

Incomplete Freund's adjuvant (IFA)

Cat. No.:	HY-153808A
Target:	Others
Pathway:	Others
Storage:	4°C, protect from light * In solvent : -80°C, 6 months; -20°C, 1 month (protect from light)

Incomplete Freund's adjuvant (IFA)

BIOLOGICAL ACTIVITY

Description

Incomplete Freund's adjuvant (IFA) (Montanide ISA-51) is an immunoadjuvant emulsified with antigen by its discoverer Jules T. Freund. Incomplete Freund's adjuvant (IFA) does not contain inactivated tuberculosis bacilli and consists of petroleum jelly containing lanolin. Incomplete Freund's adjuvant (IFA) induces high antibody titers and long-lasting effector T cell responses with no long-term effects on collagen disease, tumors, or death. Complete Freund's adjuvant (CFA) (HY-153808) is another type of Freund's Adjuvant that stimulates a stronger immune response^{[1][2]}.

In Vivo

Incomplete Freund's adjuvant (IFA) can be used in animal modeling to establish a mouse model of persistent inflammatory pain. Incomplete Freund's adjuvant (IFA) induces antibody responses, while Complete Freund's adjuvant (CFA) (HY-153808) preferentially induces autoantigen-specific responses^[2]. Complete Freund's adjuvant (CFA) has low plasma clearance (22%)^[4].

1. Induction of experimental autoimmune myocarditis (EAM)^[1]

- Background

Complete Freund's adjuvant (CFA) induces myocarditis by activating the immune system and enhancing the antigen-specific immune response.

- Specific Modeling Methods

Mice: A/J, BALB/c, and IL6KO BALB/c • male • 6-8-week-old

Administration: 5mg/ml • s.c. • twice

(1) On day 0, all mice additionally received 500 ng of pertussis toxin (HY-112779) (i.p.)

(2) On days 0 and 7, mice received subcutaneous injections peptide emulsified in CFA supplemented with 5

mg/mL of Mycobacterium tuberculosis, strain H37Ra.

- Modeling Indicators

Histological analysis: Myocarditis severity was assessed by histology and relative heart weight.

Molecular changes: Test serum levels of total IgG, IgG1, IgG2a, IgG2b, IL-1b and IL6.

- Correlated Product(s): Incomplete Freund's adjuvant (IFA) (HY-153808A)

- Opposite Product(s):

2. Induction of Neuropathic Pain^{[2][3]}

- Background

Complete Freund's adjuvant (CFA) releases inflammatory mediators TNF- α and IL-6 in body which can activate peripheral nerve endings and act on pain nerve endings, resulting in neuropathic pain^{[2][3]}.

- Specific Modeling Methods

Mice: C57BL/6J • male • 8-week-old

Administration: 20 μ l • s.c. • once

Note

(1) Inject Complete Freund's Adjuvant (CFA) without dilution into the plantar area of the hind paw.

(2) Tests PWT and PWL for both hind paws corresponding to before and 24, 48, 72 h after CFA injection.

- Modeling Indicators

Behavior Observation: Detect paw withdrawal threshold (PWT) and paw withdrawal latency (PWL).

- Correlated Product(s): Galantamine (HY-76299)

- Opposite Product(s): Mecamylamine (HY-B1395A)

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Melssen MM, et al. Peptide emulsions in incomplete Freund's adjuvant create effective nurseries promoting egress of systemic CD4+ and CD8+ T cells for immunotherapy of cancer. J Immunother Cancer. 2022 Sep;10(9):e004709.

[2]. Fontes JA, et al. Complete Freund's adjuvant induces experimental autoimmune myocarditis by enhancing IL-6 production during initiation of the immune response. Immun Inflamm Dis. 2017 Jun;5(2):163-176.

Caution: Product has not been fully validated for medical applications. For research use only.

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