

# Cyclosporin A

Calcineurin Inhibitor

Catalog code: tlrl-cyca

<https://www.invivogen.com/cyclosporin-a>

For research use only

Version 19E23-MM

## PRODUCT INFORMATION

### Contents

- 100 mg Cyclosporin A

### Storage and stability

- Cyclosporin A is provided as a solid and shipped at room temperature. Store at -20°C. Solid product is stable 1 year at -20°C when properly stored.

- Upon resuspension, Cyclosporin A should be aliquoted and stored at -20°C. Protect from light. Avoid repeated freeze-thaw cycles. Resuspended product is stable 3 months at -20°C when properly stored.

### Quality control

- The absence of bacterial contamination (e.g. lipoproteins and endotoxins) has been confirmed using HEK-Blue™ TLR2 and HEK-Blue™ TLR4 cells.

## DESCRIPTION

Cyclosporin A is a calcineurin inhibitor that exerts its immunosuppressive effects through the down-regulation of NFAT (nuclear factor of activated T cells) transcription factor, thus preventing the transcription of T cell effector cytokines<sup>1</sup>. Moreover, NFAT has been implicated in the downstream signaling of Dectin-1 which is important in the innate immune response against fungal infection<sup>2</sup>. Conversely, it has been demonstrated that inhibition of calcineurin in macrophages enhances NF-κB activation<sup>3</sup> and can trigger TLR signaling by activating both the MyD88-dependent and the MyD88-independent pathways<sup>4</sup>.

1. **Chow CW, et al., 1999.** Requirement for transcription factor NFAT in interleukin-2 expression. *Mol Cell Biol.* 19(3): 2300-07. 2. **Goodridge et al. 2007.** Dectin-1 stimulation by *Candida albicans* yeast or zymosan triggers NFAT activation in macrophages and dendritic cells. *J Immunol.* 178( 5): 3107-15. 3. **Asai T. et al., 2003.** Activation of transcription factors AP-1 and NF-κB in chronic cyclosporine A nephrotoxicity: role in beneficial effects of magnesium supplementation. *Transplantation* 75(7):1040-4. 4. **Kang Y. et al., 2007.** Calcineurin negatively regulates TLR-mediated activation pathways. *J Immunol* 179(7):4598-607.

## CHEMICAL PROPERTIES

CAS number: 59865-13-3

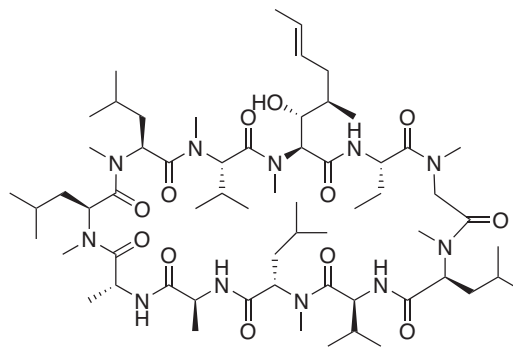
Formula: C<sub>62</sub>H<sub>111</sub>N<sub>11</sub>O<sub>12</sub>

Molecular weight: 1202.61 g/mol

Solubility: DMSO (50 mg/ml)

Working concentration: 50 nM- 1.5 μM

Structure:



## METHODS

### Preparation of Cyclosporin A stock solution (10 mM)

1. Weigh 10 mg of Cyclosporin A and place in a sterile tube.
2. Add 830 μl DMSO to 10 mg Cyclosporin A.
3. Vortex until complete solubilization.
4. Prepare aliquots and store stock solution at -20°C.

## RELATED PRODUCTS

| Product     | Description            | Catalog Code |
|-------------|------------------------|--------------|
| Rapamycin   | mTOR inhibitor         | tlrl-rap     |
| Bafilomycin | A1 autophagy inhibitor | tlrl-baf     |
| LY294002    | PI3K inhibitor         | tlrl-ly29    |
| Wortmannin  | PI3K inhibitor         | tlrl-wtm     |

## TECHNICAL SUPPORT

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