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'Acid Black 210' dye has no mutagenicity even after metabolic activation

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Azo dyes are the most widely used synthetic organic dyes in textile industries. They can be cleared by skin bacteria or by dermal/systemic metabolism into aromatic amines with undesired toxicological properties. 'Acid Black 210' has three azo groups in its chemical structure and is frequently used to dye leather, cotton and woolen. In 2014, this dye was identified as an azo dye which could be cleaved into the non-regulated aromatic amines of toxicological concern 4-nitroaniline and sulfanilic acid. To study the mutagenicity properties of this dye is essential to do a suitable (eco) toxicological risk assessment, especially because there is no information about the toxicological properties of this dye in the scientific literature. The experiments were conducted according to the methods described by Maron and Ames (1983), and Mortelmans and Zeiger (2000), with (+S9) and without (-S9) metabolization using the pre-incubation method in *Salmonella typhimurium* TA98 and TA100 strains. The number of His^+ colonies was counted manually after 66h incubation at 37oC of 'Acid Black 210' (range 0.5-5,000 µg/plate). No mutagenic effect was observed for the TA100 strain even after metabolic activation. The mutagenic effect statistically occurred for the TA98 strain only in higher concentrations, increased after S9 treatment, but with very low potency (0.017 and 0.124 revertants/µg for -S9 and +S9, respectively). These new information corroborate with other tests conducted by our group (data not show), with the conclusion that this dye seems to be sabe from the ecotoxicological point of view in the light of the current knowledge.

Biography

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