

PARP Inhibitors

Poly (ADP-ribose) polymerase (PARP) inhibitors are a group of compounds used in the treatment of cancer, neurodegenerative diseases, and cardiovascular diseases. PARP is an enzyme responsible for repairing single-stranded DNA breaks, and when inhibited, causes double-stranded DNA breaks to occur during the rapid replication of DNA that is characteristic of many diseases such as cancer¹. This collection of double-stranded DNA breaks grows rapidly; as the cell is often unable to repair them quickly enough, cell death may occur. Normal cells undergo replication slowly enough that DNA may be repaired by other mechanisms such as homologous repair, allowing them to more easily survive PARP inhibition.

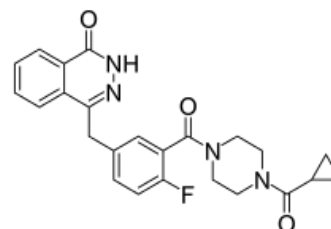
Certain cancers in particular are much more dependent on PARP than regular cells, making them excellent targets for PARP inhibition. In addition to treating breast and pancreatic cancers, PARP inhibitors have shown promise in the treatment of glioma, medulloblastoma, and other brain cancers. **3-Aminobenzamide (A4931)** increases efficacy of co-administered chemotherapeutics in cellular models of glioma². **Velaparib (V1745)** slows tumor progression with combined with **Temozolomide (T1849)**, an alkylating agent, versus temozolomide alone³. **Olaparib (O4402)** increases radiation sensitivity in a variety of cell lines, including ependymoma, glioma, and medulloblastoma cells⁴.

Other PARP inhibitors carried by LKT Laboratories include **AZD2461 (A9612)** and **PJ34 Hydrochloride (P3600)**.



References:

1. Piskunova TS, Yuorva MN, Ovsyanikov AI et al. *Curr Gerontol Geriatr Res.* 2008;754190.
2. Cheng CL, Johnson SP, Keir ST, et al. *Mol Cancer Ther.* 2005 Sep;4(9):1364-8.
3. van Vuurden DG, Hulleman E, Meijer OL, et al. *Oncotarget.* 2011 Dec;2(12):984-96.
4. Donawho CK, Luo Y, Luo Y, et al. *Clin Cancer Res.* 2007 May 1;13(9):2728-37.



O4402 Olaparib

