
Abstract

Rodent toxicology studies have historically been performed in wire-bottom cages, but the 1996 Guide for the Care and Use of Laboratory Animals recommends solid-bottom caging with bedding. Some investigators have expressed concern that changing to solid-bottom cages would interfere with technicians’ ability to detect clinical signs. To test this hypothesis, rats were housed in both types of caging and given compounds to induce a variety of subtle clinical signs common to toxicology studies including chromodacryorrhea, soft stool, stereotypic behaviors, mild hypoactivity, abnormal postures, and discolored urine. For one comparison, fecal pellets were removed to simulate decreased production of feces. Technicians, blinded from knowing which animals had been treated, observed the rats and recorded the clinical signs they detected. The technicians who administered the treatments verified that clinical signs were present before and after the blinded technicians made their observations. The number of animals observed with clinical signs divided by the number of animals verified with signs was calculated for each compound and compared between the cage types by using the Fisher Exact Test. The only statistically significant difference observed was a diminished ability to detect discolored, dark urine from rats in wire-bottom cages. These results suggest that concerns about technical staff’s inability to detect clinical signs in toxicity tests should not prevent investigators from using solid-bottom cages with bedding.