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منظمة التعاون الاسلامي
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COMSTECH
ORGANISATION DE LA COOPERATION ISLAMIQUE
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SCIENTIFIQUE ET TECHNIQUE

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December 24, 2025

Review Letter of Ph.D. Thesis for Ahmad Izaz

I am pleased to provide a review letter for the Ph.D. thesis of Mr. Ahmad Izaz, a Ph. D, candidate at al-Farabi Kazakh National University. I serve as an external Ph. D. co-supervisor for his Ph.D. thesis entitled "Using Advanced Spectroscopic and Chromatographic Techniques to Study Biotransformation of Steroidal Drugs and Phytochemical Constituents of *Tussilago farfara* L."

The quality of the submitted thesis is excellent. The research is novel, and significant, combining classical natural products chemistry with modern analytical and spectroscopic methods.

Mr. Izaz's Ph. D. research focuses on two key areas:

1. Phytochemical investigation of *Tussilago farfara* L., involving isolation, structural elucidation, and profiling of bioactive constituents using techniques such as NMR, MS, UV, and IR spectroscopy, as well as chromatographic techniques like HPLC, and UPLC.

2. Biotransformation of steroidal drugs using microbial or enzymatic systems, and evaluating the structural and functional modifications *via* advanced analytical and spectroscopic techniques.

The work reflects a sound grasp of the scientific principles underlying each technique, as well as meticulous experimental execution. Mr. Izaz has demonstrated commendable technical proficiency, and has contributed valuable new findings to the fields of phytochemistry, natural product analysis, and biocatalysis.

Moreover, he has successfully disseminated his findings through publications in peer-reviewed scientific journals, including the following:

Izaz Ahmad, Salar Hafez Ghoran, Muhammad Yousuf, Humaira Zafar, Atia-tul-Wahab, Sammer Yousuf, Mushtaq Ahmad, Inam Gul, Bates Kudaibergenova, M. Iqbal Choudhary. Caffeoylquinic acid derivatives isolated from *Tussilago farfara* L. as potential anti-leishmanial agents; *In vitro* and *in silico* studies. ***Natural product Research,*** 2025. **(Impact Factor 2.1).**

1. **Izaz Ahmad**, Muhammad Atif, Bates Kudaibergenova[1], Humaira Zafar, Salar Hafez-Ghoran, Atia-tul-Wahab, Mushtaq Ahmad, Maria Sadia, Shamsheer Ali, M. Iqbal Choudhary. Fungal-Mediated Biocatalytic Transformation of Methylprednisolone Acetate into Potent Anti-Aromatase Inhibitors: *In vitro* and *in silico* Studies. ***Journal of Molecular Structure,*** 2025. **(Impact Factor 4.7)**.

2. **Izaz Ahmad**, Bates Kudaibergenov, Mushtaq Ahmad, Maria Sadia, M. Iqbal Choudhary, Salar Hafez-Ghoran. Coltsfoot (*Tussilago farfara* L.; Asteraceae): Modern methods of extraction, phytochemistry, nanoparticles synthesis, ethnopharmacology, and biological activities. ***Natural Product Research***, 2025. **(Impact Factor 2.1).**

In brief, I appreciate the quality of work, and pleased with Mr. Ahmad Izaz's progress toward the Ph.D. degree. He has shown an excellent potential for a successful career in scientific research and academia.

Sincerely,

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