

ENDOFIT MIKROORGANIZMLARNING ISTIQBOLLI YO`NALISHLARI VA AHAMIYATI

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Annatsiya: Ushbu maqola endofit mikroorganizmlarning biologik faol metabolitlar sintez qilish xususiyatlari va ularning qo`llanilish sohalari haqida ma`lumot berib o`tamiz.

Kalit so`zlar: Endofit achitqilar, metabolitlar, biologik faol birikmalar, immunomodulyator, infeksiya.

Abstract: This article provides information about the properties of endophytic yeasts for the synthesis of biologically active metabolites and their fields of application.

Key words: Endophytic yeasts, metabolites, biologically active compounds

Kirish. Yangi virusli kasalliklar, ko'p dori-darmonlarga chidamli mikroorganizmlar va kam uchraydigan patogenlar tomonidan infeksiyalar odamlar, o'simliklar va hayvonlar salomatligi uchun yangi tahdidlar sifatida paydo bo'lmoqda. Shu sababli, ushbu kasalliklarga qarshi kurashish uchun yangi, xavfsiz va samarali dori-darmonlarni topish va ishlab chiqish doimiy ravishda talab qilinadi. Yaqin o'tmishda bizning dori-darmonlarni kashf qilish strategiyamiz asosan mikroorganizmlarga tayangan edi, bu yerda dunyodagi antibiotiklarning qariyb 80 foizi o'z kelib chiqishiga ega. Ushbu mikroorganizmlar asosan tuproqdan ajratilgan va dunyoning ko'pgina tuproqlari yangi mikroblarni qidirish uchun tekshirilgan. Shu sababli, yangi bioaktiv birikmalarni ishlab chiqaradigan mikroorganizmlar uchun yangi mikrobial yashash joylarini o'rganishga shoshilinch ehtiyoj bor.

Adabiyotlar tahlili. "Endofitlar" o'simlikning tirik to'qimalarida mavjud bo'lgan mikroorganizmlar bo'lib, ular o'zlarining xos o'simliklari bilan simbiotik, o'zaro yoki parazitlik kabi turli xil munosabatlar o'rnatadilar. O'simlik bilan munosabatlarida endofitlar mezbon o'simlikni himoya qilish va omon qolish uchun foyda keltiradigan ko'plab moddalarni ishlab chiqarish orqali o'simlikka hissa qo'shadi. Endofitik zamburug'lar turli xil biologik faollikka ega bo'lgan bioaktiv ikkilamchi metabolitlarning yangi manbai sifatida tan olingan, masalan, yangi antibiotiklar, antimikotiklar, immunosuppressantlar, saratonga qarshi birikmalar va boshqalar. Ularning biologik faol potentsiali birinchi marta dunyodagi birinchi ko'p milliard

dollarlik saratonga qarshi dori - paklitaksel (Taxol) yew o'simligi Taxus brevifoliadan ajratilgan endofit qo'ziqorin Taxomyces andreaedan olinganida tan olingan.

Material va metodlar. Hayvon turlarida bo'lgani kabi, o'simliklar ham endofitlarni, shuningdek, fillosfera va rizosfera (o'simlik sirtlari) bilan bog'liq mikroblarni o'z ichiga olgan bog'liq mikrofloraga ega va bu o'simlik mikrobiomasi hisoblanadi. Biroq, o'simlikning deyarli barcha to'qimalari va organlaridagi bu organizmlar endofitlar deb nomlanadi. Ikkilamchi metabolitlarni ajratishda bir qancha usullardan foydalaniladi, bularga ekstraksiya usulini ham misol qilib keltirish mumkin. *Ekstraksiya bu-* moddalarni eritmadan suvga aralashmaydigan suyuq organik fazaga o'tkazishga aytiladi.

Xromatografiya- gaz, suyuq, erimaydigan moddalar aralashmasini adsorbsion usulda ajratish va analiz qilish hisoblanadi.

Natija va muhokama. Ko'pincha zamburug'lar o'simlik to'qimalaridan eng ko'p tiklanadigan endofitlardir, ammo bakterial shakllar odatda ko'proq miqdorda uchraydi, ammo tur navlarida emas. Endofitning o'simlikdagi aniq biologik, biokimyoviy roli va uning o'simlik va boshqa endofitlar va o'simlik bilan bog'liq organizmlar bilan qanday o'zaro ta'siri qizg'in va sinchkovlik bilan o'rganilmagan. Biroq, hozirgi vaqtda endofitik mikroorganizmlarning 1% dan kamrog'i ma'lum ekanligi taxmin qilinmoqda, bu ularning aksariyati hali kashf qilinmaganligini ko'rsatadi. Shunday qilib, endofitik mikroblar insoniyat manfaati uchun yangi va foydali birikmalarni yoki bunday birikmalarning organik sintezi uchun yangi platformalarni ochish uchun potentsial manbadir. Bundan tashqari, O'zbekistonda ko'plab viloyatlarda shu kabi biologik xilma-xillik issiq nuqtalari hududida joylashgan o'simliklar turli xil kimyoviy salohiyatga ega yangi endofitlarga mezbon deb hisoblanadi. Maqolaning maqsadi endofitlar va ularning xususiyatlari to'g'risidagi ma'lumotlarning hozirgi holatini, izolyatsiyalash texnikasidagi yutuqlarni, yetishtirish usulini, kultural sharoitlarini va endofitik mikroorganizmlardan olingan metabolitlarning biologik faolligini ko'rib chiqishdir.

Xulosa. Endofitlar ko'plab o'simliklar va ekinlarda topilgan boshqa muhitdan, potentsial roli o'simliklardagi endofitlar yaxshi o'rganilmagan. Ushbu moddalar qishloq xo'jaligi, farmatsevtika, oziq-ovqat, to'qimachilik, qog'oz va uning metabolitini qo'llash sohalarida muhim rol o'ynaydi.

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