

## Do bacterial cultures spread messages by emission of electromagnetic radiations?

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**Abstract** – It has been demonstrated that two bacterial cultures grown in various given nutrient media and separated by clear glass septum influenced each other's growth parameters. The effect of such interactions depended on growth medium and concentration of cells. It is likely that there was an electromagnetic link between the jointly cultivated cultures.

**Key words:** *Escherichia coli*, growth parameter, light emission.

### INTRODUCTION

It is well known that all living organisms emit a weak biological radiation also named as mitogenetic radiation (Gurvitch, 1926), secondary biogenic radiation (SBR) (Kuzin *et al.*, 1995) or physical signal (Matsushashi *et al.*, 1995), which has been detected by using biological detectors and modern photomultiplier techniques (Chang *et al.*, 1998). The main problem is now related to the question of whether biological radiation carries information concerning communication of cells and different aspects of their life.

Up to now, progress in understanding intercellular interactions of bacteria is connected with investigation of prokaryotic signalling molecules (Karpelyants and Kell, 1996). However, there is increasing evidence for widespread importance of physically mediated communication in bacterial cultures for some events, including cell division (Nikolaev, 1992), adaptation of microorganisms to stress conditions (Matsushashi, 1996), adhesive capacities of cells (Nikolaev, 2000).

The present work reports some evidence of distant interactions in regulation of bacterial growth of *Escherichia coli* cultures without any chemical or mechanical contacts between them.

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