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**PROSPECTS FOR THE CREATION OF IMPORT-SUBSTITUTING ANTIDIABETIC MEDICINES IN UZBEKISTAN****Alimova Umidaxon Omonjon qizi**

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Email: umidakhonalimova13@gmail.com<https://doi.org/10.5281/zenodo.20062648>**ARTICLE INFO**Received: 24th April 2026Accepted: 29th April 2026Online: 30th April 2026**KEYWORDS**

Antidiabetic medicines, import substitution, pharmaceutical manufacturing, diabetes mellitus, Uzbekistan, local production, medicinal plants.

ABSTRACT

The growing burden of diabetes mellitus in Uzbekistan has created an urgent need for expanding domestic pharmaceutical production of antidiabetic medicines. The dependence on imported drugs increases treatment costs and creates challenges related to supply stability and accessibility for patients. The present article evaluates scientific, technological, and economic prospects for the development of import-substituting antidiabetic medicines in Uzbekistan. Special attention is devoted to pharmaceutical manufacturing capacities, development of local active pharmaceutical ingredients, use of medicinal plant resources, and implementation of innovative dosage technologies. The study demonstrates that strengthening domestic pharmaceutical production may contribute to improving national healthcare sustainability and reducing external pharmaceutical dependency.

Introduction

The prevalence of diabetes mellitus has increased considerably over the last decade, becoming one of the most serious chronic diseases affecting both developed and developing countries. In Uzbekistan, the expansion of urban lifestyles, dietary changes, obesity, and decreased physical activity have accelerated the spread of type 2 diabetes among different population groups.

At present, a large percentage of antidiabetic medicines available in the pharmaceutical market are imported from foreign countries. Although imported medicines often meet international standards, their high cost may limit long-term treatment

accessibility for patients. In addition, fluctuations in international markets and logistical challenges can negatively affect the continuous supply of essential medicines.

For this reason, the issue of developing domestic antidiabetic medicines has become highly relevant for the pharmaceutical sector of Uzbekistan. Import substitution is not limited only to reducing foreign dependence; it also includes modernization of pharmaceutical technologies, development of scientific research, expansion of industrial capacities, and rational use of local raw materials.

Materials and Methods



The study was conducted through analytical review of scientific publications, pharmaceutical industry reports, national pharmacopeial standards, and regulatory documents related to antidiabetic medicine production.

The following aspects were evaluated:

- current pharmaceutical production capacities in Uzbekistan;
- availability of local medicinal and synthetic raw materials;

- pharmaceutical technologies used in dosage form manufacturing;
- economic importance of domestic pharmaceutical production;
- prospects for scientific and industrial development.

Particular attention was devoted to technological processes involved in the production of tablets, capsules, and dry extract-based antidiabetic formulations.

Table 1. Factors Supporting Development of Domestic Antidiabetic Medicines

Factor	Current status	Potential advantages	Expected impact
Medicinal plant resources	Widely available	Lower production costs	Expansion of herbal medicine production
Pharmaceutical enterprises	Rapidly developing	Modern equipment implementation	Growth of local manufacturing
Scientific institutions	Active research activity	Development of new formulations	Innovation in drug production
Government support	Increasing investment	Tax and industrial incentives	Strengthening pharmaceutical independence

Results and Discussion

The conducted analysis indicates that Uzbekistan possesses significant opportunities for the creation of import-substituting antidiabetic medicines. One of the main advantages is the availability of local medicinal plant resources that can be used as sources of biologically active compounds with hypoglycemic activity. Medicinal plants cultivated in Uzbekistan are suitable for pharmaceutical processing and may reduce dependence on imported plant raw materials. In addition to herbal resources, modernization of pharmaceutical manufacturing enterprises has created favorable

conditions for domestic medicine production. Pharmaceutical companies have introduced modern technologies for tablet compression, capsule filling, and extraction processes. Such technologies improve the quality, stability, and therapeutic effectiveness of antidiabetic medicines.

Another important factor is the increasing scientific interest in the production of combined medicines containing both synthetic and plant-derived active substances. Combined formulations may improve pharmacological effectiveness while simultaneously reducing adverse



reactions associated with prolonged therapy.

The pharmaceutical industry of Uzbekistan also benefits from growing collaboration between universities, scientific institutes, and industrial manufacturers. Such cooperation

accelerates development of new dosage forms and promotes implementation of innovative pharmaceutical technologies into industrial production.

Table 2. Comparison Between Imported and Domestic Antidiabetic Medicines

Parameter	Imported medicines	Domestic medicines	Development perspective
Price	Relatively high	More affordable	Improved accessibility
Supply stability	Dependent on international logistics	Locally controlled	Reduced shortages
Use of local raw materials	Limited	Extensive	Economic efficiency
Scientific contribution	External technologies	National innovation	Development of pharmaceutical science

Despite the positive tendencies, several challenges still remain. Domestic pharmaceutical enterprises require expansion of active pharmaceutical ingredient production, improvement of analytical quality control systems, and wider implementation of international GMP standards.

Another important issue concerns clinical evaluation of domestically produced medicines. Comprehensive pharmacological and clinical studies are necessary to confirm safety, efficacy, and therapeutic equivalence of import-substituting preparations.

Economic factors also play a significant role. Development of domestic medicines may reduce treatment costs for diabetic patients and improve access to long-term therapy. At the same time, local pharmaceutical production contributes to job creation, technological development, and strengthening of national pharmaceutical security.

Conclusion

The creation of import-substituting antidiabetic medicines in Uzbekistan represents an important strategic direction for the national healthcare and pharmaceutical sectors. Availability of local medicinal plant resources, modernization of pharmaceutical enterprises, and expansion of scientific research create favorable conditions for the development of domestic antidiabetic preparations.

Implementation of modern pharmaceutical technologies and expansion of local manufacturing capacities may significantly reduce dependence on imported medicines and improve accessibility of treatment for diabetic patients. Domestic pharmaceutical production additionally contributes to economic stability and development of national scientific potential.

Future research should focus on industrial production of pharmaceutical



substances, optimization of dosage forms, clinical evaluation of domestic medicines, and implementation of

international pharmaceutical quality standards.

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