

# CL429 VacciGrade™

## TLR2 & NOD2-based adjuvant

Catalog # vac-c429

For research use only. Not for use in humans.

Version # 15J30-MT

### PRODUCT INFORMATION

#### Content:

- 5 mg CL429 VacciGrade™
- 10 ml sterile endotoxin-free physiological water (NaCl 0.9%)

#### Storage and stability

- CL429 VacciGrade™ is provided as a sterile white lyophilized powder and shipped at room temperature. Store at -20°C. Lyophilized product is stable for 1 year at -20°C.
- Upon resuspension, CL429 VacciGrade™ should be stored at 4°C. Resuspended product is stable for 6 months at 4°C.

#### Quality control

CL429 VacciGrade™ is a preclinical grade. It is prepared under strict aseptic conditions. The biological activity is tested in vitro and the endotoxin level determined for each batch. CL429 VacciGrade™ is guaranteed sterile and its endotoxin level is <1 EU/mg (measurement by HEK-Blue™ LPS Detection Kit 2).

### METHODS

#### Preparation of sterile stock solution (5 mg/ml)

- Add 1 ml of DMSO to the 5 mg CL429 VacciGrade™ vial to obtain a solution at 5 mg/ml.
- Vortex to homogenize.
- Store at 4°C.

*Note: Do not store resuspended product in plastic tubes.*

- Dilutions can be prepared using sterile endotoxin-free physiological water (provided).

**Working Concentration:** 20 - 50 µg/mouse

### DESCRIPTION

CL429 is a chimeric compound that stimulates both TLR2 and NOD2. This compound is composed of murabutide (NOD2 ligand) covalently linked to Pam2C (TLR2 ligand) via a spacer<sup>1</sup>. NOD2 is highly expressed at the mucosal level<sup>2,3</sup> and its activation induces the production of proinflammatory cytokines and autophagy<sup>4,5</sup>. TLR2 appears to have a special role in T cell polarization and differentiation<sup>6</sup>, mucosal homing receptor expression, and IgA production by human B cells<sup>7</sup>. CL429 was shown to induce synergistic human DC maturation in vitro and to significantly enhance both systemic and mucosal immunity against a vaccine antigen<sup>1</sup>. The very potent adjuvant activity of CL429 is associated with no apparent toxicity. This activity seems to be mediated by an optimal DC maturation process, which induces strong B and T cell stimulation and autophagy<sup>1</sup>.

1. Pavot V. *et al.*, 2014. Cutting edge: New chimeric NOD2/TLR2 adjuvant drastically increases vaccine immunogenicity. *J Immunol.* 193(12):5781-5. 2. Geddes K. *et al.*, 2009. Unleashing the therapeutic potential of NOD-like receptors. *Nat Rev Drug Discov.* 8(6):465-79. 3. Kobayashi KS. *et al.*, 2005. Nod2-dependent regulation of innate and adaptive immunity in the intestinal tract. *Science.* 307(5710):731-4. 4. Rubino SJ. *et al.*, 2012. Nod-like receptors in the control of intestinal inflammation. *Curr Opin Immunol.* 24(4):398-404. 5. Cooney R. *et al.*, 2010. NOD2 stimulation induces autophagy in dendritic cells influencing bacterial handling and antigen presentation. *Nat Med.* 16(1):90-7. 6. Borrello S. *et al.*, 2011. TLR2: a crossroads between infections and autoimmunity? *Int J Immunopathol Pharmacol.* 24(3):549-56. 7. Liang Y. *et al.*, 2011. Toll-like receptor 2 induces mucosal homing receptor expression and IgA production by human B cells. *Clin Immunol.* 138(1):33-40.

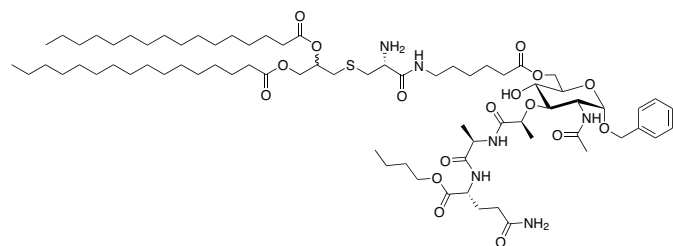
### CHEMICAL PROPERTIES

**Synonym:** Pam2C-Aca-Benzyl-Murabutide

**Formula:** C<sub>74</sub>H<sub>128</sub>N<sub>6</sub>O<sub>17</sub>S

**Molecular weight:** 1405.90

**Solubility:** 5 mg/ml in DMSO



### TECHNICAL SUPPORT

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## RELATED PRODUCTS

Product	Description	Catalog Code
<b>Adjuvants</b>		
AddaVax™	Squalene-oil-in-water	vac-adx-10
Alhydrogel® adjuvant 2%	Aluminium hydroxide gel	vac-alu-250
IFA	Incomplete Freund's adjuvant	vac-ifa-10
Poly(I:C) VacciGrade™	TLR3 agonist	vac-pic
MPLA VacciGrade™	TLR4 agonist	vac-mpla
Flagellin FliC VacciGrade™	TLR5 agonist	vac-fla
Gardiquimod VacciGrade™	TLR7 agonist	vac-gdq
Imiquimod VacciGrade™	TLR7 agonist	vac-imq
R848 VacciGrade™	TLR7/8 agonist	vac-r848
ODN 1826 VacciGrade™	Murine TLR9 agonist	vac-1826-1
ODN 2006 VacciGrade™	Human TLR9 agonist	vac-2006-1
N-glycolyl-MDPVaccigrade™	NOD agonist	vac-gmdp
<b>OVA Antigens</b>		
Ovalbumin EndoFit™	For <i>in vivo</i> use; endotoxin level <1EU/mg	vac-pova
Ovalbumin	For detection; Western, ELISA	vac-stova
Ova 257-264	For detection; ELISPOT	vac-sin
Ova 323-339	For detection; ELISPOT	vac-isq

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