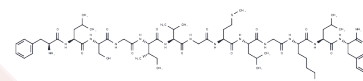


## Temporin-SHa

## Chemical Properties

|                   |   |
|-------------------|---|
| CAS No. :         | 1065010-73-2  |
| Formula:          | C67H109N15O14S  |
| Molecular Weight: | 1380.74   |
| Storage:          | Keep away from moisture<br>Powder: -20°C for 3 years   In solvent: -80°C for 1 year<br><small>Actual storage temperature shall be subject to the COA.</small> |



## Biological Description

|               |   |
|---------------|---|
| Description   | Temporin-Sha is an antimicrobial peptide known for its broad-spectrum biological activity. It is effective against Gram-positive bacteria (such as <i>Listeria</i> , MIC= 6.25 $\mu$ M), Gram-negative bacteria (such as <i>Escherichia coli</i> , MIC= 10 $\mu$ M), and resistant strains like Methicillin-resistant <i>Staphylococcus aureus</i> . Additionally, Temporin-Sha inhibits <i>Candida albicans</i> (MIC= 25 $\mu$ M), <i>Saccharomyces cerevisiae</i> (MIC= 12 $\mu$ M), <i>Leishmania promastigotes</i> and <i>amastigotes</i> (IC <sub>50</sub> = 9-20 $\mu$ M), and <i>Trypanosomes</i> (IC <sub>50</sub> = 17 $\mu$ M). It also exhibits antiviral activity against HSV-1 and shows anticancer properties, displaying cytotoxicity towards breast cancer cells MCF-7 and lung cancer cells H460.  |
| Targets(IC50) | HIV Protease,Antibacterial,Parasite,Antifungal  |
| In vitro      | Temporin-Sha, at a concentration of 12.5 $\mu$ M for 3 hours, leads to membrane rupture of <i>Listeria ivanovii</i> and maintains over 75% bactericidal efficiency even when grafted onto a gold surface. It exhibits notable inhibitory effects on both Fluconazole-sensitive (CaS) and Fluconazole-resistant (CaR) strains of <i>Candida albicans</i> (MIC $\geq$ 256 $\mu$ g/mL), suppressing biofilm formation and disrupting preformed biofilms at high concentrations (1024 $\mu$ g/mL). Across all concentrations (32-1024 $\mu$ g/mL), Temporin-Sha shows no cytotoxicity to normal oral keratinocytes (NOK-si) (CC <sub>50</sub> = 3805 $\mu$ g/mL) and exhibits mild cytotoxicity to human gingival fibroblasts (FGH) (CC <sub>50</sub> = 492 $\mu$ g/mL). In human primary keratinocytes, Temporin-Sha (1.25-10 $\mu$ M, 25 h) significantly inhibits HSV-1 DNA replication by directly disrupting viral particles, independent of immune modulation. It effectively alters membrane integrity in bacteria ( <i>Escherichia coli</i> , <i>Streptococcus pyogenes</i> , <i>Klebsiella pneumoniae</i> , <i>Lactobacillus</i> ) and parasites ( <i>T. cruzi</i> ), inducing apoptosis-like death in <i>Leishmania infantum</i> promastigotes. Temporin-Sha, after 55 generations of <i>E. coli</i> continuous culture up to 60 days, shows no tendency to promote bacterial resistance, unlike Ampicillin. Additionally, it demonstrates cytotoxicity against various cancer cell lines, with IC <sub>50</sub> values of 14.47 $\mu$ M (MCF-7), 18.36 $\mu$ M (HeLa), and 34.5 $\mu$ M (NCI-H460), primarily inducing necrosis rather than apoptosis. |

### Preparing Stock Solutions

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|       | <b>1mg</b> | <b>5mg</b> | <b>10mg</b> |
|-------|------------|------------|-------------|
| 1 mM  | 0.7242 mL  | 3.6212 mL  | 7.2425 mL   |
| 5 mM  | 0.1448 mL  | 0.7242 mL  | 1.4485 mL   |
| 10 mM | 0.0724 mL  | 0.3621 mL  | 0.7242 mL   |
| 50 mM | 0.0145 mL  | 0.0724 mL  | 0.1448 mL   |

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Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

**Inhibitor · Natural Compounds · Compound Libraries · Recombinant Proteins**

This product is for Research Use Only · Not for Human or Veterinary or Therapeutic Use

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