



Test Report

Cytotoxicity Test of A New JM Nanocomposite Material on Human Fibroblast

Test Reagent

New JM nanocomposite material

Project Implementation Unit

Cell Biology Laboratory, Cathay Medical Research Institute, Department of
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Testing Laboratory

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Project Personnel

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Principal Investigator

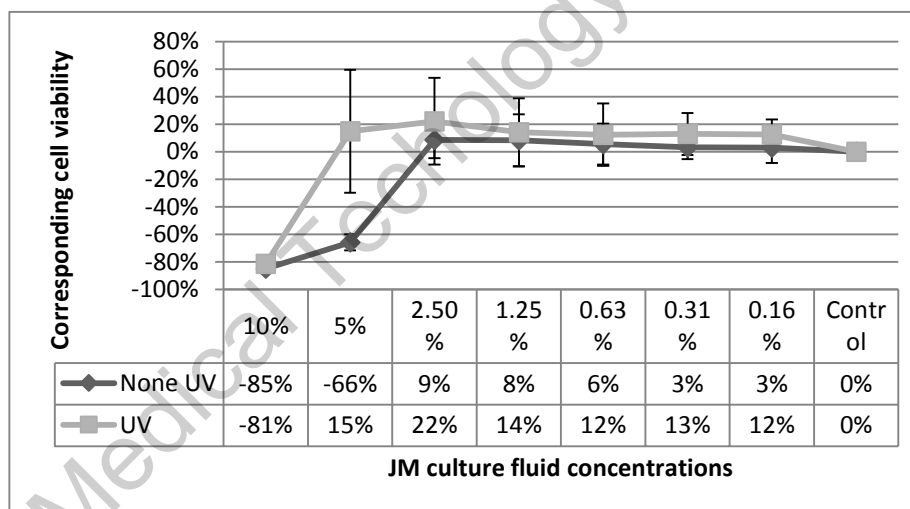
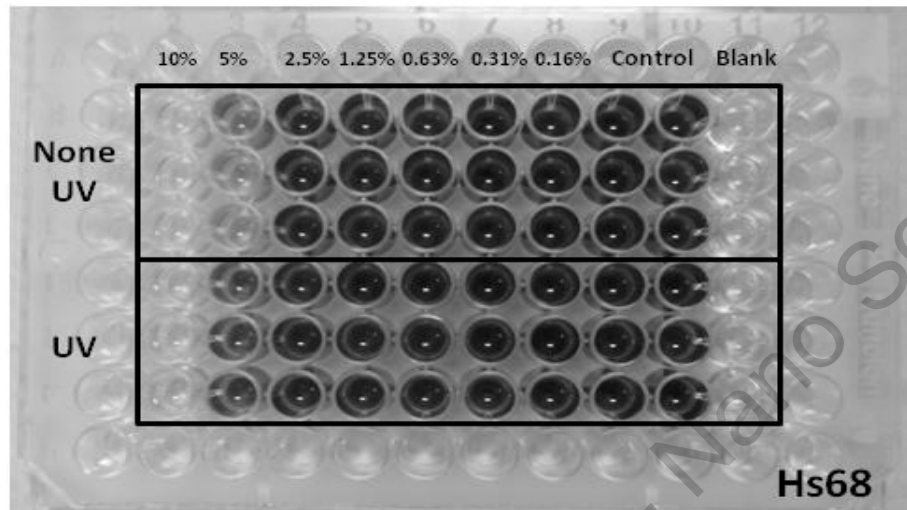
Qing-dong Ling

Signature: _____



Test Results

Short-term test

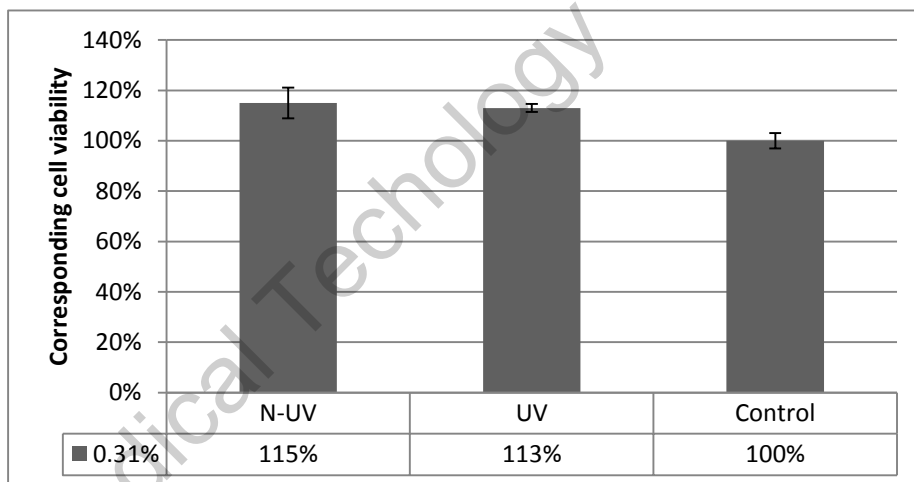
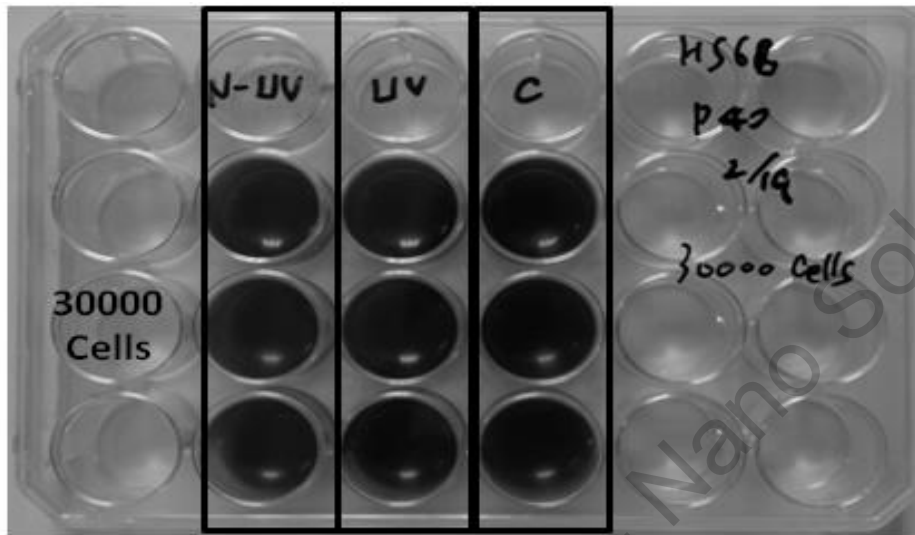


In this experiment, the 10% JM with the UV and without UV irradiation showed significantly reduced cell viability (81% and 85%, respectively) and high cytotoxicity compared with the control group. For the 5% JM, the cell viability in the JM without UV irradiation was reduced significantly (up to 66%). In the JM with UV, cell viability was only slightly reduced (9%); thus, the cytotoxicity was significantly reduced. When the concentration was reduced to $\leq 2.5\%$, the cell viability of the JM with and without UV was similar to that of the control group, displaying no apparent cytotoxicity.



Long-term test

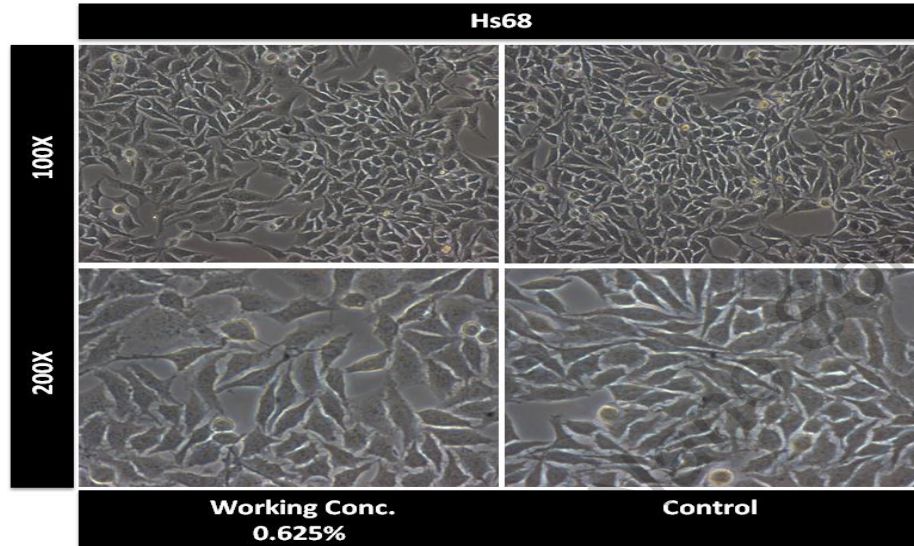
Non-UV UV Control



In the long-term experiment, cells cultivated in the 0.625% JM culture fluid with and without UV exposure did not show any decrease in cell viability after 5 d. Thus, there was no cytotoxicity or effect on cell growth and proliferation.



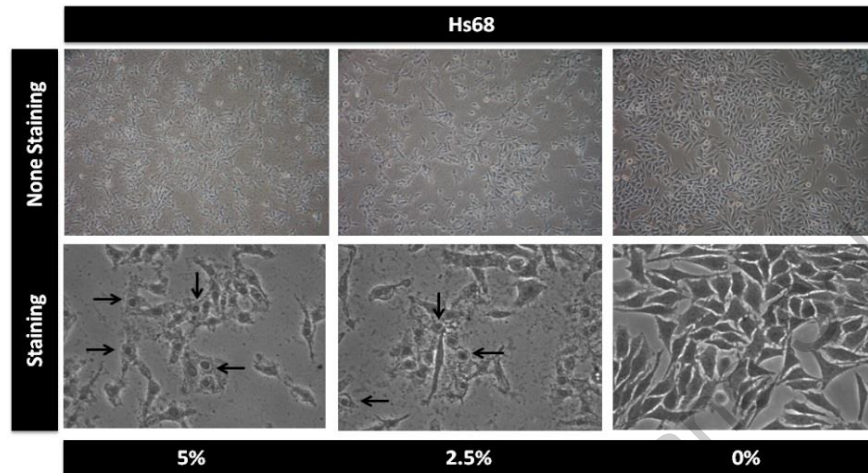
Cell morphology comparison



- (1) Cell morphology comparison of the JM-treated working concentration (0.635%) and control group (0%) at various magnification levels.
- (2) HS68 cell morphology remained intact and showed no difference under the various concentrations.



Stain test



- (3) Top-left, Top-center, and top-right show the results of the nonstained cells under various concentrations.
- (4) After staining, at 5% (bottom-left) and 2.5% (bottom-center) concentrations, the cell nucleus was clearly stained (indicated by the arrows in the diagram), indicating that the cell membrane was broken and the dye had penetrated the cell nucleus.
- (5) For the 0% JM (bottom-right), no apparent cell nuclei were observed, indicating that the cell membrane was intact.