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## Spent culture supernatant (SCS) from *Lactobacillus sucicola* BGLMM7 inhibits proliferation of tumor cardiac myocytes

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**Statement of the Problem**: *Lactobacilli* have been shown to reduce proliferation of many cancer cell types, including liver, cervival and intestinal epithelial cells. However, their role in muscle tumor proliferation has not been described yet.

**Aim:** The aim of this research was to test the effect of spent culture supernatant (SCS) of *Lactobacillus sucicola* BGLMM7 on proliferation of HL-1 cells, which are immortalized mouse tumor cardiac myocytes.

**Methodology:** Propidium iodide staining was used to analyze cell cycle by flow cytometry, while immunofluorescence was used to visualize the expression of mitotic markers, phospho histone H3 (Ser10) and cyclin dependent kinase 1 (cdk1) as well as Beclin1, which is known as tumor suppressor and its expression is decreased in many tumors. Additionally, level of Cyclin B1 (CCNB1), which is required for mitosis, was tested by Western blot.

**Findings:** Our results showed arrest of HL-1 cells in G2/M phase of cell cycle after treatment with BGLMM7 SCS for 18 hours. This was followed by a decrease of the expression of phospho H3 (Ser10) and CCNB1 expression and allocation of cdk1 from nucleus to cytoplasm. Additionally, treatment with BGLMM7 SCS increased the number of Becn1-positive dots in cytoplasm.

**Conclusion & Significance:** This study showed a potential of BGLMM7 SCS to block proliferation of cardiac muscle tumor cells and this effect could potentially be associated with Becn1 induction. Our current research is oriented towards estimation of the effects of BGLMM7 SCS on proliferation of myoblasts using mouse C2C12 cell line, in order to test the selectivity of the extract towards tumor cell lines.

## Biography

Jovanka Lukic has completed her PhD from the University of Belgrade, Serbia and continued her Postdoctoral studies in the IMGGE. She is actively involved either as a participant or a leader in international projects with the aim of exploring the effect of probiotics as well as postbiotics on immune response, physiology and pathogen elimination both *in vitro* using cell lines and *in vivo* in fish and in rats as model systems.

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