

**A STUDY OF FIVE-COMPONENT CONDENSATION REACTIONS
INVOLVING HOMOVERATRYLAMINE, ETHYL ACETOACETATE,
AND *p*-NITROBENZALDEHYDE**

**A.A. Khudoyberdiyeva¹, S.N. Suyunova¹, J.X. Quljonov¹, A.Sh. Saidov¹,
Z.E. Urunbayeva², V.I. Vinogradova³**

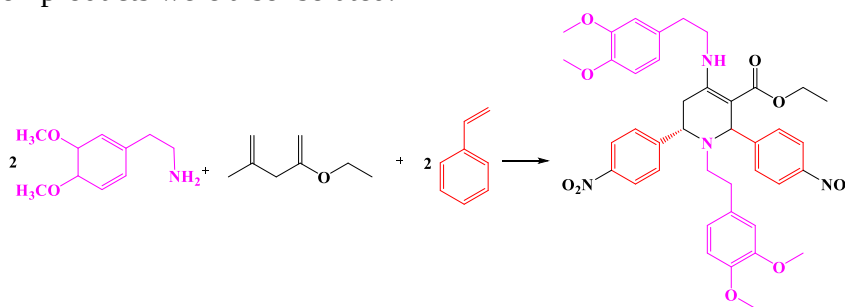
¹*Samarkand State University named after Sharof Rashidov, e-mail:
a.khudoyberdiyeva@mail.ru*

²*Samarkand State Medical Institute*

³*S.Y. Yunusov Institute of the Chemistry of Plant Substances, 77, Mirzo-Ulugbek Str.,
Tashkent, 100170, Uzbekistan*

This study describes a method for synthesizing enaminone derivatives via a five-component "one-pot" reaction. The reaction, conducted at room temperature with homoveratrylamine, acetoacetic ester, and *p*-nitrobenzaldehyde, yielded the expected product along with additional by-products. These results demonstrate the efficacy of multicomponent reactions.

Although enaminone derivatives do not occur in natural sources, their synthetic analogs are of significant importance in organic synthesis. In particular, these compounds are widely used as effective intermediates for creating various biologically active heterocyclic systems and complex organic molecules. Currently, methods for obtaining structurally complex compounds in a single step through multicomponent reactions are considered one of the most relevant fields of organic chemistry. Specifically, "one-pot" reactions involving 1,3-dicarbonyl compounds, aldehydes, and primary amines are distinguished by their high efficiency and convenience. This work studied the synthesis of new enaminone derivatives based on homoveratrylamine, acetoacetic ester, and *p*-nitrobenzaldehyde. The reaction was conducted in a single reaction medium at room temperature over several days. As a result of the study, in addition to the formation of the primary five-component product, several additional condensation products were also isolated.



In conclusion, multicomponent reactions are a promising method for synthesizing complex organic compounds in a short and efficient way. Compared to traditional multi-stage syntheses, this approach is distinguished by its operational simplicity, reduced time and reagent consumption, and environmental friendliness. Therefore, the synthesis of novel biologically active compounds based on multicomponent reactions is of great scientific importance, representing one of the most relevant and rapidly developing areas in modern organic synthesis.