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(54) Title: PARP MODULATORS AND TREATMENT OF CANCER

(57) Abstract: The invention relates to a method of modulating poly(ADP-ribose)polymerase-1 (PARP-I) activity in a mammal comprising administering to a mammal an effective amount of an organic aromatic compound having from 4 to about 35 carbon atoms, wherein said organic aromatic compound is capable of binding the arginine-34 moiety located in Zinc finger- 1 of the PARP-I enzyme and wherein said organic aromatic compound has electron donating capabilities such that it's τr-electron system will interact with the positively charged (cationic) guanidinium moiety of the specific arginine-34 residue of the Zinc-1 finger of PARP-I and does not contain benzamide or lactam substituents. In particular, substituted benzopyrones and substituted indoles and their pharmaceutical compositions containing such compounds that modulate the activity of PARP-I, are described. The invention is also directed to the composition of matter, kits and methods for their therapeutic and/or prophylactic use in treating diseases and disorders described herein, by administering effective amounts of such compounds. Preferably, the compositions and methods provided herein inhibit PARP activity.

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