

AMINOPOLISAXARID-XITOZANDAN GLYUKOZAMIN GIDROKLORID OLISH. GLYUKOZAMIN GIDROKLORIDINING TURLI GETEROTSIKLIK AMINLAR BILAN SHIFF ASOSLARINI SINTEZ QILISH.

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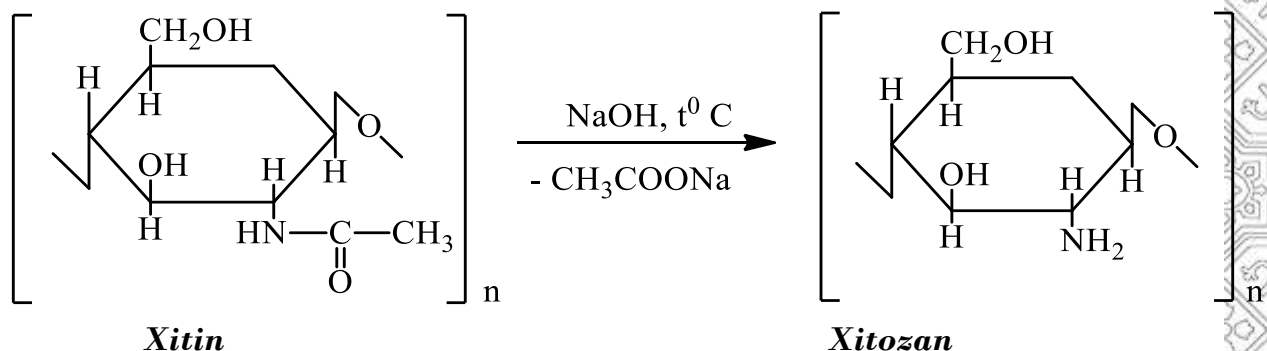
Annotatsiya Mazkur maqolada xitozandan glyukozamin gidroklorid olish, xitozan asosida glyukozamin gidrokloridining geterotsiklik aminlar bilan Shiff asoslarini sintez qilish bioorganik, analitik kimyoning eksperimental usullari tahlil qilingan va yoritib berilgan.

Annotation In this article, the experimental methods of obtaining glucosamine hydrochloride from chitosan, synthesizing glucosamine hydrochloride with heterocyclic amines on the basis of chitosan, bioorganic and analytical chemistry are analyzed and explained.

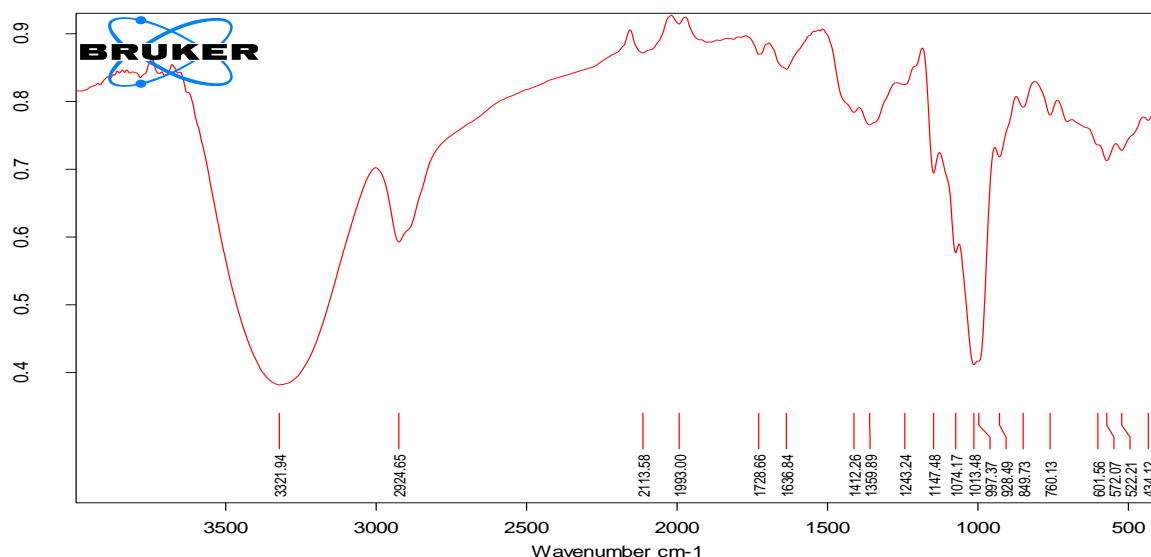
Kalit so‘zlar: xitozan, glyukozamin gidroklorid, Shiff asoslari, IQ spektri, deatsetillash, xromotografiya.

NATIJALAR

Dastlab ishni mahalliy arilar biomassasidan xitin ajratib olishdan boshlaymiz. Keyingi bosqichda olingan xitin moddasini 45% li NaOH eritmasi bilan 25 minut davomida qizdirish asosida atsetil guruhlarini chiqarib yuborish asosida xitozanni ajratib oldik , bu bosqich deatsetillash deb nomlanadi. Reaksiya quyidagi sxema bo‘yicha olib boriladi:



Quyida olingan xitozan moddasini IQ spektri keltirilgan:



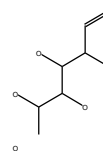
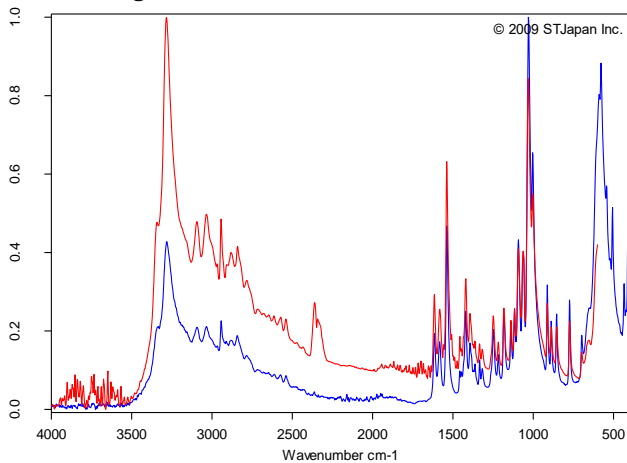
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1-rasm. Olingan xitozan moddasining IQ spektri.

Xitozanning spektrini xitin moddasining spektri bilan taqqoslaganimizda asosan 1539-1633 sm^{-1} sohadagi o‘zgarish-amino guruhga birikkan atsetil guruhning chiqib ketishi natijasi. 3427 sm^{-1} sohadagi yutilish signali erkin amino guruhga tegishlidir.

Ajratib olingan xitozanni 35% li HCl ta’sirida 3,5 soat davomida gidrolizlab, keyin distillangan suv solib sovutildi va 1 soat davomida qaynatildi. Hosil bo’lgan tiniq eritmadan cho’kma tushirish uchun ma’lum vaqt muzlatgichda saqlandi. Bunda oq kristallchalar holida glyukozamin*NS1 hosil bo’ldi. Olingan moddaning IQ spektri quyida keltirilgan:



Compound Name	D-GLUCOSAMINE HYDROCHLORIDE
Molecular Formula	C6H13NO5 HCl
Molecular Weight	215.6
CAS Registry Number	66-84-2
Other Name(s)	2AMINO-2-DEOXY-D-GLUCOSE HYDROCH
Melting Point	190 C
Sample Preparation	ATR single bounce
Reference	J02535/ A08264
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Занисс No.	6306

Color	Hit Quality	Compound name	CAS Number	Molecular formula	Molecular weight
	867	D-GLUCOSAMINE HYDROCHLORIDE	66-84-2	C6H13NO5 HCl	215.6

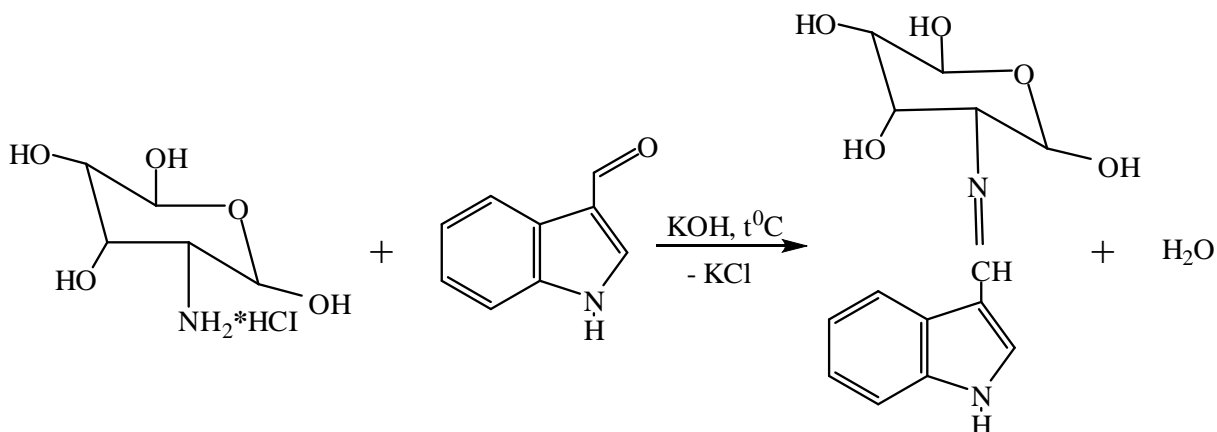
2-rasm. Glyukozamin gidroxlorid moddasining spektri.

Yuqorida ajratib olingan glyukozamin gidroxlorid asosida sintez qilingan moddalarning tuzilishini tekshirish uchun ularni BRUKER Fure-spektrometrlarida IQ

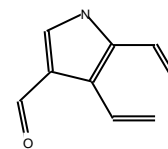
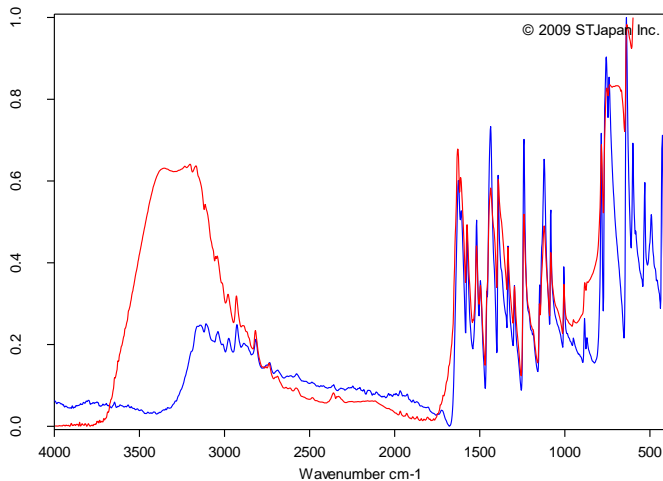
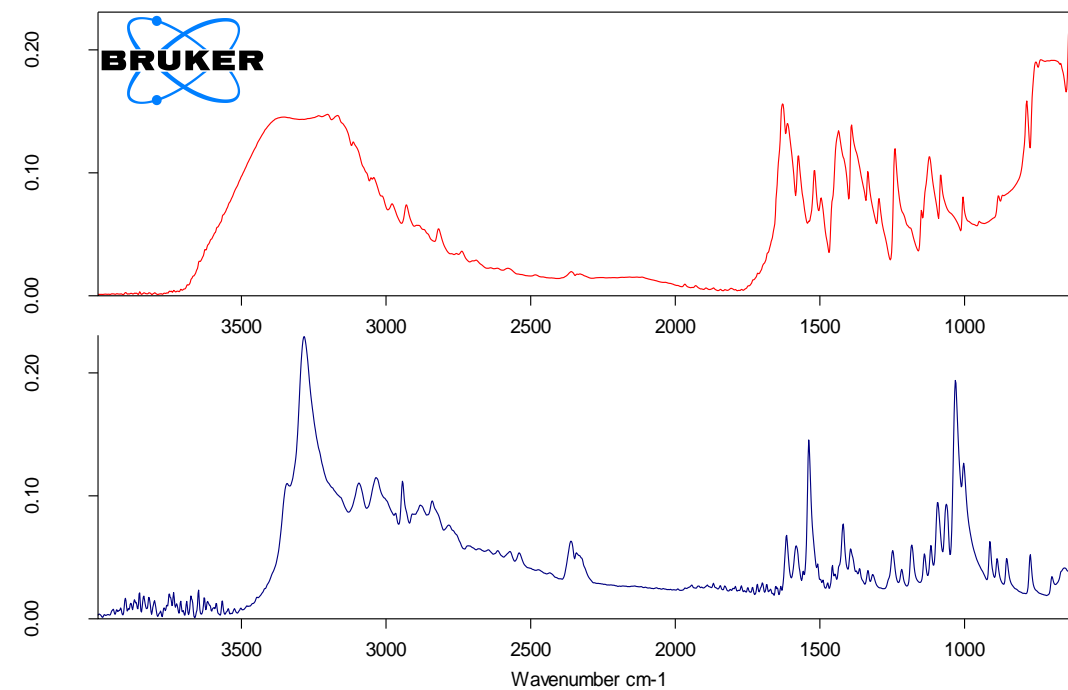
spektri olindi hamda bu spektr standart holatdagi (data banks of compounds) glyukozamin gidrokslorid moddasi bilan taqqoslangandagi natijalar keltirilgan. Ushbu natijalarga ko'ra olingan moddamiz deyarli o'xshash ekanligi isbotlangan.

Glyukozamin gidroksloridining tegishli hosilalari (SHIFF asoslari)ni olish.

Glyukozamin tarkibida mavjud bo'lgan aldegid guruh bilan aminlar orasida boradigan reaksiya natijasida hosil bo'ladigan moddalar Shiff asoslari yoki azometin hosilalari deb ataladi. Shiff asoslarini sintez qilish uchun glyukozamin gidroksloridi distillangan suvda eritib olinib, unga 1:1 mol nisbatda etil spirtida eritilgan indol 3-aldegididan qo'shdik. Hosil bo'lgan eritmani magnitli aralashtirgich yordamida 3 soat davomida 75-80° C da qizdirdik. Jarayon ishqoriy muhitda o'tkazildi. Har 25-30 minutda yupqa qatlamli xromotografiyadan foydalanib reaksiyaning borayotganligi tekshirib turildi. Yupqa qatlamli xromotografiya uchun Silifol-UV-254 (KAVALER Chexeslovakiya) plastinkalaridan foydalanildi. Eritmada reaksiya to'liq borganidan so'ng, hosil bo'lgan modda to'liq cho'kishi uchun ma'lum vaqt tindirib qo'yildi, so'ngra jigarrang cho'kma filtrlab olinib quritildi. Quyida reaksiya tenglamasi keltirilgan:



Quyida olingan Shiff asosining IQ spektri keltirilgan va bu spektr glyukozamin gidrokslorid spektri bilan taqqoslanadi:



Compound Name	3-INDOLECARBALDEHYDE
Molecular Formula	C9H7No1
Molecular Weight	145.16
CAS Registry Number	487-89-8
Other Name(s)	INDOLE-3-CARBOXALDEHYDE
Melting Point	195 C
Sample Preparation	ATR single bounce
Reference	J05001/ A08383
Copyright	(c) 2012 STJapan Inc.
Запись No.	6406

Color	Hit Quality	Compound name	CAS Number	Molecular formula	Molecular weight
	439	3-INDOLECARBALDEHYDE	487-89-8	C9H7No1	145.16

3-rasm. Glyukozaminning indol 3-aldegid bilan olingan Schiff asosining va glyukozamin gidroksloridining IQ spektri.

Yuqorida keltirilgan glyukozamin gidroksloridi va uning indol 3-aldegidi bilan olingan Schiff asoslari spektrlari o‘zaro taqqoslanganda 2800-3700 sm^{-1} sohalarda sezilarli darajada o‘zgarish yuz berganini va yutilish signallari ekranlanish hisobiga Schiff asosida kengayganini ko‘rishimiz mumkin. Shuningdek, Schiff asosidagi taxminan 1650 sm^{-1} sohadagi hosil bo‘lgan yangi yutilish signali azometin bog‘i hisobiga yuzaga kelgan. 800-1700 sm^{-1} sohadagi yuz bergan o‘zgarishlar reaksiya sodir bo‘lganligidan darak beradi.

XULOSA

Hozirgi kunda tibbiy ahamiyati tobora ortib borayotgan aminopolisaxarid-xitozandan glikozamin gidrokslorid sintez qilindi. Ajratib olingan glukozamin gidroksloridiga indol 3-aldegidi ta'sir ettirib Shiff asosi sintez qilindi. Har bir bosqichdan so'ng olingan namunalar IQ spektri orqali tekshirildi va o'zgarishlar tahlil qilindi. Sintez qilingan moddalarning biologik faolliklarini PASS online tizimi yordamida o'rganildi.

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