic polysaccharides in their substrates shown in Figure 2 after 2 days.

The DNA not packed directly into final structure. Instead, it contained hierarchies of organization. The first level of packing achieved by helical DNA wrap around a protein. (Eukaryotic Chromosome Structure, n.d.)

Gene in helical *E. coil*

PPX1 overproduced cells showed no cellular poly (P) accumulation as in round and columnar and the same characteristics. The lack of resistance to an oxidant (H_2O) to a redox-cycling compound and to osmotic challenge.

Colony growth

Spore germination after 2 days gave rise to a fuzzy white growth of aerial hyphae (often coiled etc. helical. The initial multigenomic apical compartments of aerial hyphae then undergo multiple saptation to give rise to linkages of unigenomic spores.

DNA structure

This structure was invariant. The second level packing of its coiling of round by helical structure known as the 30 nm fiber found in both interphases.

Microscopy

This revealed two localized phases namely round and helical during colony development. Phase I or non-linear deposits found in a region of the substrate mycelium at exterior of aerial mycelium and phase II deposits were present in the apical compartments of aerial mycelium as it undergoes sporulation septation. The structure increased the packing ration to about forty. The final packaging occurs when the fiber organized for a final packaging ratio of about one thousand in interphases (Table 1). In the glgBI phase 2 species, phase 1 deposits small numbers of large irregular round instead of large numbers of dispersed small deposits. This occupied much of the volume of the hyphae at the intracellular of the substrate and aerial mycelium.

Table 1: C-Value descriptions shown of the number of genomes.

Species	Kilobases genome
E. coli (Helical)	4.5×10^3
Drosophila (Small rounded)	1.7×10^5
Yeast (Large rounded)	2.0×10^6
Aribidopsis (Column)	7.0×10^4

CONCLUSION

To overcome these unstable features of ppk, plasmid system overproduced recombinant yeast exopolyphospatase (PPX_1). This was to remove as much of cellular poly (P) as possible. Eukaryotic cells consisted of DNA-protein complex organized in compact manner to allow amounts of DNA. This stored in the nucleus of the cell. The nucleosome consisted of about two hundred wrapped helical around proteins H_2A, H_2B, H_3 and H_4. These were basic proteins conserved in a function. This usually written as the amount of DNA per cell in number of kilobases known as the C-value. Even though eukaryotic organisms had 2-10 times genes. These genomes inherited in the complete DNA component of a species.

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