

## Gala-SR

## Chemical Properties

CAS No. :	3092129-97-7
Formula:	C <sub>24</sub> H <sub>22</sub> F <sub>9</sub> N <sub>0</sub> O <sub>8</sub>
Molecular Weight:	623.43
Storage:	Powder: -20°C for 3 years   In solvent: -80°C for 1 year <small>Actual storage temperature shall be subject to the COA.</small>

## Biological Description

Description	Gala-SR is a ROR $\alpha$ agonist that enhances the amplitude of circadian rhythms to improve rhythm disorders. It is useful for research in periodontitis.
Targets(IC50)	ROR
In vitro	Gala-SR significantly improves compatibility with human U2OS cells via galactose modification at concentrations of 1-100 $\mu$ M over 24-72 hours. At 5 $\mu$ M for 24 hours, it markedly upregulates the mRNA expression of the direct target genes G6Pase and FGF21 in HepG2 cells through ROR $\alpha$ / $\gamma$ activation. Gala-SR selectively enhances ROR $\alpha$ transcriptional activation in HEK293T cells at 5 $\mu$ M. The activation effect on G6Pase and FGF21 by Gala-SR at 5 $\mu$ M for 24 hours is significantly reduced upon ROR $\alpha$ knockdown. Primarily, Gala-SR targets and activates ROR $\alpha$ through its hydrolyzable galactose modification at 5 $\mu$ M. Additionally, concentrations of 2-5 $\mu$ M increase bioluminescence levels and rhythmic amplitude of BMAL1 and Per2 reporter genes, as well as elevate BMAL1 protein expression in U2OS cells.
In vivo	Gala-SR (10 mg/kg, intraperitoneally, one hour before lights-off, daily for 2 weeks) significantly enhances the amplitude of activity rhythms and total activity levels in mice. A single dose of Gala-SR (10 mg/kg, at lights-on) boosts liver luciferase signaling in PER2::LUC knock-in mice, indicating increased BMAL1 expression. Additionally, daily intraperitoneal injection of Gala-SR (10 mg/kg, for 3 weeks) restores periodontal tissue rhythm amplitude, inhibits the NF- $\kappa$ B inflammatory pathway, and reduces bone loss associated with periodontitis in mice.

### Preparing Stock Solutions

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	<b>1mg</b>	<b>5mg</b>	<b>10mg</b>
1 mM	1.604 mL	8.0201 mL	16.0403 mL
5 mM	0.3208 mL	1.604 mL	3.2081 mL
10 mM	0.1604 mL	0.802 mL	1.604 mL
50 mM	0.0321 mL	0.1604 mL	0.3208 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.

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