

SERBIAN ASSOCIATION FOR CANCER RESEARCH
4TH CONGRESS OF SDIR:
BRINGING SCIENCE TO ONCOLOGY
PRACTICE: WHERE IS SERBIA?

ABSTRACT BOOK



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with international participation

“BRINGING SCIENCE TO ONCOLOGY PRACTICE: WHERE IS SERBIA?”

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dr sc. med. Mirjana Branković-Magić

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Physicochemical changes in experimental fibrosarcoma tumors of hamsters treated with established non-oncologic anti folate drugs

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Background: The anticancer effects of metformin, caffeine, itraconazole and nitroglycerin, which are established non-oncologic drugs with anti folate effects, were investigated in the present study. The weight, diameter, volume, density, surface and surface to volume ratio of experimental fibrosarcoma tumors were investigated in hamsters treated with metformin, caffeine, itraconazole and nitroglycerin. **Material and Methods:** The hamsters were injected with BHK-21/C13 cells in order to induce fibrosarcoma, and the animals were treated daily with metformin, caffeine, itraconazole, nitroglycerin or the combination of the two drugs. Subsequently, blood samples were obtained for biochemical analyses and the tumors were excised, weighed and measured. Vital organs were toxicologically tested. **Results:** The results revealed that the combination of metformin with caffeine, metformin with itraconazole and metformin with nitroglycerin and nitroglycerin significantly altered the physicochemical characteristics of the hamster fibrosarcoma tumors, including absolute and relative weight, volume, density, length, surface area and surface to volume ratio, without indications of toxicity. **Conclusion:** In conclusion, the administration of metformin in combination with caffeine, itraconazole or nitroglycerin may inhibit the growth of fibrosarcoma tumors in vivo, suggesting that this may be an effective and safe approach as a nontoxic anticancer adjuvant and relapse prevention therapy.

Keywords: hamsters, fibrosarcoma, metformin, caffeine, itraconazole, nitroglycerin