

Genotoxicity of Different *tert*-Butylcalix[4]crowns

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The ability of two calix[4]arene derivatives, namely 25,27-*p*-*tert*-butylcalix[4]dithiooxabenzocrown (**1**) and 25,27-*p*-*tert*-butylcalix[4]trithiooxabenzocrown (**2**), to produce chromosomal aberrations in root meristematic cells of *Allium cepa* and micronuclei (MN) in normochromatic erythrocytes (NCE) of Balb/c mice was investigated. NCE are normal mature red blood cells with a full complement of hemoglobin but lack ribosomes. In the first test, the root tips were treated with a series of concentrations of the two test chemicals ranging from 10^{-7} to 10^{-4} M for 24 or 48 h. Both compounds caused concentration-dependent increases in the percentage of aberrant cells and reductions in the mitotic index. These effects depended, to some extent, on the duration of the treatment. The most conspicuous chromosomal abnormalities were c-mitosis, chromosome bridges, chromosome breaks, chromosome lags as well as micronuclei and multinuclei. In the second test, acridine orange fluorescent staining was applied to evaluate the incidence of MN in NCE of mice intraperitoneally injected with varying contents of the two test chemicals (0.02–0.08 mg/mouse). The two chemicals induced dose-dependent MN formation as compared to the negative control. The second compound had more pronounced cytogenetic influence than the first one. Mitomycin C (MMC, 14 mg/kg body weight), employed as positive control, produced more obvious effects on the parameters investigated.

Key words: Calixcrowns, Chromosome Aberrations, Micronuclei