# PARL-IN-1

**Cat. No.:** HY-152265

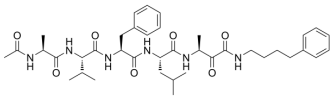
**Molecular Formula:** $C_{39}H_{56}N_6O_7$

**Molecular Weight:** 720.9

**Target:** Mitophagy; PINK1/Parkin

**Pathway:** Autophagy; Neuronal Signaling

**Storage:** Please store the product under the recommended conditions in the Certificate of Analysis.



## BIOLOGICAL ACTIVITY

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| **Description** | PARL-IN-1 is a potent PARL inhibitor with an $IC_{50}$ value of 28 nM. PARL-IN-1 inhibits PARL and leads to a robust activation of the PINK1/Parkin pathway. PARL-IN-1 promotes PINK1/Parkin-dependent mitophagy[1]. |
| **$IC_{50}$ & Target** | IC50: 28 nM (PARL)[1] |
| **In Vitro** | PARL-IN-1 (compound 5; 5 nM-20 μM) impedes mitochondrial stress-induced cleavage of PGAM by PARL in cells and inhibits the cleavage of overexpressed human PGAM5 in HEK293T cells in a dose-dependent manner[1].<br>PARL-IN-1 (0.1-30 μM; 8 h; HEK293T cells) stabilizes PINK1 and triggers its alternative cleavage and trafficking in living cells[1].<br>PARL-IN-1 (5 μM; 22 h; HEK293 T-REx cells) blocks the respiratory chain leading to aberrant reactive oxygen species (ROS) production, activates the PINK1/Parkin pathway[1].<br>MCE has not independently confirmed the accuracy of these methods. They are for reference only. |

Western Blot Analysis[1]

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| Cell Line: | HEK293T cells |
| Concentration: | 0.1, 0.3, 1, 3, 10, and 30 μM |
| Incubation Time: | 8 hours |
| Result: | Inhibitd the PARL-cleavage of overexpressed PINK1 in a dose-dependent manner. |

## REFERENCES

[1]. Poláchová E, et, al. Chemical Blockage of the Mitochondrial Rhomboid Protease PARL by Novel Ketoamide Inhibitors Reveals Its Role in PINK1/Parkin-Dependent Mitophagy. J Med Chem. 2023 Jan 12;66(1):251-265.

**Caution: Product has not been fully validated for medical applications. For research use only.**

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