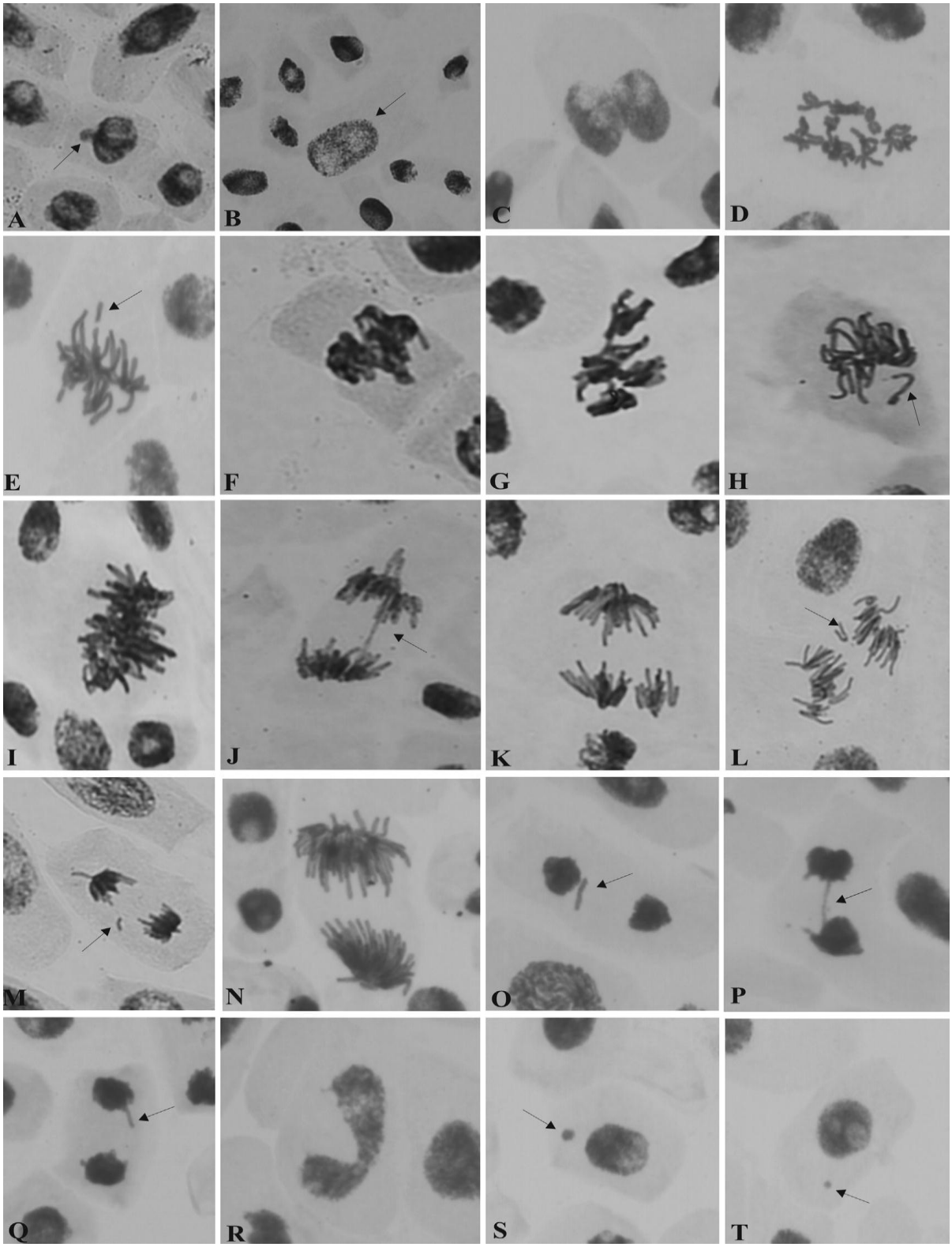
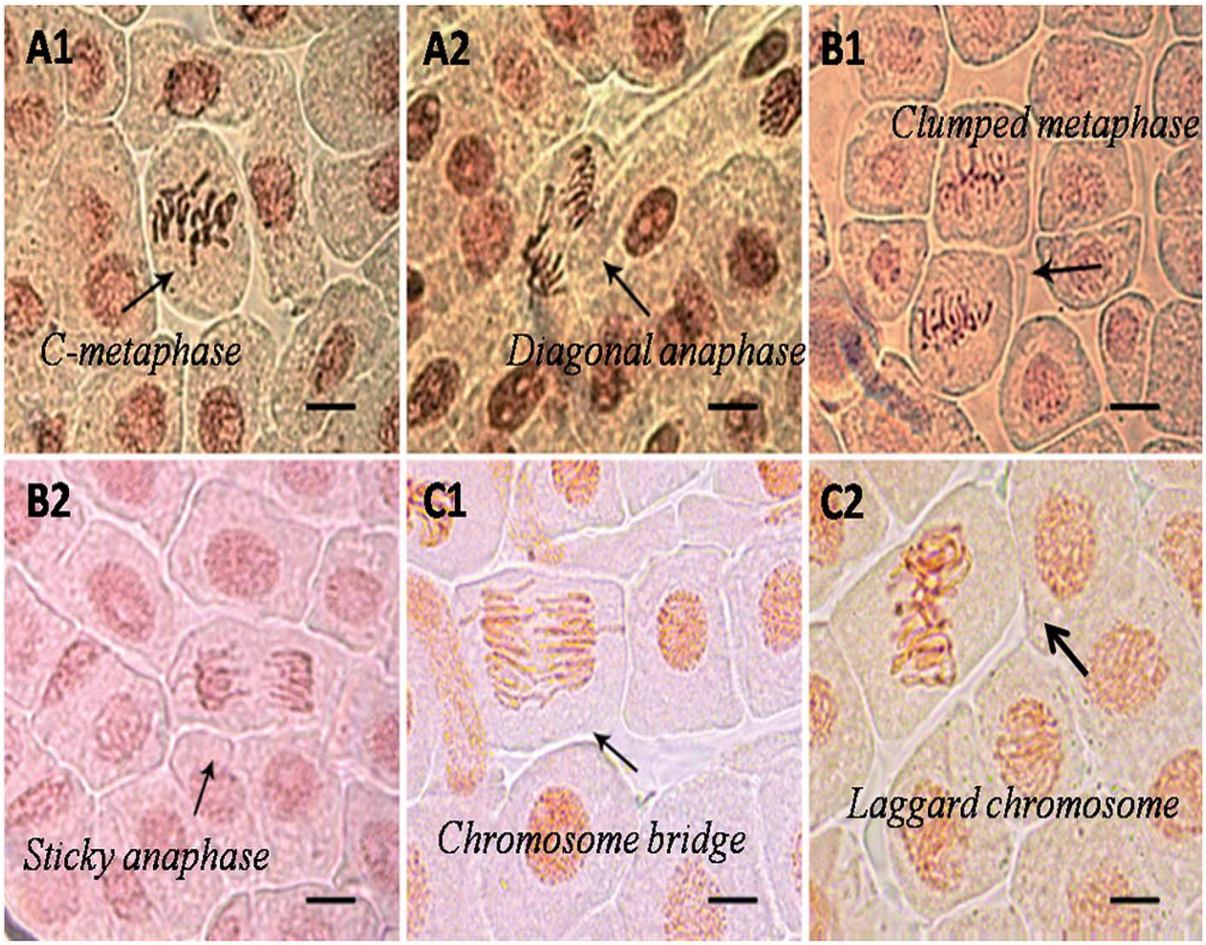
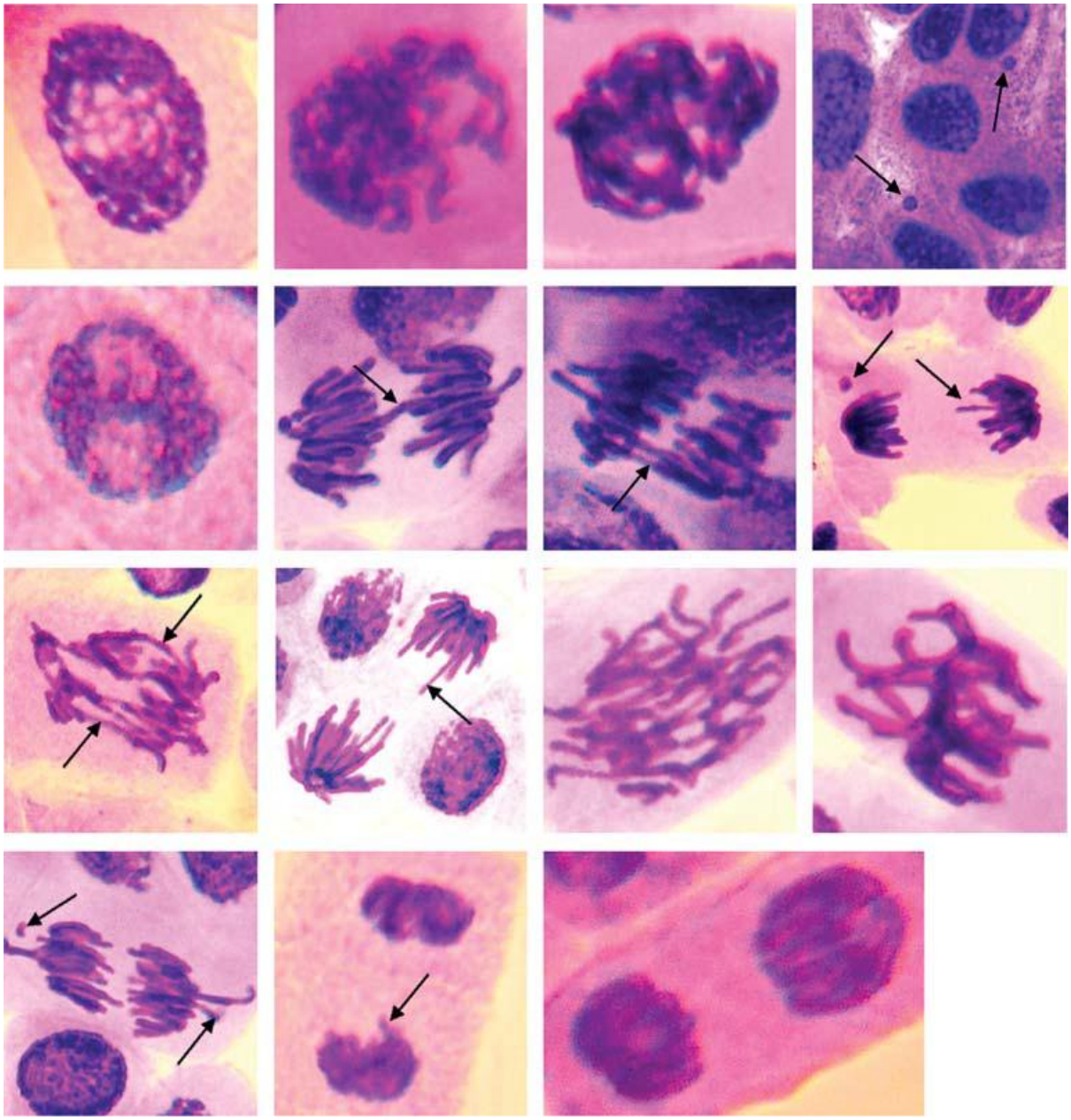


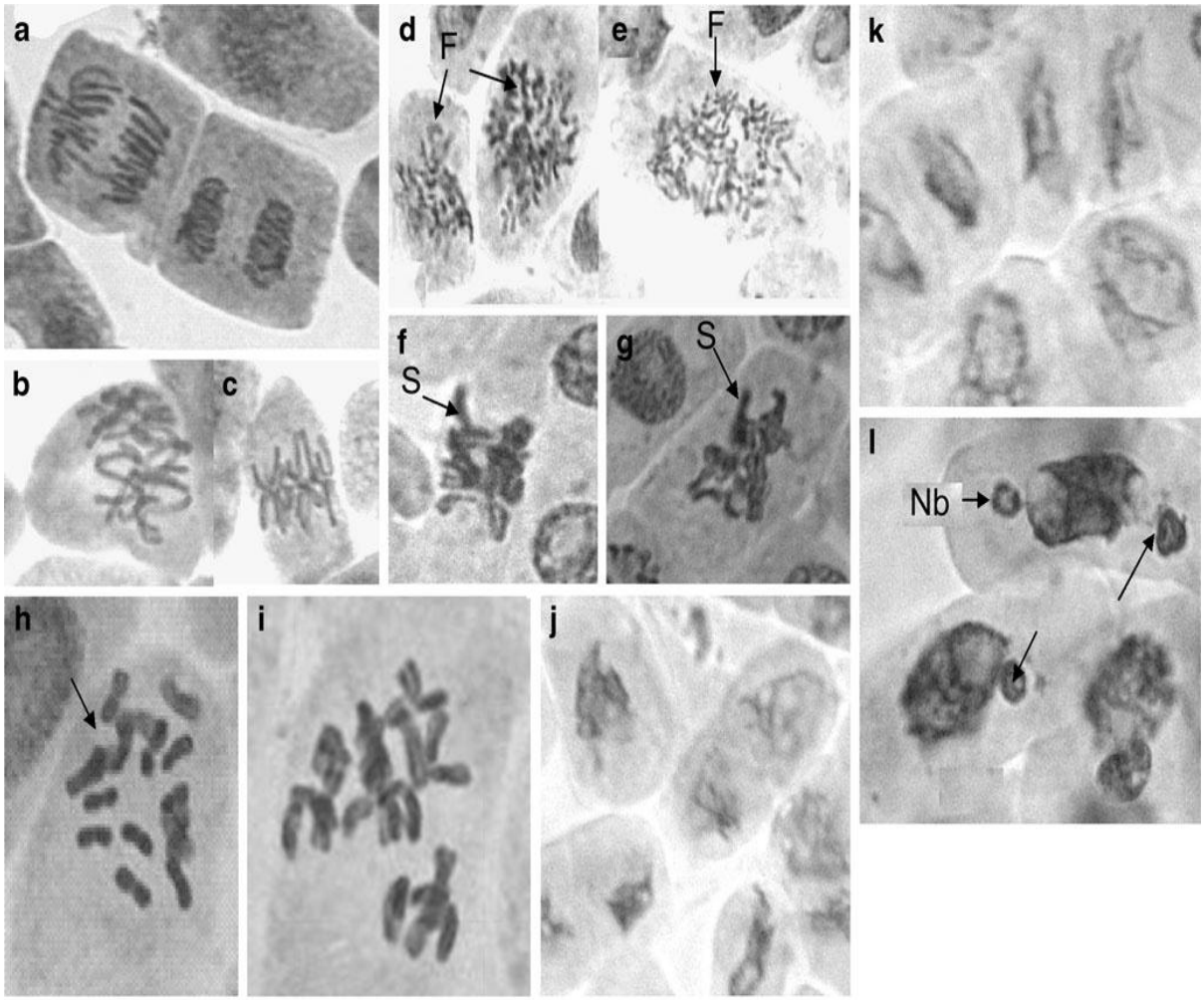
Chromosome aberrations found in meristematic cells of Allium cepa after exposure to the insecticide imidacloprid, herbicide sulfentrazone and mixture of these two pesticides:
A) nuclear bud (arrow); B) polyploid prophase (arrow); C) binucleated cell; D) C-metaphase; E) metaphase with chromosome break; F-G) chromosome adherences; H) metaphase with chromosome loss (arrow); I) polyploid metaphase; J) anaphase with chromosome bridge (arrow); K) multipolar anaphase, L) anaphase with chromosome loss (arrow); M) anaphase with chromosome break (arrow); N) polyploidy anaphase, O) telophase with chromosome loss (arrow); P) telophase with bridge (arrow); Q) telophase with chromosome delay (arrow), R) lobulated nucleus, SeT) cells with micronuclei (arrows). Magnification: x400.



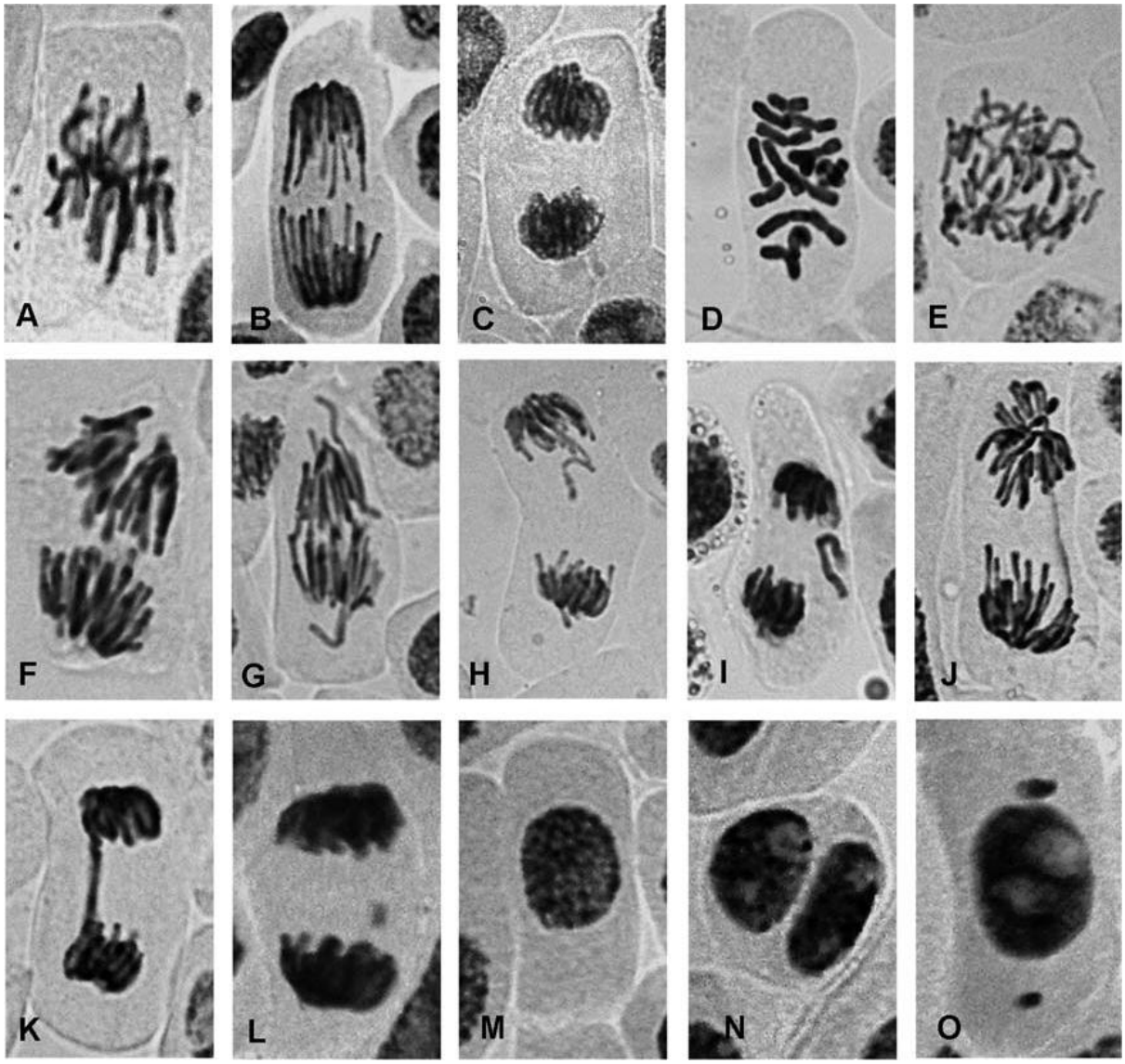
Photomicrograph of chromosomal aberration observed in root tip cells after exposure to Au15 at 1000magnification:
(A1–A2) shows C-metaphase and diagonal anaphase at 10 mgmL1 of Au15, (B1–B2) shows clumped metaphase and sticky anaphase in 1 mgmL1 treated cells and (C1–C2) shows formation of chromosomal bridge and laggard chromosome upon the exposure to 0.1 mg mL1 NPs (scale bar – 10 mm).



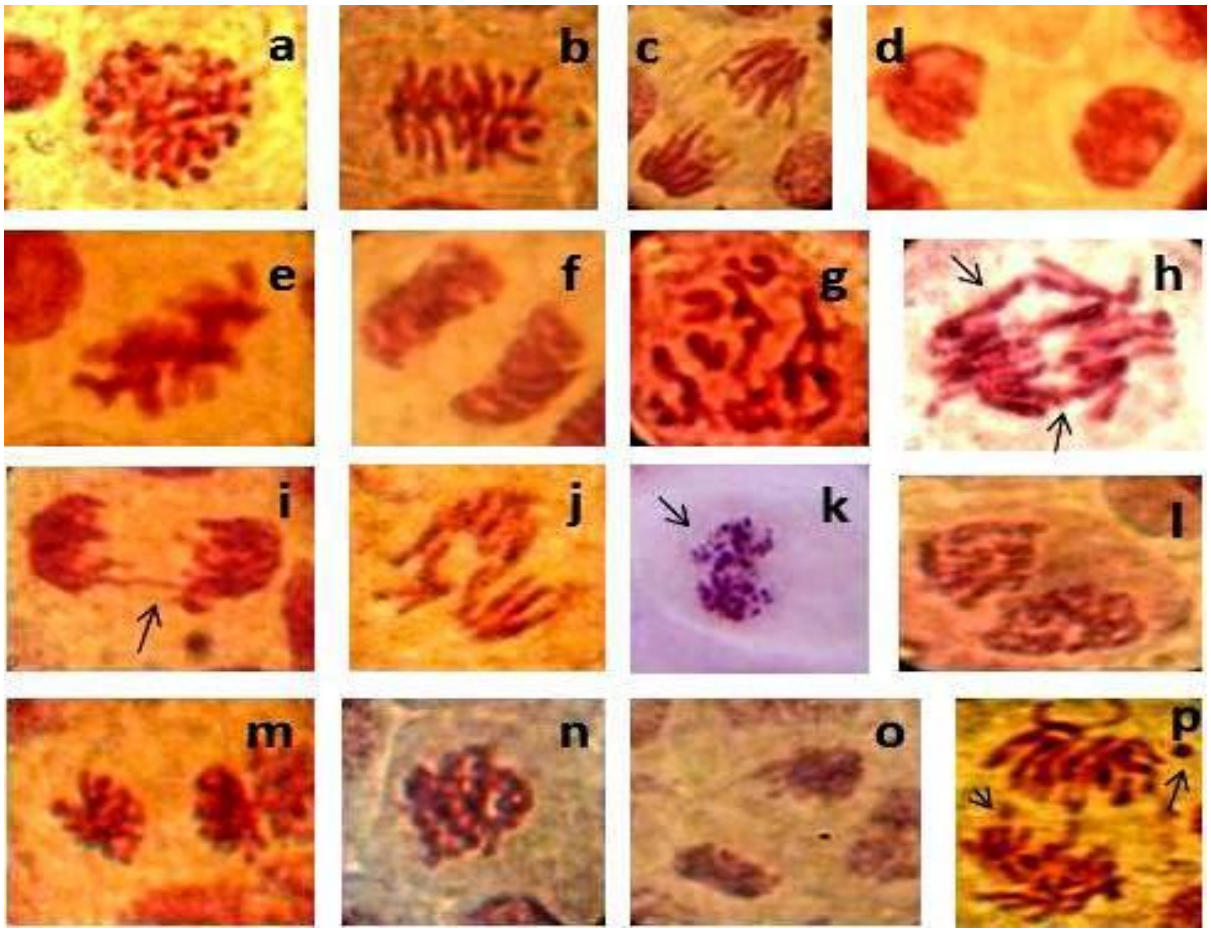
Some types of abnormal cells induced in garlic root tip cells by ZnO NPs:
(A) Vacuolated nucleus at prophase (40 mg/L for 16 h); (B) Irregular prophase (50 mg/L for 24 h); (C) Sticky prophase (50 mg/L for 24 h); (D) Micronucleus (50 mg/L for 24 h); (E) Binucleated cells (40 mg/L for 24 h); (F) Single bridge with lagging chromosome (40 mg/L for 24 h); (G) Double bridge with lagging chromosome (50 mg/L for 24 h); (H) Sticky metaphase with micronucleus (40 mg/L for 16 h); (I) Multibridges at anaphase (30 mg/L for 24 h); (J) Lagging chromosome at metaphase (30 mg/L for 24 h); (K) Irregular metaphase (30 mg/L for 16 h); (L) Sticky metaphase (30 mg/L for 8 h); (M) Lagging chromosome with fragment at metaphase (50 mg/L for 16 h); (N) Lagging chromosome at anaphase (40 mg/L for 24 h); (O) Unequally sized nuclei at interphase (40 mg/L for 24 h).



Cytology of A. cepa root tip cells by orcein staining, treated with a–c no salt; d, e 100 mM salt; f, g 150 mM salt; h, i 200 mM salt; j 300 mM salt; k 400 mM salt; and l 500 mM salt incubation for 24 h. Photograph taken under ×100 optical zoom of light microscope. Mitotic indices are absolutely normal (a anaphase; b, c metaphase) in case of 0 salt whereas fragmentation (F) is a major abnormality in case of 100 mM salt (d, e) and stickiness (S) and chromosome length shortening is predominant in case of 150 mM (f, g) and 200 mM (h, i) salt incubation, respectively. Nuclear budding (Nb) prominent in 500 mM salt treatment (l). Abnormalities showed by arrows and bar=10 μm



Aberrations induced by Br-oxph in *Allium cepa* root tips:
A - normal metaphase, B - normal anaphase, C - normal telophase, D,C - mitosis, E, F- Spindle abnormalities in anaphase, G - vagrant chromosome in anaphase, H, I - vagrant chromosome in anaphase-telophase, J - anaphase bridge, K -anaphase-telophase bridge, L - anaphase-telophase with fragment, M - normal interphase cell, N - binucleated cell, O - micronuclei in interphase cell.



Normal and Abnormal Stages of Mitosis in the Root Tip Cells of *Allium cepa* L. treated with blitox. a-p: **a:** Normal Prophase; **b:** Normal Metaphase; **c:** Normal Anaphase; **d:** Normal Telophase; **e:** Stickiness; **f:** Telophase laggard; **g:** c-mitosis; **h:** Anaphase bridge; **i:** Telophase bridge; **j:** Multipolarity; **k:** Picnosis; **l:** Star-anaphase; **m:** Star-telophase; **n:** Metaphase clumping; **o:** Telophase clumping; **p:** Fragmentations.