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Antitumor and toxicological evaluation of 2-N-glycine-1,4-naphthoquinone in Ehrlich tumor-bearing Swiss mice

Avaliação antitumoral e toxicológica de 2-N-glicina-1,4-naftoquinona no tumor de Ehrlich em camundongos Swiss

Evaluación antitumoral y toxicológica de 2-N-glicina-1,4-naftoquinona en tumor de Ehrlich en ratones Swiss

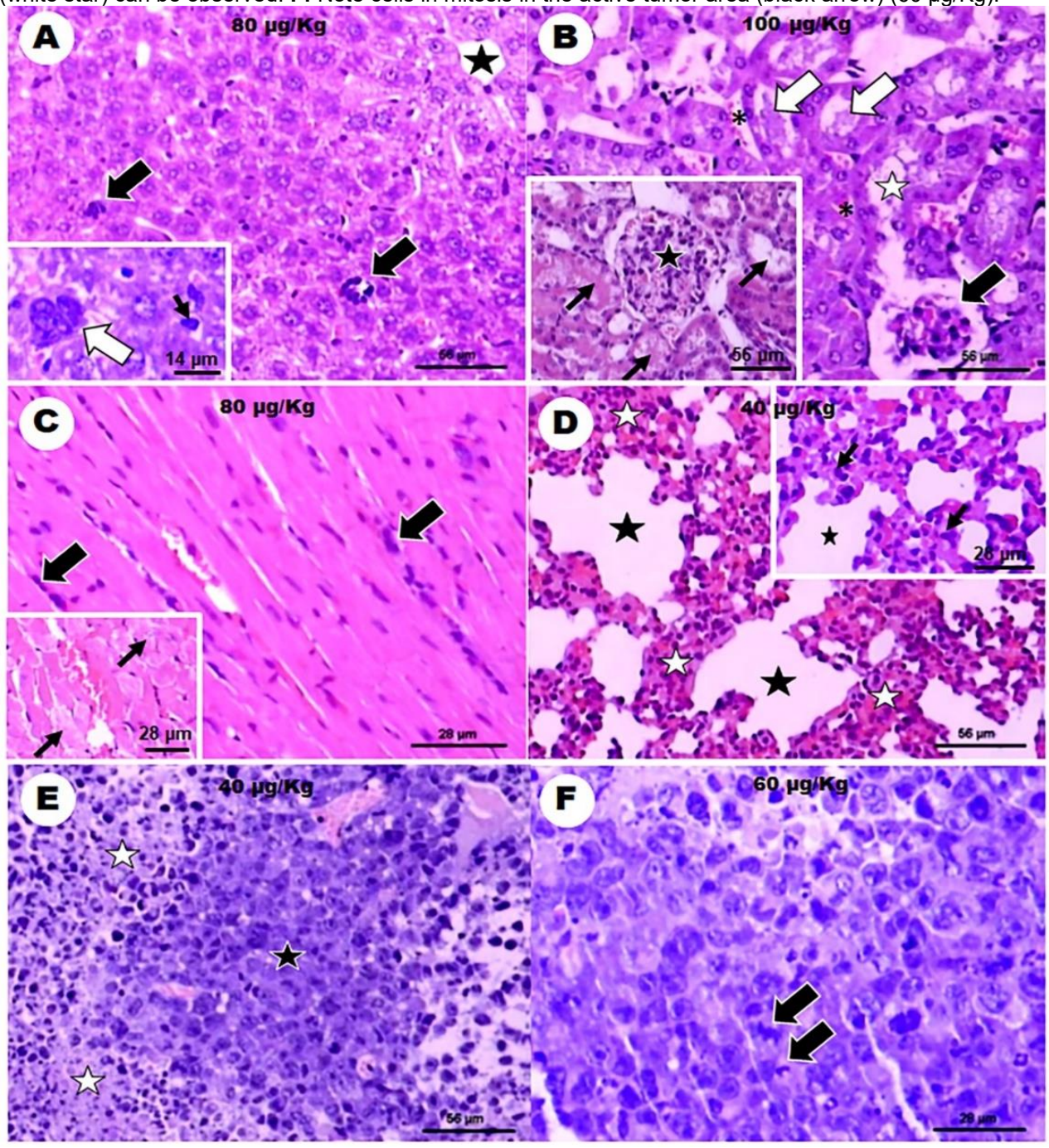
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Supplementary file

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Figure S1 - Histopathological analysis of vital organs and tumors in Swiss mice bearing Ehrlich's tumor and treated with 2-N-glycine-1,4naphthoquinone at dosages of 40, 60, 80 and 100µg/Kg. **A:** Liver parenchyma (40 µg/Kg), where diffuse microsteatosis can be seen close to the central-lobular vein (star) and lymphocytic mononuclear infiltrate (black arrow). In detail, Kupffer cells (thin arrow) and focus of metastasis between hepatocytes (white arrow). **B:** Renal parenchyma (100 µg/Kg), with glomerular atrophy (large black arrow), presence of protein casts in the lumen of the convoluted tubules (white arrow), congestion (*), necrosis in the convoluted tubules (white star) and in detail, proliferative glomerulonephritis (star) and renal tubules with hydropic degeneration (thin arrow). **C:** Cardiac parenchyma (80 µg/Kg) with discrete lymphocytic mononuclear infiltrate between myocardial fibers (large black arrow) and hydropic degeneration of cardiomyocytes detail (thin black arrow). **D:** Lung parenchyma (40 µg/Kg), where pulmonary emphysema (black star), chronic interstitial pneumonia (white star) and activation of type-II pneumocytes (black arrow) can be observed. **E:** Detail of the tumor tissue (40 µg/Kg), where areas of intense cellular activity (black star) and areas of necrosis (white star) can be observed. **F:** Note cells in mitosis in the active tumor area (black arrow) (60 µg/Kg).



Source: Silva ECS, et al., 2026.

Table S1 - Organ weight (mg) of Swiss mice bearing Ehrlich's tumor and treated with different doses of 2-N-glycine-1,4-naphthoquinone during the 8-day experimental period. Data expressed as mean ± standard deviation.

Organs	Control n=6	40 ug/Kg n=6	60 ug/Kg n=6	80 ug/Kg n=6	100 ug/Kg n=6	P
Liver	2.40 ± 0.15	2.29 ± 0.25	2.35 ± 0.20	2.15 ± 0.10	2.16 ± 0.15	0.0946
Spleen	0.31 ± 0.07^{ab}	0.331 ± 0.03^{ab}	0.34 ± 0.01^{a}	0.275 ± 0.04^{ab}	0.25 ± 0.05^{b}	0.0081
Kidneys	0.25 ± 0.02	0.27± 0.04	0.24 ± 0.02	0.24 ± 0.03	0.23 ± 0.03	0.4910
Lungs	0.21 ± 0.02	0.19 ± 0.02	0.27 ± 0.15	0.20 ± 0.01	0.22 ± 0.03	0.3966
Heart	0.26 ± 0.04	0.23 ± 0.03	0.24 ± 0.03	0.24 ± 0.02	0.25 ± 0.05	0.7397
Tumor (8th day)	1.14 ± 0.92	1.12 ± 0.75	1.71 ± 1.17	0.99 ± 0.38	0.74 ± 0.42	0.7001

Different letters on the same line indicate statistical significance between groups (p<0.05).

Source: Silva ECS, et al., 2026.

Table S2 - Hematological values of mice (*Mus musculus*) bearing Ehrlich's tumor, treated with different doses of 2-N-glycine-1,4-naphthoquinone during the 8-day experimental period. Data expressed as mean ± standard deviation.

Parameters	Control (n=6)	40 ug/Kg n=6	60 ug/Kg n=6	80 ug/Kg n=6	100 ug/Kg n=6	P
Hematocrit	44.2 ± 2.16^{a}	37.83 ± 2.92^{ab}	31.60 ± 8.53^{b}	40.60 ± 2.88^{ab}	38.83 ± 7.25^{ab}	**0.0409**
Leukocytes	9500 ± 2000	11833.3 ± 4996.7	15200 ± 5794.4	13000 ± 4513.9	12008.3 ± 4591.1	**0.5729**
Eosinophils	1.6 ± 1.14	1.16 ± 0.75	1.4 ± 1.14	1.4 ± 0.54	1.0 ± 0.89	**0.8513**
Basophils	0.0 ± 0.0	0.0 ± 0.0	0.0 ± 0.0	0.0 ± 0.0	0.16 ± 0.40	**0.4779**
Band neutrophils	0.4 ± 0.89	0.66 ± 1.03	1.8 ± 1.48	1.4 ±2.19	1.0 ± 1.26	**0.4821**
Segmented	38.6 ± 8.26	41.66 ± 9.81	46.0 ± 10.12	40.0 ± 17.04	38.33 ± 7.89	**0.7476**
Lymphocytes	57.0 ± 7.96	55.5 ± 11.64	49.4 ± 12.74	55.4 ± 20.33	58.33 ± 8.80	**0.8261**
Monocytes	2.4 ± 1.81	1.0 ± 1.095	1.4 ± 1.14	1.6 ± 1.34	1.33 ± 1.50	**0.6674**
Platelets	220000 ± 2739	216666.6 ± 2582	220000 ± 5701	200000 ± 7071	250000 ± 7746	**0.8295**

Different letters on the same line indicate statistical significance between groups (p<0.05).

Source: Silva ECS, et al., 2026.