*1. Preparation of biological samples*

The tissue samples were subjected to homogenization at 4000x g in tris- buffer (pH 7.36), and their supernatants were stored for biochemical analysis. Also, the serum was retrieved from the fresh blood samples. All the samples were stored at -25º C (Bosch, Germany) with appropriate labeling.

*2. Estimation of aspartate aminotransferase (AST) and alanine aminotransferase (ALT)*

AST and ALT are important serum markers for the assessment of liver function. The activity of these liver markers was estimated in the serum samples by commercial kits (QCA, Spain).

*3. Assessment of redox status*

*3.1. Assay of superoxide dismutase (SOD), catalase (CAT) and* glutathione reductase (GR)

The activity of antioxidant enzymes - superoxide dismutase (SOD), catalase (CAT), and glutathione reductase (GR), was conducted by the established protocols (Marklund and Marklund 1974, Aebi 1984, Carlberg and Mannervik 1985).

*3.2. Measurement of reduced glutathione (GSH) and malondialdehyde (MDA)*

GSH and total MDA were quantified by the methods of Jollow et al., (1974), and Buege and Aust (1978), respectively.

*4. Comet assay*

The comet assay of liver cell suspension was conducted as per the previously established method with slight modifications (Singh et al., 1988, Hassan et al., 2012).

*5. Histopathological assessment of liver tissues*

The histological analysis of liver tissue from the treated animals was done previously (Hassan et al., 2019). Finally, the slides of tissue sections were observed under the light microscope (Olympus, BX40, Japan) and their photomicrographs were snapped with the suitable power-integrated camera (X40 objective).

*6. Statistical analysis*

All the experimental data were evaluated by one-way ANOVA followed by post-hoc analysis by Tuckey's method by Graph Pad prism 5 software.

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