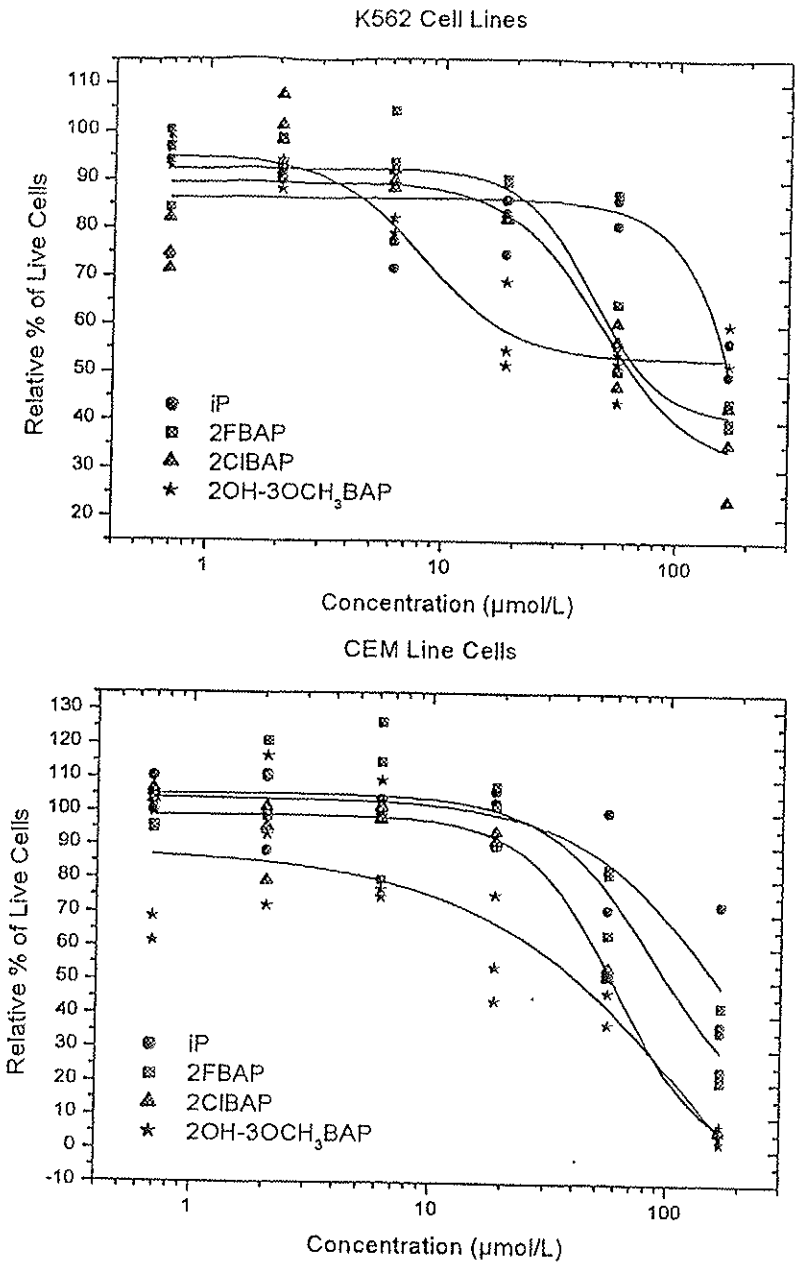



**Figure 1:** Inhibition of growth of K562 (A) and CEM (B) tumour cell lines by tested compounds. Cytotoxicity was determined in the presence of Calcein AM. Activity is presented as percentage of maximal activity (in the absence of inhibitors). iP: isopentenyladenine; 2F BAP: 6-(2-fluorobenzylamino)purine; 2Cl BAP: 6-(2-chlorobenzylamino)purine; 2OH-3$OCH_3$ BAP: 6-(2-hydroxy-3-methoxybenzylamino)purine.

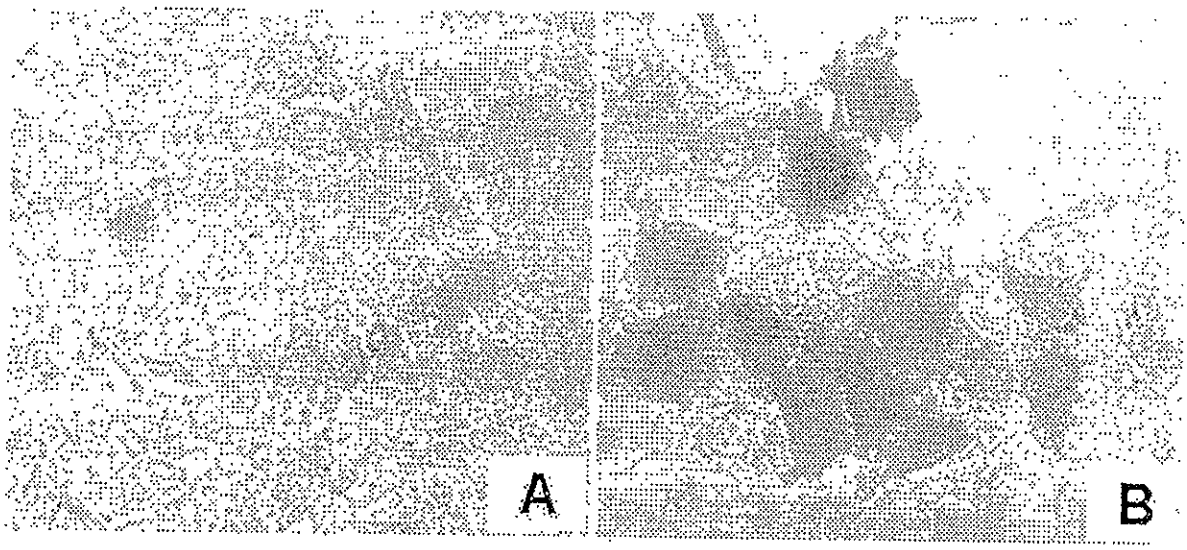



**Figure 2:** Senescent Cells in Culture of Human Fibroblasts (B) (the other cells (A)) stained blue due to the action of β-galactosidase on the substrate X-gal (5-bromo-4-chloro-3-indolyl-β-D-galactopyranosid) (1 mg/ml).

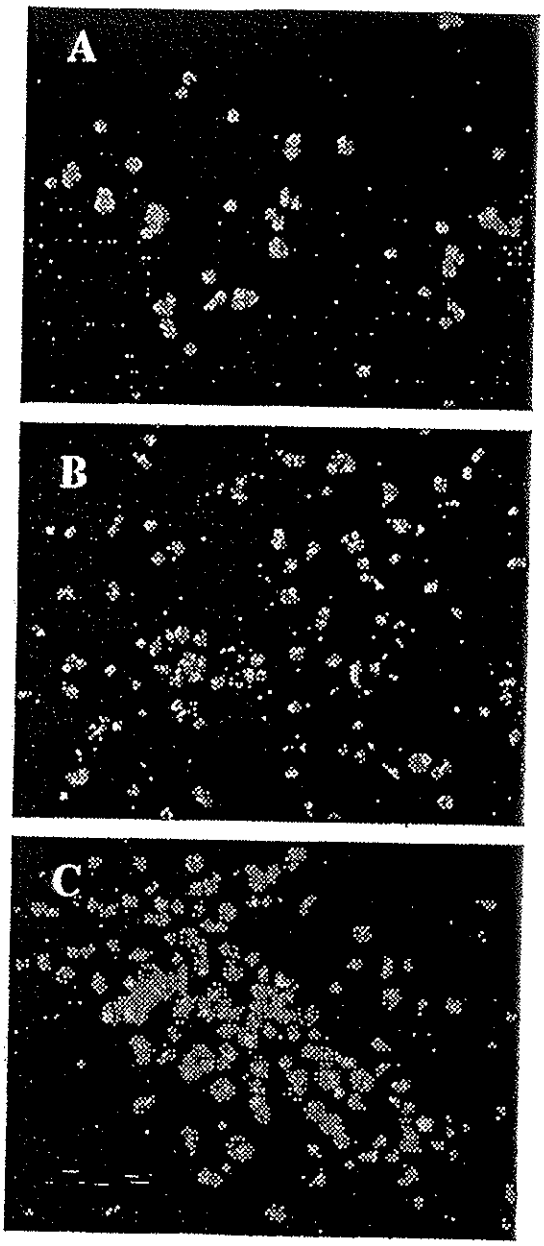



**Figure 3:** Induced Apoptosis in Tumour Cells MCF-7 cell line after application of cytokinin 6-(2-hydroxy-3-methoxybenzylamino)purine. **A** MCF-7, apoptotic cells: 6 h, 12, 20μM, **B** MCF-7, secondary necrotic cells (i.e. necrosis following apoptosis), 12 h, 12, 40 μM; **C** MCF-7, necrotic cells, 24h, 12, 40μM. Anexin FITC V (Mol. Probes) and propidium iodide staining: anexin – green, PI – red.

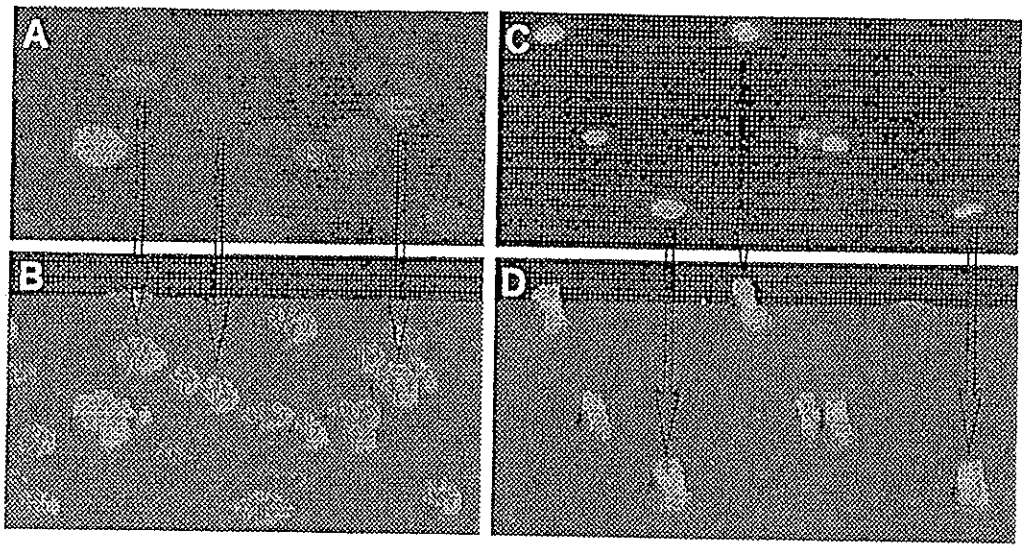



Figure 4: Apoptotic cells detection using Anexin (green fluorescence) and Hoechstem 33285 (blue fluorescence) staining. Analysed using "Olympus image analysis" after treatment of MCF-7 tumour cells by 6-(2-hydroxy-3-methoxybenzylamino)purine. A,B – control cells without treatment; C,D – apoptotic cells (condensation of chromatin); A,C – fluorescence microscopy; B,D –fluorescence image analysis.

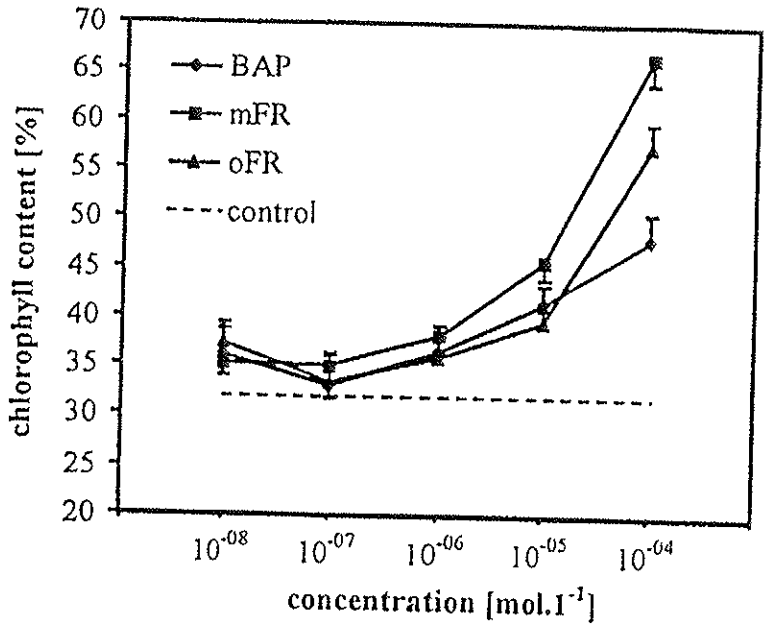



**Figure 5:** Effect of tested compounds on retention of chlorophyll in excised wheat leaf tips. Values are expressed as % of initial chlorophyll content of fresh leaves before the incubation. Error bars show standard deviations of the mean for 5 replicate determinations. Dashed line indicates control incubation without any cytokinin, which was 31,7 ± 0,9.

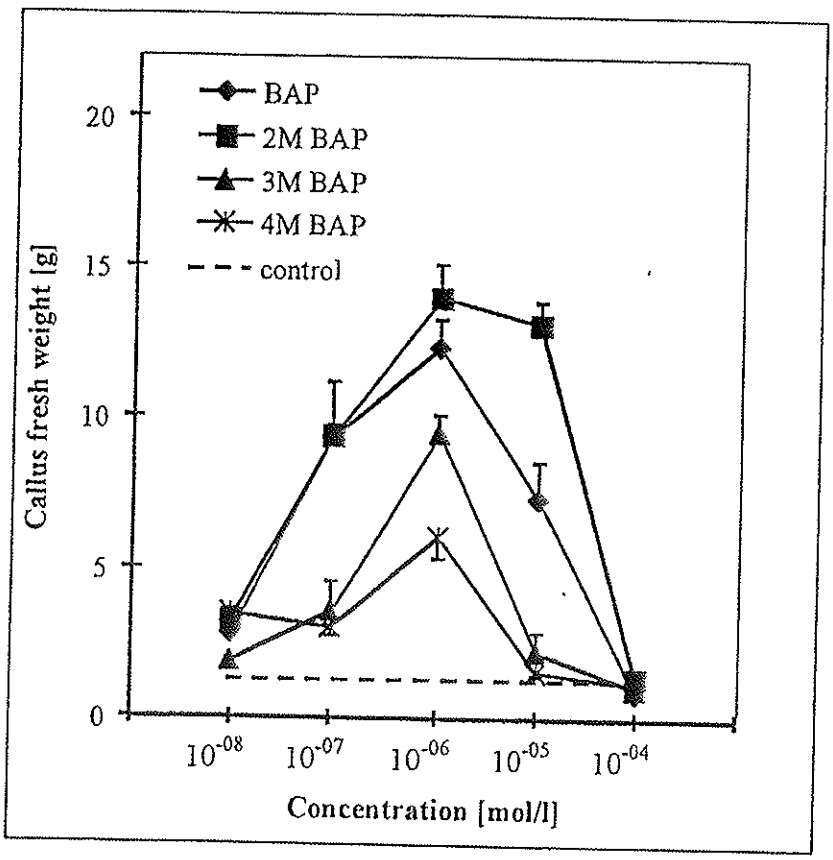



**Figure 6:** Effect of tested compounds on fresh weight yield of tobacco callus culture. Error bars show standard deviations of the mean for 5 replicate determinations. Dashed line indicates the value for the control treatment without any cytokinin, 2,2 ± 0,4 g.

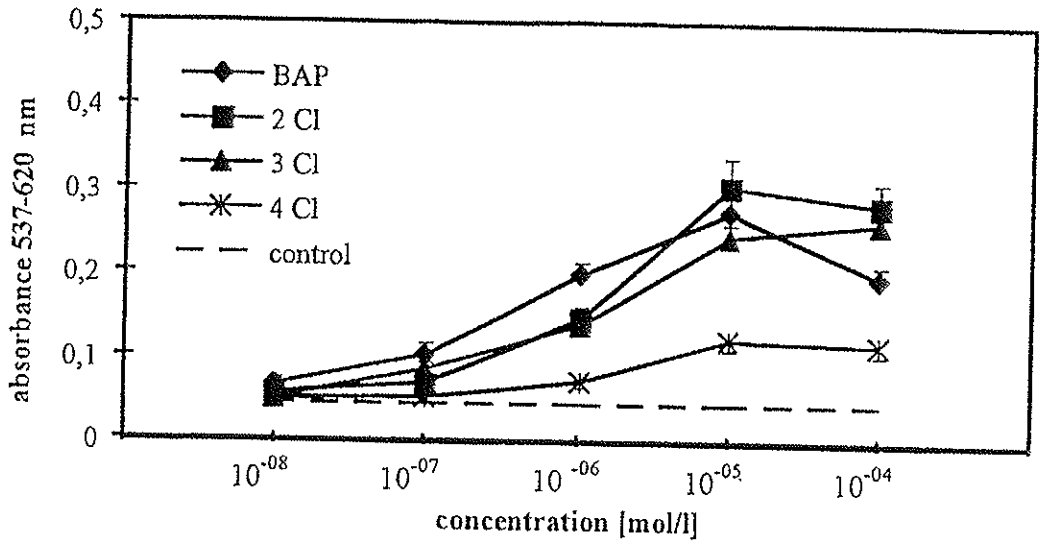



**Figure 7:** Effect of tested compounds on dark induction of betacyanin synthesis in *Amaranthus caudatus* cotyledon/hypocotyl explants. Error bars show standard deviations of the mean for 5 replicate determinations. Dashed line indicates the values for the control treatment without added cytokinin, 0.043±0.009. Values represent the difference in O.D. units between absorption at 537 and 620 nm.

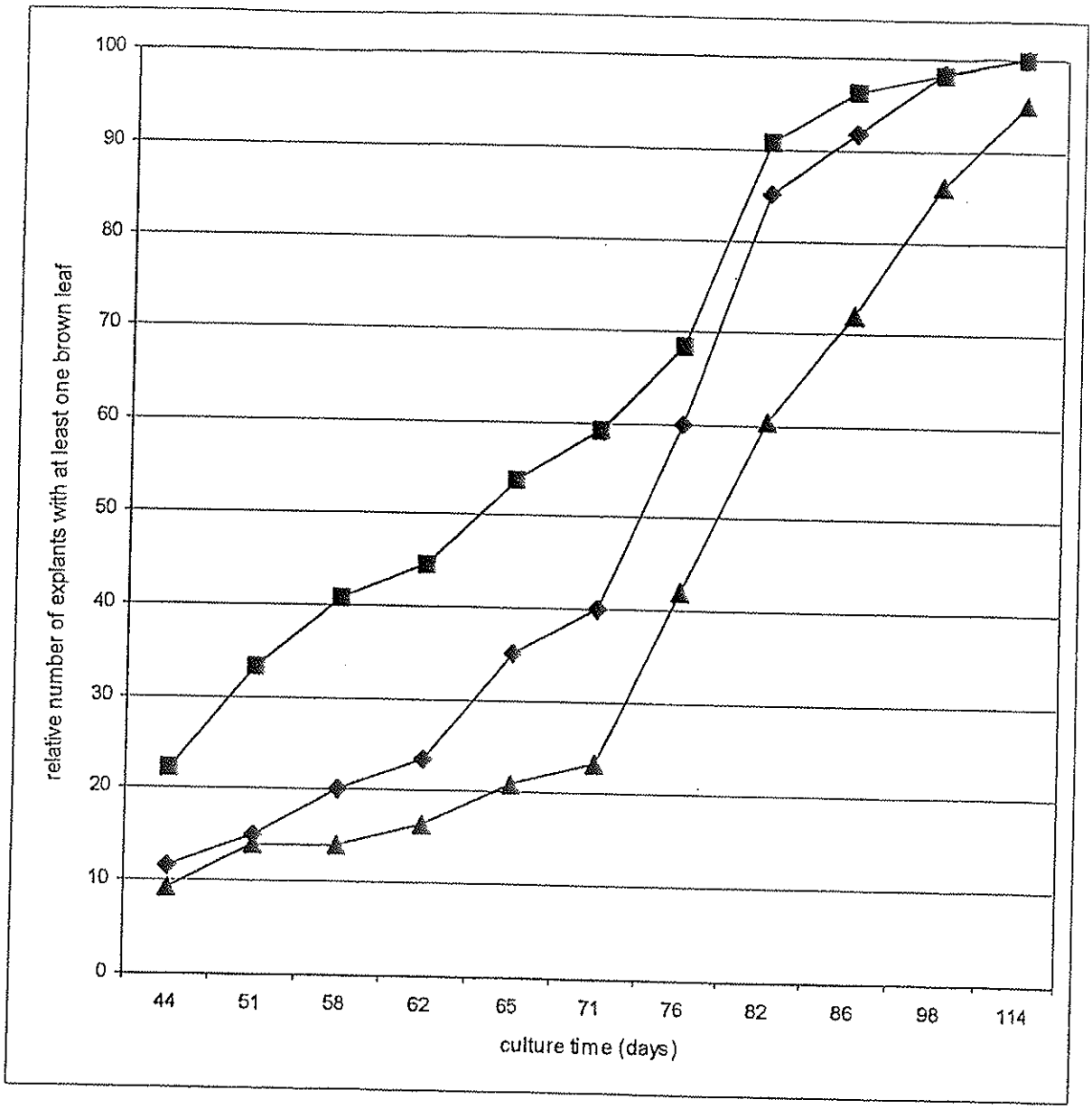



Fig. 8. Relative number of explants with at least one brown leaf in function of culture time (■: BA, ●: mT, ▲: mMeOBAP)

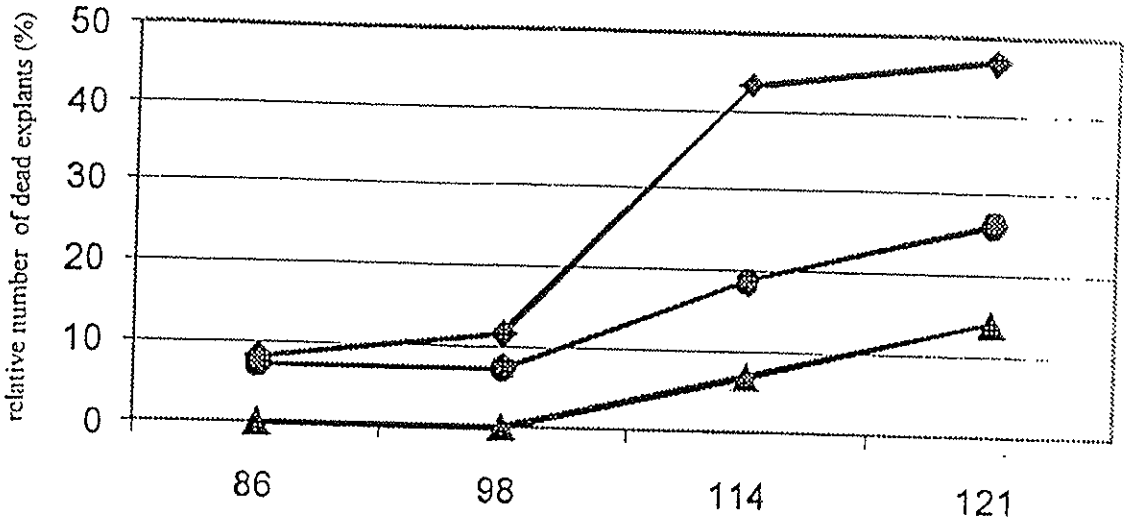
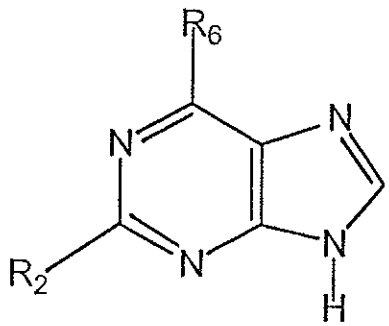



Fig. 9. Relative number of dead explants in relation to culture time (■: BA, ●: mT, ▲: mMeOBAP).



Fig 10. Left: dead *Rosa* explant on BA containing medium; right: vigorous *rosa* plantlet after 121 days cultivation on mMeOBAP containing medium




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Fig. 11