MeetingsPremium
MP Journal of Medical Research
Journal of poster communications · ISSN application in progress
Vol. 1 · 2026-0041
OPEN ACCESS

TYPE
Poster communication

SPECIALTY
Microbiology

PRESENTED AT
7th Congress of Pharmacy in North Macedonia, Ohrid, 5–9 October 2022

PUBLISHED
26 October 2026

DOI
10.5281/zenodo.23675302

CORRESPONDENCE
Marjan Velkovski

KEYWORDS
Cannabis oil · Microbiological quality control · Analytical method · Recovery percent · Pharmacopoeia

LICENSE
CC BY 4.0. © The authors.

POSTER COMMUNICATION · MICROBIOLOGY

Development and validation of analytical method for microbiological quality control of cannabis oil solution

Marjan Velkovski[1]*, Damjan Shushleski[1], Irena Slaveska Spirevska[1], Elena Metcheva[1], Silvana Ristevska[1], Ivana Karchicka[1]

[1] Replek Farm, Kozle str. 188, Skopje, North Macedonia
* Corresponding author: Marjan Velkovski

KEY MESSAGES

1. Cannabis oil solution shows no antimicrobial interference in microbiological quality control tests.
2. The method allows reliable recovery of specified microorganisms from the product matrix.
3. Stabilization of the product suspension is achieved by temperature controlled dispersion without surfactants.

ABSTRACT

Introduction. As of January 22, 2021, the US FDA has approved Cannabidiol (CBD) and Tetrahydrocannabinol (THC) containing medications for therapeutic use. Exogenous cannabinoids, such as THC and CBD, and their effect on the endocannabinoid system are frequently discussed regarding their role in oncology related diseases.

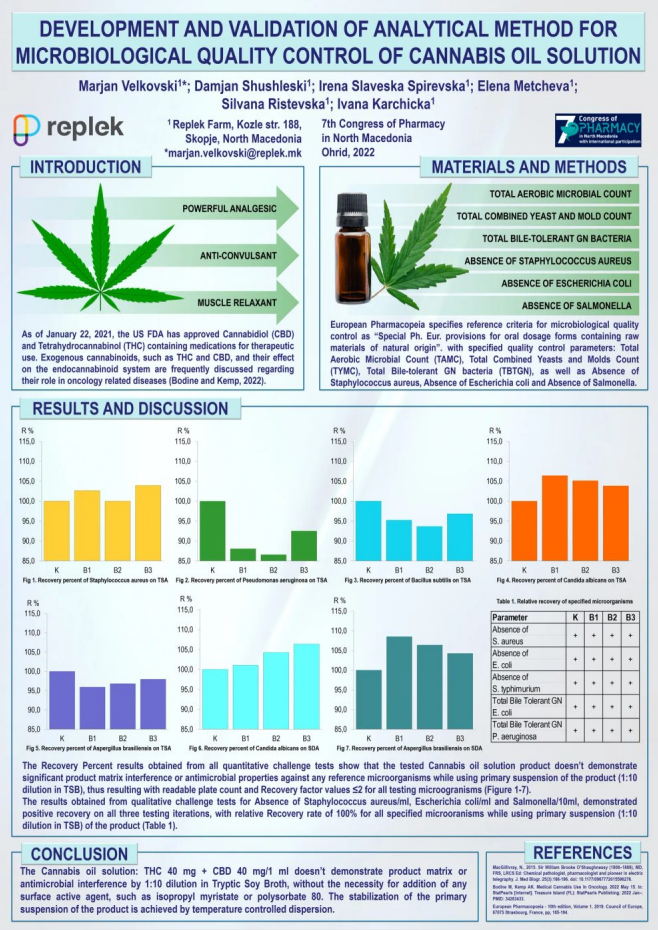
Materials and methods. European Pharmacopoeia specifies reference criteria for microbiological quality control as "Special Ph. Eur. provisions for oral dosage forms containing raw materials of natural origin" with specified quality control parameters: Total Aerobic Microbial Count (TAMC), Total Combined Yeasts and Molds Count (TYMC), Total Bile-tolerant GN bacteria (TBTGN), as well as Absence of Staphylococcus aureus, Absence of Escherichia coli and Absence of Salmonella.

Results. The Recovery Percent results obtained from all quantitative challenge tests show that the tested Cannabis oil solution product doesn't demonstrate significant product matrix interference or antimicrobial properties against any reference microorganisms while using primary suspension of the product (1:10 dilution in TSB), thus resulting with readable plate count and Recovery factor values ≤2 for all testing microorganisms. The results obtained from qualitative challenge tests for Absence of Staphylococcus aureus/ml, Escherichia coli/ml and Salmonella/10ml, demonstrated positive recovery on all three testing iterations, with relative Recovery rate of 100% for all specified microorganisms while using primary suspension (1:10 dilution in TSB) of the product.

Conclusion. The Cannabis oil solution: THC 40 mg + CBD 40 mg/1 ml doesn't demonstrate product matrix or antimicrobial interference by 1:10 dilution in Tryptic Soy Broth, without the necessity for addition of any surface active agent, such as isopropyl myristate or polysorbate 80. The stabilization of the primary suspension of the product is achieved by temperature controlled dispersion.

Online record, HD poster
journal.meetingspremium.com/p/2026-0041

POSTER



REFERENCES

1. MacGillivray, N., 2015. Sir William Brooke O'Shaughnessy (1808–1889), MD, FRS, LRCS Ed: Chemical pathologist, pharmacologist and pioneer in electric telegraphy. J. Med Biogr. 25(3):186-196. doi: 10.1177/0967772015596276.

2. Bodine M, Kemp AK. Medical Cannabis Use In Oncology. 2022 May 15. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2022 Jan-. PMID: 34283433.

3. European Pharmacopoeia - 10th edition, Volume 1, 2019. Council of Europe, 67075 Strasbourg, France, pp, 185-194.

CITE THIS PUBLICATION

Velkovski M, Shushleski D, Slaveska Spirevska I, Metcheva E, Ristevska S, Karchicka I. Development and validation of analytical method for microbiological quality control of cannabis oil solution [Poster]. MP J Med Res. 2026;1:2026-0041. doi:10.5281/zenodo.23675302

Vancouver format · APA, BibTeX and RIS on the online record

Original poster in high definition on the online record.

SOURCE
Presented at 7th Congress of Pharmacy in North Macedonia, Ohrid, 5–9 October 2022. Republished with the agreement of the authors.

PROCESS
Record checked by the editorial team, approved by the corresponding author, then reviewed by the journal's editorial board.

INDEPENDENCE
Partners and advertisers take no part in scientific selection.

© The authors. Open access publication under the Creative Commons Attribution 4.0 International (CC BY 4.0) — https://creativecommons.org/licenses/by/4.0/ license. Published by MeetingsPremium LLC, 75 East 3rd Street, Sheridan, WY 82801, United States.