

INDIGO HOSILALARINING ANTIOKSIDANT XUSUSIYATLARINI NAZARIY, ILMIY JIHATDAN TADQIQ QILISH

Maxamadiyev Sharofiddin Jumaboyevich

Guliston davlat universiteti

sharofximik@gmail.com

Sharofiddin Jumaboyevich Maxamadiyev

Guliston davlat universiteti

O'g'loy Abdurahmonova

Guliston davlat universiteti

Annotatsiya

Ushbu ishda "Indigofera tinctoria" o'simligi tarkibidan indigo ajratib olinib, olingan indigoning fizik-kimyoviy xususiyatlari va sifat va miqdor tarkibi UB-, IQ-spektroskopiya va YuSSX usullarida tahlil qilingan. Hamda indigo hosilalarining antioksidant xususiyatlarini nazariy ilmiy taqiq qilingan.

Kalit so'zlar: Indigofera, indigo, xromofor guruh, UB-spektroskopiya, IQ-spektroskopiya, yuqori samarali suyuqlik xromotografiyasi (YuSSX).

THEORETICAL AND SCIENTIFIC STUDY OF ANTIOXIDANT PROPERTIES OF INDIGO DERIVATIVES

Sharofiddin Jumaboyevich Mahammadiyev

O'g'loy Abdurahmanova

sharofximik@gmail.com Gulistan State University

Abstract

In this study, indigo was isolated from the indigofera tinctoria plant, and the physicochemical properties, quality and quantity of indigo were analyzed by UV-, IR-spectroscopy and HPLCH methods.

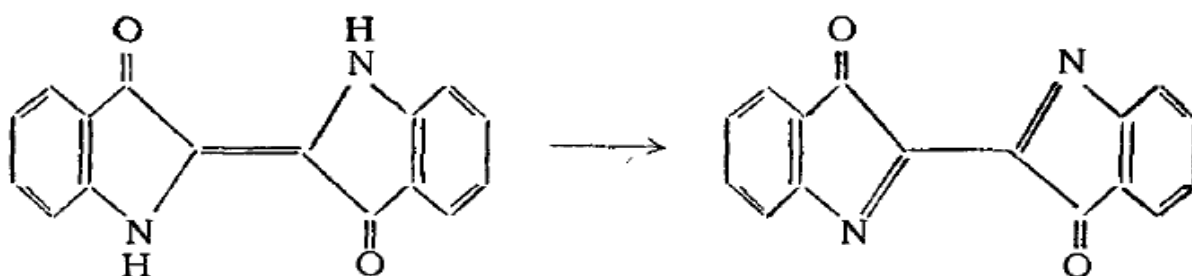
Keywords: Indigofera, indigo, chromophore group, UV-spectroscopy, IR-spectroscopy, high-performance liquid chromatography (HPLCH).



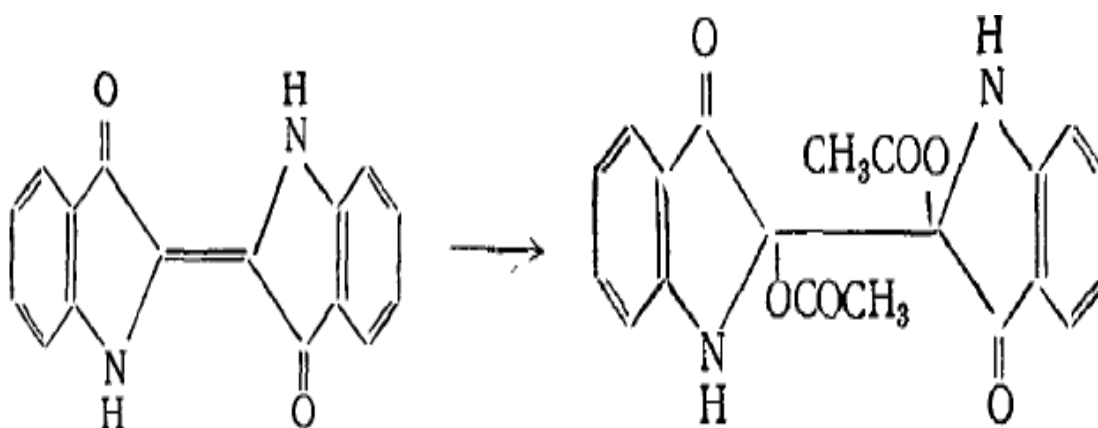
Kirish. Indigoning asosiy kimyoviy xossalari uning izatingacha oksidlanish reaksiyalarini ko'rishimiz mumkin. Oksidlovchi reagentlar sifatida dixromat, nitrat kislotalari, kaliy permanganat va ozondan foydalanish mumkin bo'ladi[22].

Izatinning galogen almashinish reaksiyalarini amalga oshirish uchun bromli yoki xlorli suv ta'sir ettiriladi. 5 – xlorizatin hosil qilishda nitrat kislotasi va atsetil xloriddan foydalaniladi.

Indigo turli oksidlovchilar ta'sirida turli moddalar hosil qiladi. Kumush oksid, qo'rg'oshin peroksid, kaliy permanganat yoki marganes (IV) oksid ishtirokida oksidlanganda quyidagi degidroindigo hosil bo'ladi.

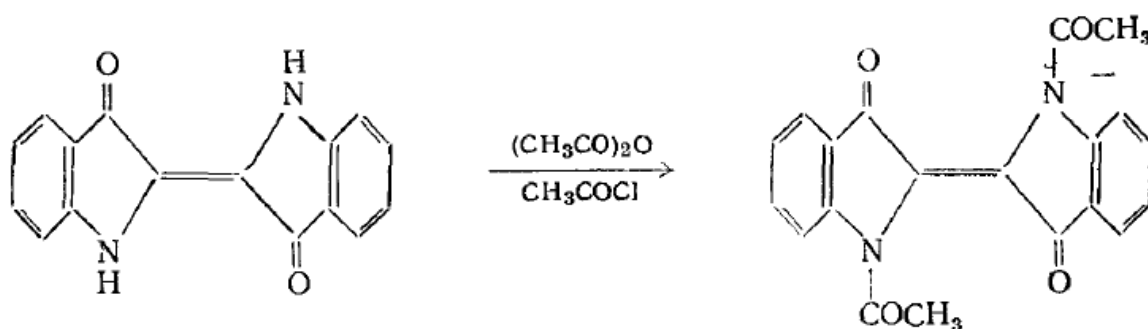


Oksidlovchi sifatida kaliy permanganatning sirka kislotadagi eritmasidan foydalanilsa, diatsetat indigo hosil bo'ladi.



Indigoning atsillanish reaksiyalarini ham amalga oshirish mumkin, buning uchun sirka kislota anhidridi va xlorangidridi yoki sirka va xlorid kislotalari aralashmalaridan foydalaniladi, N' N – diatsetilindigo hosil bo'ladi[23].

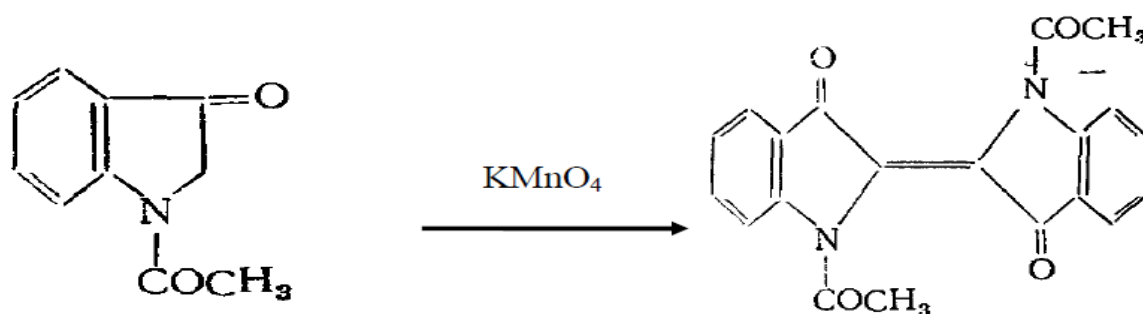




Indigo

N' N – diatsetilindigo

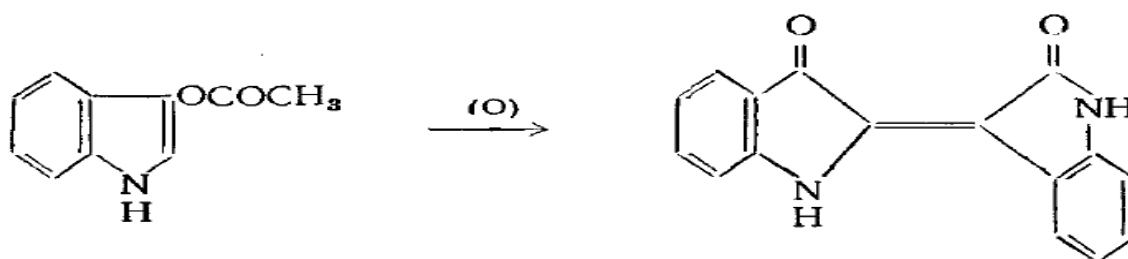
N' N – diatsetilindigoni sintez qilishda boshqacha usuldan ham foydalanishimiz mumkin bo'ladi. Dastlab indoksil tarkibiga atsetil kiritib so'ngra kaliy permanganat ta'sir ettirish orqali ham olish mumkin.



1-atsetil indoksil

N' N – diatsetilindigo

Boshqa usulda o-atsetil indoksil oksidlanganda atsetil guruh bilan boshqacharoq jarayon yuz beradi va indigodan farqli modda indirubin hosil bo'ladi.



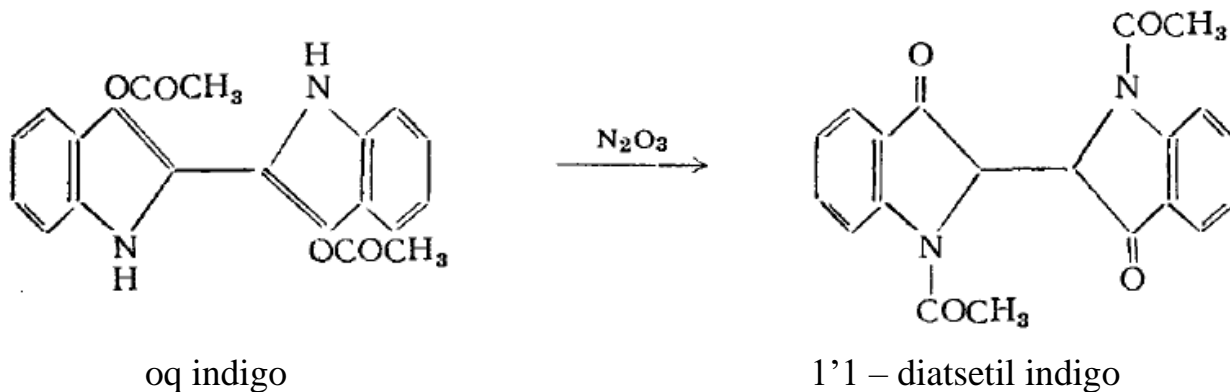
1-atsetil indoksil

indirubin

Agar indigo sirka angidridi, natriy atsetat va zux kukunlari ishtirokida qatya ishlansa, ishqorda erimaydigan oq indigo birikmasi hosil bo'ladi. Oq indigoni



ishqoriy eritmasini atsetillash uchun sirka angidridi, prapion kislota angidridi va benzl xloriddan foydalanish mumkin. Olingan diatsetilli birikma azot (III) oksidi ishtirokida oksidlansa, qizil rangli 1'1 – diatsetil indigo hosil bo'ladi.



Ishqorda erimaydigan atsetilli oq indigo sirka angidridi va natriy atsetat bilan resksiya davom ettirilganda tetraetil indigo hosil bo'ladi

Mavzu dolzarbligi. Biologik faol birikmalarning biologik mavjudligini oshirish va umumiy zaxarlilik darajasini kamaytirish tamoyillaridan biri bu glikozidlanish hisoblanadi. Ma'lumki, glikozidlangan indollar saraton hujayralari o'sishining ingibitorlari sifatida ishlaydi. Oksindol molekulasiga glyukoza bo'lagining kiritilishi, aksincha, bu faollikning paydo bo'lishiga yordam berishi mumkin.

Tadqiqot ob'ektlari va usullari.

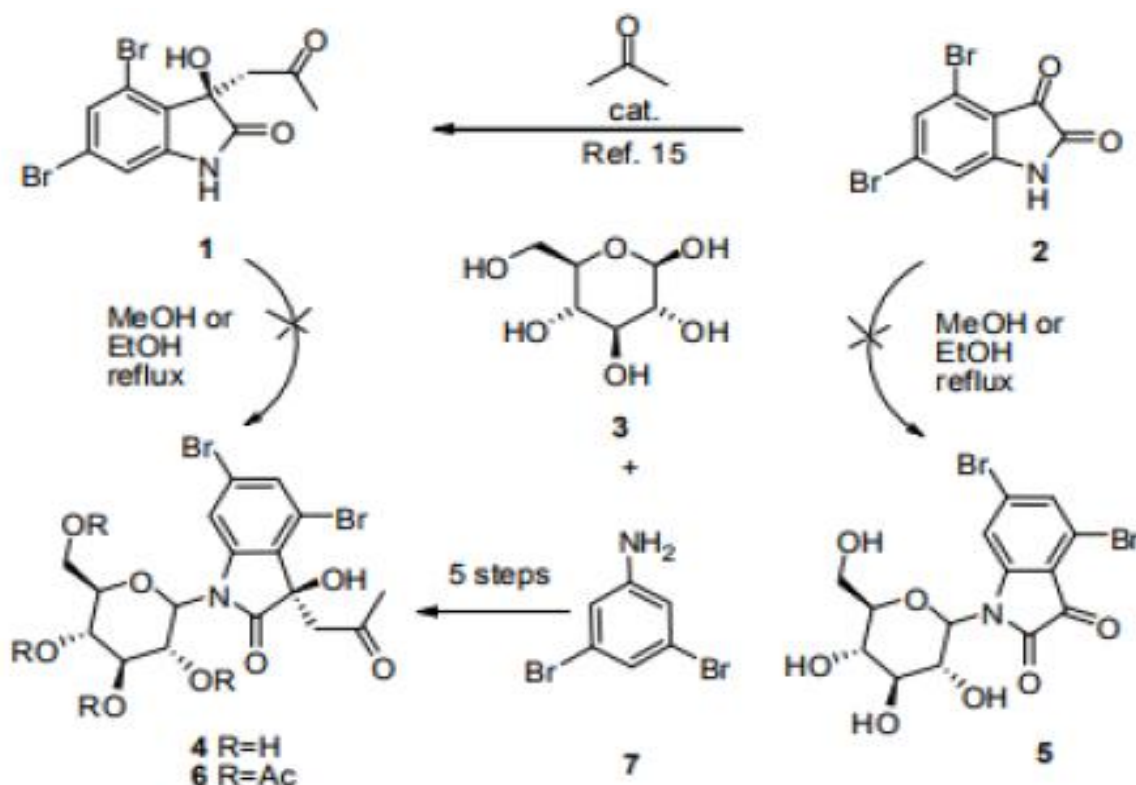
- tozalangan indigo
- yupqa qatlamli xromotografiya
- xar xil kerakli reagentlar

Olingan natijalar va ularning tahlili. 4,6-dibromogidroksioksindol 1 leykemiyaga qarshi tabiiy vositadir. Yaqinda konvulatomidin A 1 sintezi [1] tasvirlangan, shu jumladan 4,6-dibromizatin 2 ning xiral aminlar tomonidan katalizlangan aseton bilan aldol kondensatsiyasi, shu bilan birga bu alkaloidning glikozidlangan hosilalari sintezi haqida hech qanday ma'lumot yo'q.

Qaynatilgan spirtlarda glyukoza 3 bilan qaynatish orqali 4 va 5 qo'shimchalarini olish uchun konvulatomidin A 1 va uning prekursori 2 ni to'g'ridan-to'g'ri glikozidlash bo'yicha urinishlarimiz muvaffaqiyatsiz tugadi[2]. Ma'lumki, indigo guruhining bir qator glikozidlangan oksindollari orasida atsetillangan izoindigo N-glikozidlarining biologik faolligi avvalgilariga qaraganda yuqori. Ushbu tadqiqot



doirasida 3,5-dibromoanilin 7 dan 6-mahsulotning birinchi sintezi amalga oshirildi va uning antioksidant xususiyatlari o'rganildi.[2]



Xulosa

Indigo guruhining bir qator glikozidlagan hosilalari orasida izoindigo N-glikozidlari biologik faolliги avvalgilaridan yuqori ekanligi aniqlandi.

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