



EU EARLY WARNING SYSTEM FORMAL NOTIFICATION

Date issued	21 December 2022	RCS ID	EU-EWS-RCS-FN-2022-0039
Issued by	EMCDDA	Transmitted by	Action on New Drugs Sector, EMCDDA
Subject	Formal notification of <i>N</i> -(1-amino-3,3-dimethyl-1-oxobutan-2-yl)-1 <i>H</i> -indazole-3-carboxamide (ADMB-INACA; ADB-INACA) as a new psychoactive substance under the terms of Regulation (EC) No 1920/2006 and Council Framework Decision 2004/757/JHA		

1. Read me first

This document provides formal notification of the analytical identification of *N*-(1-amino-3,3-dimethyl-1-oxobutan-2-yl)-1*H*-indazole-3-carboxamide (ADMB-INACA; ADB-INACA) for the first time in Europe.

There is limited information available on the pharmacology and toxicology of ADMB-INACA. ADMB-INACA, unlike most synthetic cannabinoids monitored by the EMCDDA, does not contain a tail moiety. Based on its chemical structure and its similarity to other cannabinoids, such as ADB-FUBINACA, it cannot be excluded that the substance acts as a cannabinoid receptor agonist and is therefore formally notified based on a precautionary principle.

Please report any additional data you have on this substance to: ews@emcdda.europa.eu

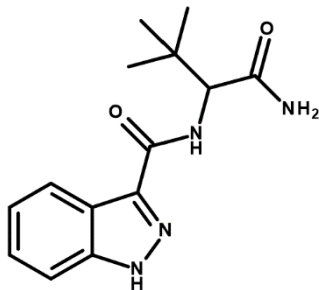
2. Data use restrictions

As with all formal notifications issued by the EU EWS remember that they may contain information that could be regarded as sensitive. Should you provide some of the information in this notification to other groups we would ask that you exercise your best judgment on what information needs to be provided. If you have any questions in this respect, please contact us.

3. Names of substance and other identifiers

- IUPAC name: *N*-(1-amino-3,3-dimethyl-1-oxobutan-2-yl)-1*H*-indazole-3-carboxamide
- Chemical names: *N*-(1-carbamoyl-2,2-dimethyl-propyl)-1*H*-indazole-3-carboxamide
- Common name: ADMB-INACA
- Other names: ADB-INACA; MAB-INACA
- Chemical formula: C₁₄H₁₈N₄O₂
- Molecular weight: 274.32
- CAS Registry number: 1887742-42-8 (*S*-isomer)
- InChIKey: UFECWXZSRFBSHC-UHFFFAOYSA-N

Molecular structure



4. Substance classification

Synthetic cannabinoid

5. Detection

Type: Seizure

ADMB-INACA has also been identified in white solid material on white paper seized in the US and reported in December 2022 by NMS Labs – Criminalistic Laboratory, the Center for Forensic Science Research & Education (CFSRE) and NPS Discovery [1].

6. Chemistry and Analysis

Chemical classification: azacyclic; azole; indazole

ADMB-INACA, which can also be known as ADB-INACA, is a synthetic cannabinoid which contains an amino dimethyl butanone linked group (ADMB), an indazole core (INA) and a carboxamide linker (CA) but does not contain a tail moiety. The letter code system 'ADMB' follows the naming approach change for the amino dimethyl butanone linked group as described in the recently published 'EMCDDA framework and practical guidance for naming synthetic cannabinoids', which was previously referred to using the code 'ADB' [2].

ADMB-INACA and MDMB-INACA, formally notified in August 2022, are structurally related, both containing indazole cores, carboxamide linkers and no tails but differ in the linked group present, a dimethyl methyl butanoate linked group (MDMB) compared to an ADMB linked group. ADMB-INACA is also structurally related to other recently formally notified synthetic cannabinoids, also containing no tail, such as: MDMB-7Br-INACA, CUMYL-INACA, MDMB-5Br-INACA and ADB-5Br-INACA.

ADMB-INACA shares structural similarities with the internationally controlled ADB-FUBINACA (Schedule II of the 1971 United Nations Single Convention on Psychotropic Substances). ADMB-INACA differs from ADB-FUBINACA due to the absence of the fluorobenzyl tail (FUB).

A reference standard is available for the *S*-isomer of ADMB-INACA and an λ_{max} (ultraviolet wavelength of maximum absorbance) of 295 nm is reported [3]. It is soluble in DMF (11 mg/ml), DMSO (5 mg/ml), ethanol (3 mg/ml) and PBS (pH 7.2; 0.12 mg/ml) [3].

ADMB-INACA contains a stereogenic centre and therefore two possible enantiomers may exist.

7. Pharmacology and toxicology

Pharmacological classification: cannabinoid

There is limited information available on the pharmacology and toxicology of ADB-INACA. Based on its structural similarity with other synthetic cannabinoids, such as ADB-FUBINACA, ADB-INACA is expected to act as a cannabinoid receptor agonist.

In an investigation of the human metabolic fate of ADB-PINACA and 5F-ADB-PINACA, incubated for three hours with pooled cryopreserved human hepatocytes and analysed by liquid chromatography—high-resolution mass spectrometry, ADB-INACA was identified as a metabolite in both synthetic cannabinoids [4]. *N*-depropylation of ADB-PINACA yielded ADB-INACA (A4) and the authors noted that A4 has also been reported in ADB-FUBINACA metabolism after ‘methylenefluorophenyl loss with a low intensity’ [4]. *N*-defluoropropylation of 5F-ADB-PINACA also yielded ADB-INACA (F4) [4].

8. References

- [1] <https://www.cfsre.org/images/monographs/ADB-INACA-121422-NMSLabs-Report.pdf>
- [2] Pulver B, et al. EMCDDA framework and practical guidance for naming synthetic cannabinoids. *Drug Testing and Analysis*. 2022; 1-22.
- [3] <https://www.caymanchem.com/product/37729/adb-inaca>
- [4] Carlier J, et al. Distinguishing intake of new synthetic cannabinoids ADB-PINACA and 5F-ADB-PINACA with human hepatocyte metabolites and high-resolution mass spectrometry. *Clinical Chemistry*. 2017;63(5):1008-21.