

产品名称：雷西莫特
产品别名：Resiquimod

| 生物活性: | | | | |
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| Description | Resiquimod is a Toll-like receptor 7 and 8 (TLR7/TLR8) agonist that induces the upregulation of cytokines such as TNF- α , IL-6 and IFN- α . | | | |
| In Vitro | Resiquimod (R-848) induces both hapten- and allergen-specific circulating T cells, including TH2 effectors, to produce IFN- γ and even to lose the ability to produce IL-4[2]. Resiquimod (R848) enhances PBL proliferation in a dose-dependent manner, and increases the number of BrdU-positive cells in BrdU incorporation assay. Cells treated with R848 exhibits significantly increased (3.5-fold) luciferase (a reporter of NF- κ B activity) activity[3]. | | | |
| In Vivo | Resiquimod (R-848) (50 μ g/bird, i.m. route) significantly up-regulates the expression of IFN- α , IFN- β , IFN- γ , IL-1 β , IL-4, iNOS and MHC-II genes in SPF chicken[1]. | | | |
| Solvent&Solubility | In Vitro: DMSO : ≥ 30 mg/mL (95.43 mM) H₂O : < 0.1 mg/mL (insoluble) * " \geq " means soluble, but saturation unknown. | | | |
| | Preparing Stock Solutions | Solvent \ Mass Concentration | 1 mg | 5 mg |
| | | 1 mM | 3.1809 mL | 15.9043 mL |
| | | 5 mM | 0.6362 mL | 3.1809 mL |
| | | 10 mM | 0.3181 mL | 1.5904 mL |
| | *请根据产品在不同溶剂中的溶解度选择合适的溶剂配制储备液；一旦配成溶液，请分装保存，避免反复冻融造成的产品失效。 储备液的保存方式和期限 -80°C, 6 months; -20°C, 1 month。 -80°C 储存时，请在 6 个月内使用，-20°C 储存时，请在 1 个月内使用。 In Vivo: 请根据您的实验动物和给药方式选择适当的溶解方案。以下溶解方案都请先按照 In Vitro 方式配制澄清的储备液，再依次添加助溶剂： ——为保证实验结果的可靠性，澄清的储备液可以根据储存条件，适当保存；体内实验的工作液，建议您现用现配，当天使用； 以下溶剂前显示的百分比是指该溶剂在您配制终溶液中的体积占比；如在配制过程中出现沉淀、析出现象，可以通过加热和/或超声的方式助溶 | | | |
| | 1.请依序添加每种溶剂： 10% DMSO→40% PEG300 →5% Tween-80 → 45% saline Solubility: ≥ 2.5 mg/mL (7.95 mM); Clear solution 此方案可获得 ≥ 2.5 mg/mL (7.95 mM, 饱和度未知) 的澄清溶液。 以 1 mL 工作液为例，取 100 μ L 25.0 mg/mL 的澄清 DMSO 储备液加到 400 μ L PEG300 中，混合均匀；向上述体系中加入 50 μ L Tween-80，混合均匀；然后继续加入 450 μ L 生理盐水定容至 1 mL。 | | | |
| | 2.请依序添加每种溶剂： 10% DMSO→ 90% (20% SBE- β -CD in saline) Solubility: ≥ 2.5 mg/mL (7.95 mM); Clear solution 此方案可获得 ≥ 2.5 mg/mL (7.95 mM, 饱和度未知) 的澄清溶液。 以 1 mL 工作液为例，取 100 μ L 25.0 mg/mL 的澄清 DMSO 储备液加到 900 μ L 20% 的 SBE- β -CD 生理盐水溶液中，混合均匀。 | | | |
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| | <p>3.请依序添加每种溶剂： 10% DMSO →90% corn oil</p> <p>Solubility: ≥ 2.5 mg/mL (7.95 mM); Clear solution</p> <p>此方案可获得 ≥ 2.5 mg/mL (7.95 mM, 饱和度未知) 的澄清溶液, 此方案不适用于实验周期在半个月以上的实验。</p> <p>以 1 mL 工作液为例, 取 100 μL 25.0 mg/mL 的澄清 DMSO 储备液加到 900 μL 玉米油中, 混合均匀。</p> |
| References | <p>[1]. Sachan S, et al. Adjuvant potential of resiquimod with inactivated Newcastle disease vaccine and its mechanism of action in chicken. <i>Vaccine</i>. 2015 Aug 26;33(36):4526-32.</p> <p>[2]. Brugnolo F, et al. The novel synthetic immune response modifier R-848 (Resiquimod) shifts human allergen-specific CD4+ TH2 lymphocytes into IFN-gamma-producing cells. <i>J Allergy Clin Immunol</i>. 2003 Feb;111(2):380-8.</p> <p>[3]. Zhou ZX, et al. Immune effects of R848: evidences that suggest an essential role of TLR7/8-induced, Myd88- and NF-κB-dependent signaling in the antiviral immunity of Japanese flounder (<i>Paralichthys olivaceus</i>). <i>Dev Comp Immunol</i>. 2015 Mar;49(1):113-20.</p> |
| 实验参考: | |
| Cell Assay | <p>For inhibition of lysosomal acidification, cells are incubated with 10 μM CQ for 1 h before Resiquimod (R848) treatment. After treatment, 20 μL of 5 mg/mL MTT is added to the plate. The plate is incubated at 22°C for 4 h, and 200 μL dimethyl sulfoxide is added to the plate to dissolve the reduced formazan. The plate is then read at 490 nm with a microplate reader. To determine the effect of Myd88 inhibition on R848-induced cell proliferation, the Myd88 inhibitor Pepinh-MYD and the control peptide Pepinh-Control are added to PBL at the concentration of 50 μM, and the plate is incubated at 22°C for 6 h. After incubation, the cells are treated with R848 and subjected to MTT assay as above. To determine the effect of NF-κB inactivation on R848-induced cell proliferation, BAY-11-7082, an irreversible inhibitor of IκB-α phosphorylation, is added to the cells at the concentration of 1 μM, and the plate is incubated at 22°C for 1 h. After incubation, the cells are treated with R848 and subjected to MTT assay as earlier. All experiments are performed three times. [3]</p> |
| Animal Administration | <p>A total of 40 SPF chickens of two-week old are allotted to one of the following four experimental groups (n=10/group): Group A: PBS control; Group B: inactivated NDV vaccine; Group C: commercial oil adjuvanted inactivated NDV vaccine prepared from lentogenic strain and Group D: combination of inactivated NDV vaccine and R-848 (50 μg/bird). Vaccine or PBS is administered by intramuscular route in the thigh muscle. A booster dose is given 14-day post immunization (d.p.i).</p> <p>Two weeks post-booster, experimental SPF birds are challenged with velogenic strain of NDV (10^5 ELD₅₀ per bird) intramuscularly. Clinical signs and mortality are observed daily till 14 day post-challenge (d.p.c). Cloacal swabs (n=6/group) are collected from the birds on day 0, 4, 7 and 14 post-challenge and inoculated into 10-day old embryonated chicken eggs (n=3 eggs/sample) through intra-allantoic route. Three day post-inoculation, the allantoic fluid is checked for the NDV growth by spot haemagglutination using 10% chicken RBC. [1]</p> |
| Kinase Assay | <p>For luciferase assay, FG-9307 cells are transfected with the firefly NF-κB-specific luciferase reporter vector pNFκB-Met-Luc2. Transfection efficiency is monitored by co-transfection with the pSEAP2 control vector, which constitutively expresses the human secreted enhanced alkaline phosphatase (SEAP). Then the cells are treated with Resiquimod (R848, 1 μg/mL), CQ (10 μM), CQ plus R848 or PBS and incubated at 22°C for 24 h. The culture medium of the transfectants is then analyzed for luciferase activity and SEAP activity using Luciferase Assay Kit and the Great EscAPe™ SEAP</p> |

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| | Chemiluminescence Detection Kit, respectively. The assay is performed three times. [3] |
| References | <p>[1]. Sachan S, et al. Adjuvant potential of resiquimod with inactivated Newcastle disease vaccine and its mechanism of action in chicken. <i>Vaccine</i>. 2015 Aug 26;33(36):4526-32.</p> <p>[2]. Brugnolo F, et al. The novel synthetic immune response modifier R-848 (Resiquimod) shifts human allergen-specific CD4+ TH2 lymphocytes into IFN-gamma-producing cells. <i>J Allergy Clin Immunol</i>. 2003 Feb;111(2):380-8.</p> <p>[3]. Zhou ZX, et al. Immune effects of R848: evidences that suggest an essential role of TLR7/8-induced, Myd88- and NF-κB-dependent signaling in the antiviral immunity of Japanese flounder (<i>Paralichthys olivaceus</i>). <i>Dev Comp Immunol</i>. 2015 Mar;49(1):113-20.</p> |



源叶生物