

[Open Peer Review on Qeios](#)

Simmiparib

National Cancer Institute

Source

National Cancer Institute. *Simmiparib*. NCI Thesaurus. Code C140553.

An orally bioavailable inhibitor of the nuclear enzyme poly(ADP-ribose) polymerase (PARP) 1 (PARP1) and 2 (PARP2), with potential antineoplastic activity. Upon oral administration, simmiparib selectively binds to PARP and prevents PARP-mediated DNA repair of breaks in single-stranded DNA via the base excision repair pathway. This induces the accumulation of DNA strand breaks, promotes genomic instability, induces G2/M arrest and leads to apoptosis. PARP is activated by single-strand DNA breaks and catalyzes post-translational ADP-ribosylation of nuclear proteins, which signal and recruit other proteins to repair damaged DNA.