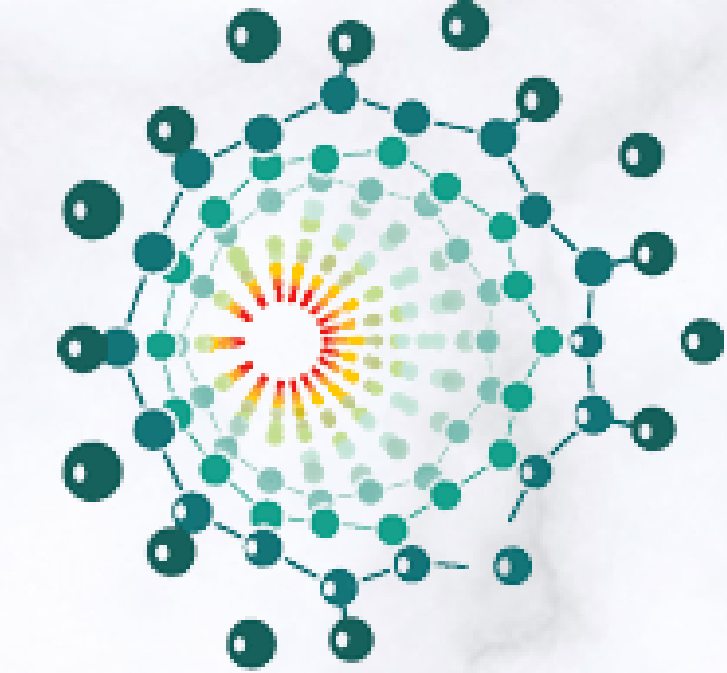


IN VITRO CYTOTOXIC RESPONSE OF THE BEA ZEOLITE/ACETAMIPRID SYNERGISTIC ACTION



INTRODUCTION

The increasing use of pesticides, due to the accelerated food production, has led to changes in the entire ecosystem. This set them recognizable as serious pollutants for the human health. Recently, insecticides from the group of neonicotinoids, have been in the public spotlight due to their harmfulness to the bees. They are systemic pesticides, which in contrast to contact pesticides, who remain on the surface of the treated leaves, systemically reach the inner parts of the plant. Taken by the plant, they also come into contact with humans. Most of them do not decompose microbiologically, so different methods and materials are being developed to remove them from the environment.

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for molecular medicine and stem cells research.

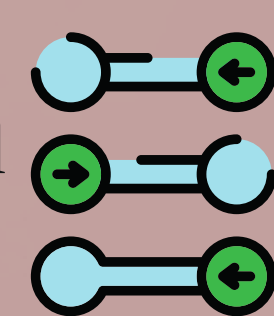
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OBJECTIVE

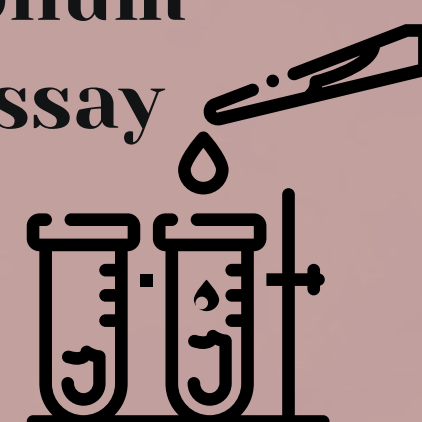
The aim of this study was to examine the cytotoxic and synergistic effects of insecticide acetamiprid (P) and BEA zeolite, in pristine (Z) and modified (oxZ and citZ) forms on two types of cell lines, MRC-5 human fibroblast and HCT116 human colorectal carcinoma.

METHODS

- Ion-exchange method

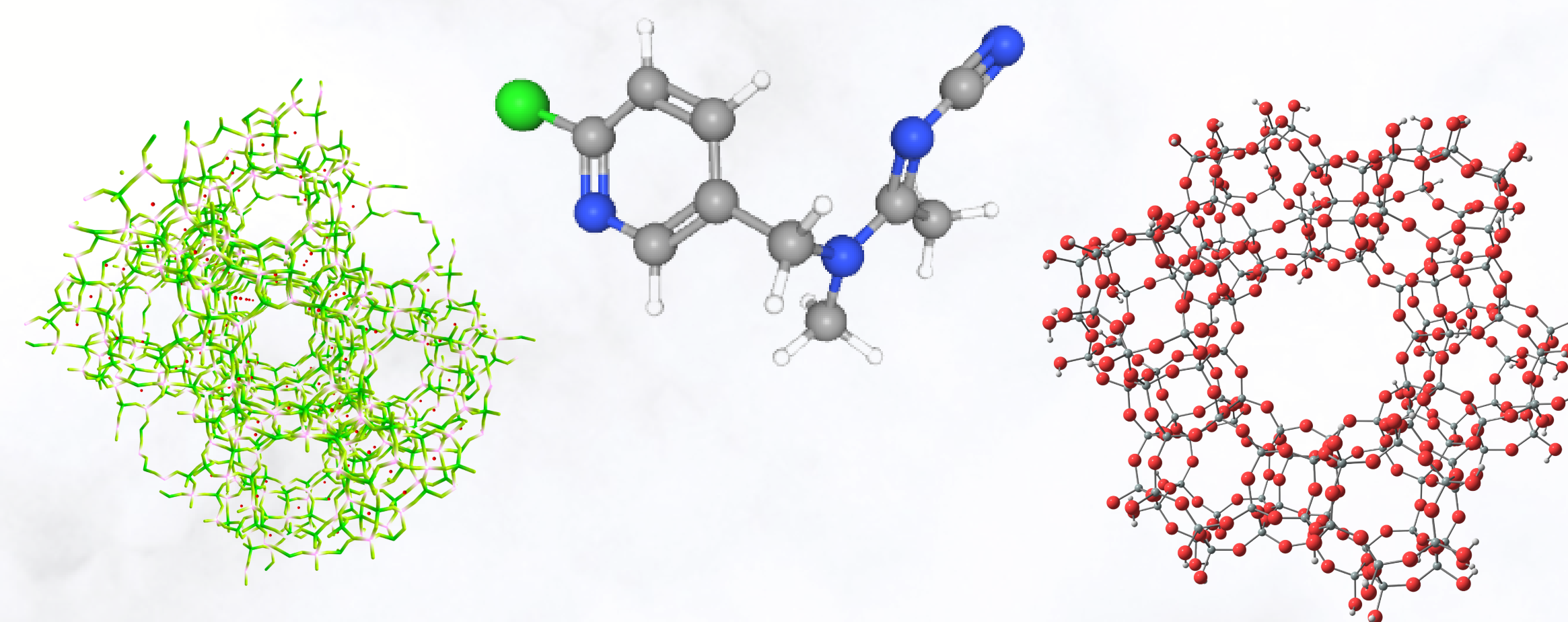
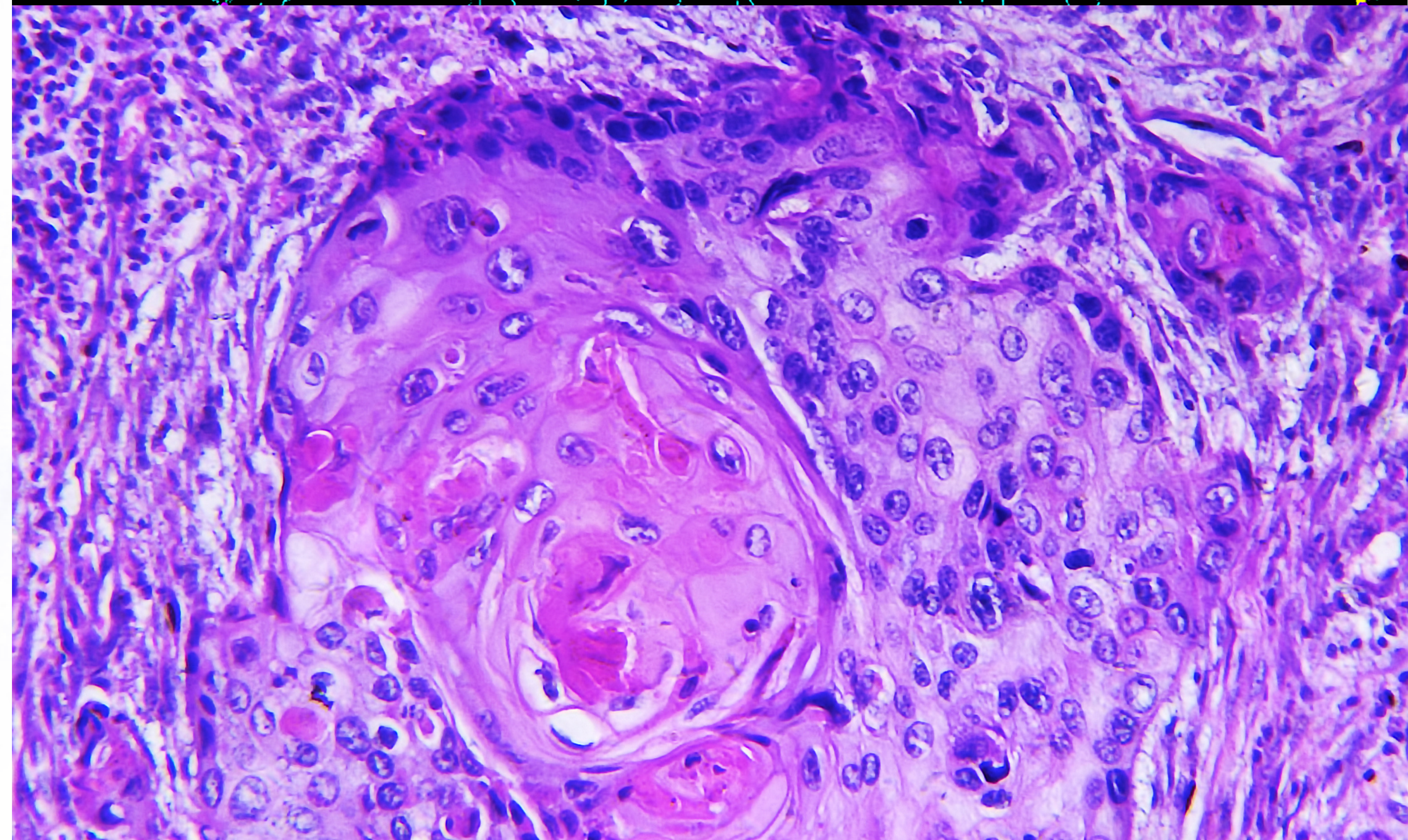
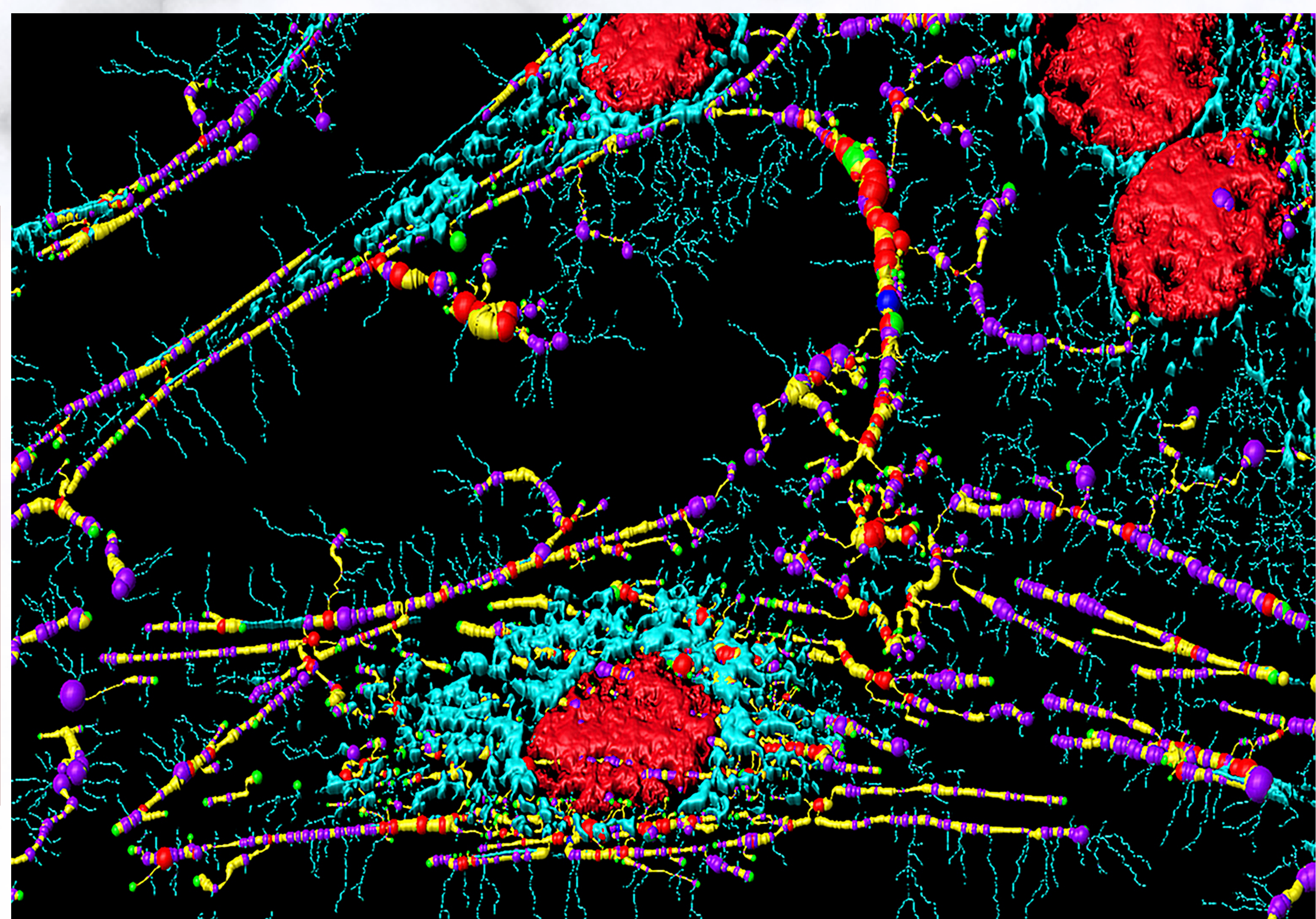
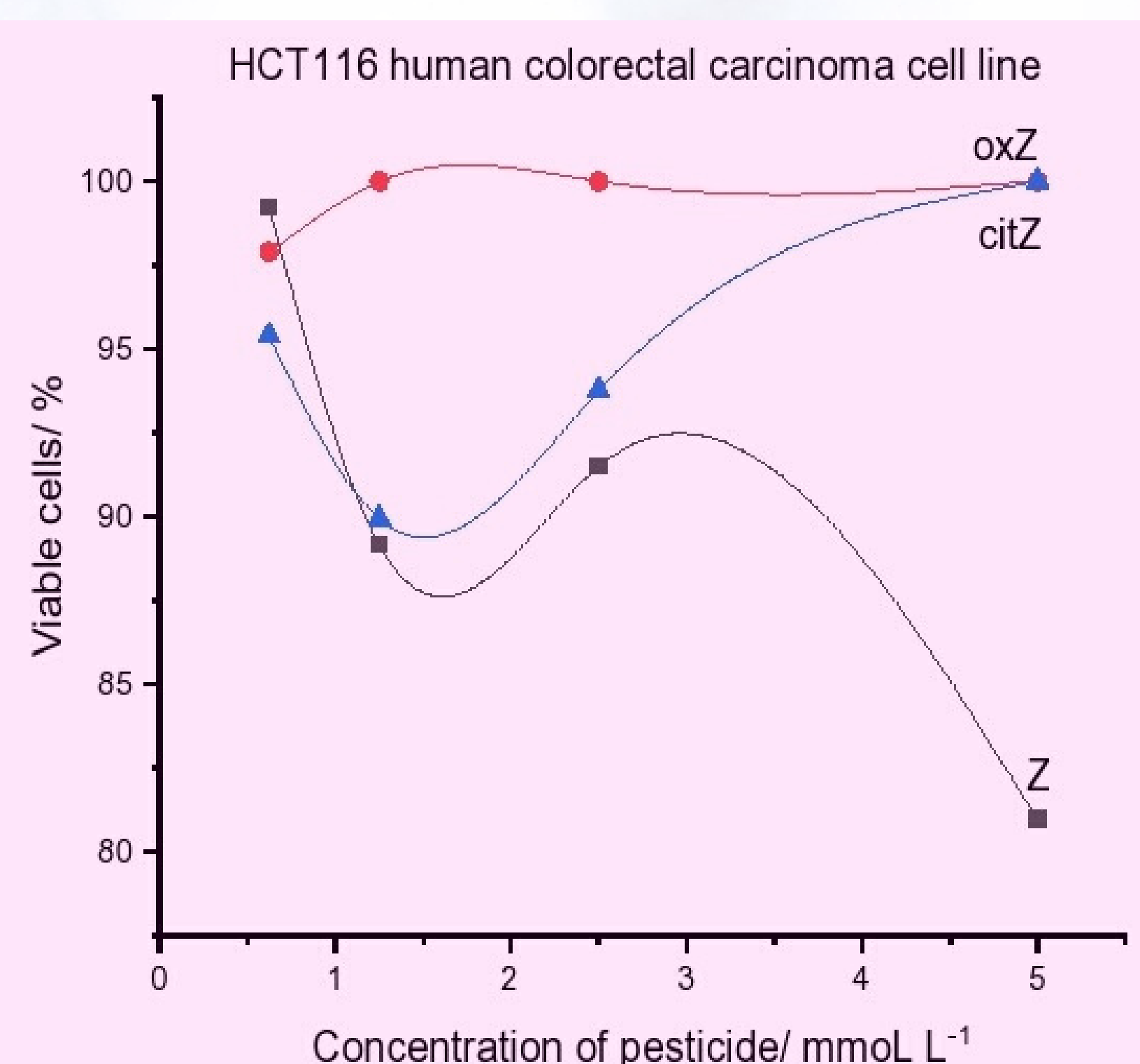
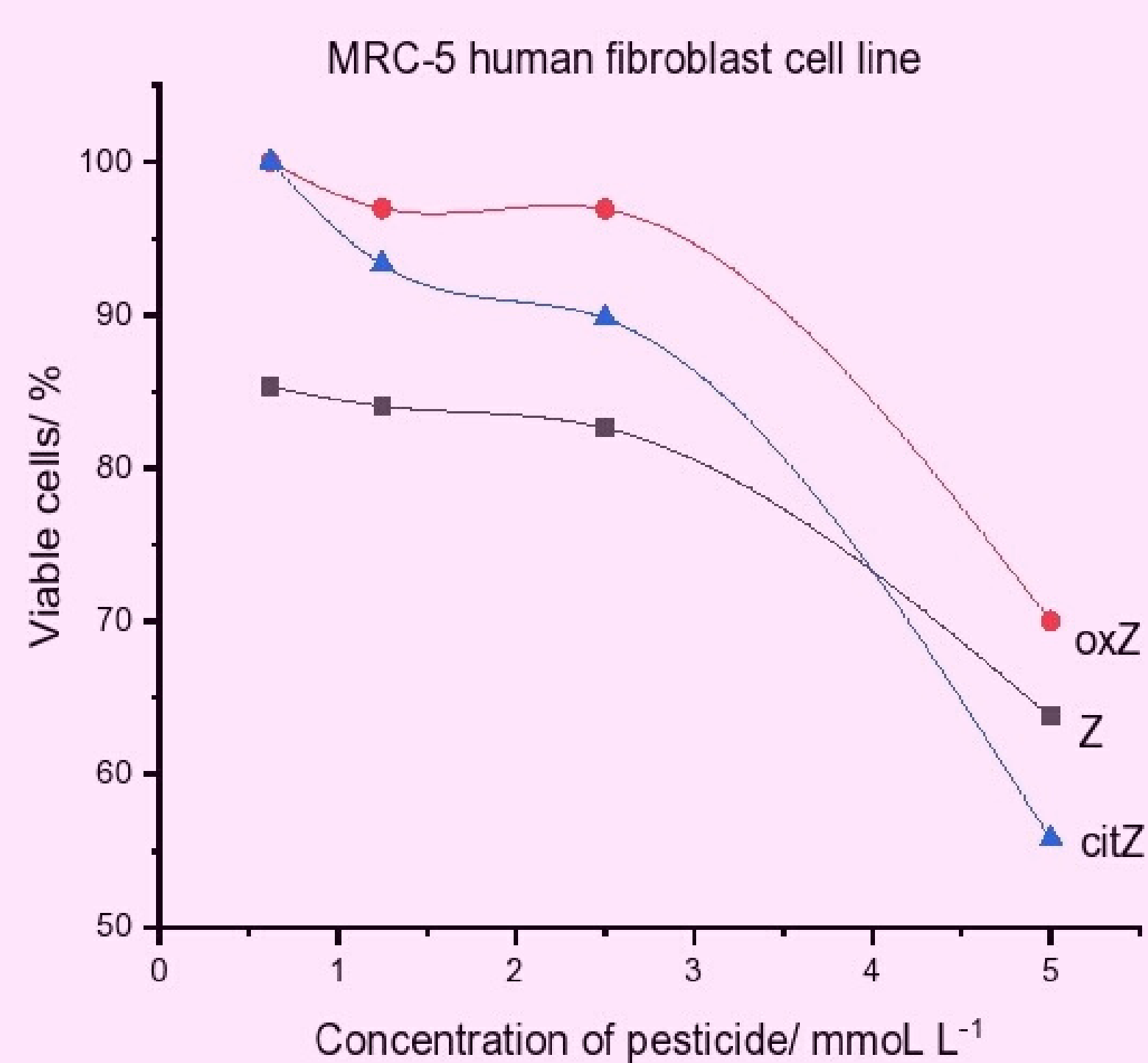


- Methylthiazol-tetrazolium (MTT) colourimetric assay



RESULTS

- BEA zeolite in presence of acetamiprid gives no significant cytotoxicity to the MRC-5 human fibroblast cells.
- Modified zeolites reduce pesticide toxicity more than BEA zeolite itself.
- Cancer cells were more sensitive to the presence of pesticide.
- Cell viability at the highest used pesticide concentration was lower in the all samples in comparison to MRC-5 human fibroblast cells.



LITERATURE

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