3-Deazaneplanocin A (DZNep) was originally synthesized as a potent inhibitor of S-Adenosylhomocysteine hydrolase, and is a cyclopentenyl derivative of 3-Deazaadenosine. More recently DZNep has been identified as an inhibitor of lysine methyltransferases, particularly EZH2. DZNep therefore acts as an epigenetic modifier, specifically inhibiting the trimethylation of histone 3, lysine 27, by depleting levels of EZH2 (Miranda et al.; Tan et al.; Tseng et al.).

### Molecular Name:
3-Deazaneplanocin A

### Alternative Names:
DZNep; NSC 617989

### CAS Number:
102052-95-9

### Chemical Formula:
C₁₂H₁₄N₄O₃

### Molecular Weight:
262.3 g/mol

### Purity:
≥ 97%

### Chemical Name:
5R-(4-amino-1H-imidazo[4,5-c]pyridin-1-yl)-3-(hydroxymethyl)-3-cyclopentene-1S,2R-diol

### Structure:

![Structure of 3-Deazaneplanocin A](image)

### Product Description

3-Deazaneplanocin A (DZNep) was originally synthesized as a potent inhibitor of S-Adenosylhomocysteine hydrolase, and is a cyclopentenyl derivative of 3-Deazaadenosine. More recently DZNep has been identified as an inhibitor of lysine methyltransferases, particularly EZH2. DZNep therefore acts as an epigenetic modifier, specifically inhibiting the trimethylation of histone 3, lysine 27, by depleting levels of EZH2 (Miranda et al.; Tan et al.; Tseng et al.).

### Properties

**Physical Appearance:** A crystalline solid

**Storage:**
Product stable at -20°C as supplied. Protect from prolonged exposure to light. For product expiry date, please contact techsupport@stemcell.com.

**Solubility:**
- PBS (pH 7.2) ≤ 35 mM
- DMSO ≤ 75 mM
- Absolute ethanol ≤ 3.5 mM

For example, to prepare a 10 mM stock solution in PBS, resuspend 500 µg in 191 µL of PBS (pH 7.2).

Prepare stock solution fresh before use. Information regarding stability of small molecules in solution has rarely been reported, however, as a general guide we recommend storage in DMSO at -20°C. Aliquot into working volumes to avoid repeated freeze-thaw cycles. The effect of storage of stock solution on compound performance should be tested for each application.

For use as a cell culture supplement, stock solution should be diluted into culture medium immediately before use. Avoid final DMSO concentration above 0.1% due to potential cell toxicity.
Published Applications

REPROGRAMMING
- Enables chemical reprogramming (without genetic factors) of mouse embryonic fibroblasts to induced pluripotent stem (iPS) cells, in combination with CHIR99021, Forskolin, Valproic Acid, Tranylcypromine, and RepSox, by increasing OCT4 expression at later stages of reprogramming (Hou et al.).
- Reactivation of XIST-dependent inactive X chromosomes in human embryonic stem cells (Diaz Perez et al.).

CANCER RESEARCH
- Inhibits self-renewal of glioblastoma multiforme cancer stem cells (Suva et al.).
- Inhibits survival of acute myeloid leukemia blast cells, in combination with a histone deacetylase inhibitor (Fiskus et al.).

References

Related Small Molecules
For a complete list of small molecules available from STEMCELL Technologies, please visit our website at www.stemcell.com/smallmolecules or contact us at techsupport@stemcell.com.

This product is hazardous. Please refer to the Safety Data Sheet (SDS).