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Assessment of Cell-Rebuilding Efficacy of Selected Food Plants in the Lungs of Wild Rats Living in a Polluted Environment

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Abstract : The cell-rebuilding efficacy of four food plants eating as vegetables and spices in Nigeria was assessed in the lungs of wild rats (Rattus rattus) living in a polluted environment. The plants are roselle (Hibiscus sabdarrifa), moringa (Moringa oleifera), ginger (Zingiber officinale) and ugwu (Telfairia occidentalis). Sixty rats were caught from the vicinity of a cement factory in Sagamu, Southwestern-Nigeria and grouped into 6. The control group was administered distilled water, while the test groups were given ethanolic extracts of roselle, moringa, ginger, ugwu and the mixture of the extracts for 180 days. The histopathology of the rats was conducted before and at the end of 180 days extracts administration. Before administering the extracts, the lungs of the rats showed vascular congestion, severe fibrosis and congested alveolus; all which were also observed in the lungs of control rats at the end of the treatment. However, the lungs of rats that were treated with the extracts of the plants showed moderate, mild or no histological damage compared to the control rats. The extract of the mixture of the plants performed best, followed by ginger, ugwu and roselle, respectively. These findings suggest that the food plants contain phytonutrients and phytochemicals, which repaired damaged cells and tissues in the exposed rats. Consequently, the plants could play a role in ameliorating health effects of environmental pollution.

Keywords : food plants, wild rats, lung, histopathology, fibrosis, cell-rebuilding
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