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DOI: 10.37609/akya.3785.c441

TARİHÇE VE TANIMLAR

Probiyotik kavramının temelleri, 20. yüzyılın başında Elie Metchnikoff'un çalışmalarıyla atılmıştır. Yüzyıldan fazla bir süre önce, Elie Metchnikoff laktik asit bakterilerinin (LAB; Tablo 1) daha uzun bir yaşam için faydalı olduğunu öne sürmüştür. Bu bakterilerin bağırsak mikrobiyotasını modüle ederek protein sindirimi sırasında amonyak, indoller, fenoller gibi toksik maddeler üreten proteolitik mikroorganizmaları sakkarolitik mikroorganizmalarla değiştirebileceğini ifade etmiştir. Böylece, "bağırsak oto-intoksikasyonunun" ve bunun yaşlanmaya neden olan etkilerinin bastırılabilirliğini savunmuştur. Metchnikoff, bu doğrultuda "Bulgar basili" olarak adlandırılan bir bakteri kullanarak fermente süt içeren bir diyet geliştirmiştir.

Bağırsak sistemi bozuklukları, sıklıkla bağırsak mikrobiyotasını değiştirmek veya yenilemek amacıyla patojen olmayan canlı bakterilerle tedavi ediliyordu. 1917 yılında, Sir Alexander Fleming'in penisilini keşfetmesinden önce, Alfred Nissle, şiddetli bir şigeloz salgını sırasında enterokolit geliştirmemiş bir 1. Dünya Savaşı askerinin dışkılarından patojen olmayan bir *Escherichia coli* türü izole etti. Bu tür, *Escherichia coli* suşu Nissle 1917 olarak

adlandırılmış olup, LAB dışı probiyotiklerin ilk örneklerinden biri olarak kabul edilir.

Henry Tissier, ishalden muzdarip bebeklere vermek amacıyla anne sütüyle beslenen bir bebekten *Bifidobacterium* izole etmiştir. Bu bakterinin, ishale neden olan proteolitik bakterilerin yerini alacağını varsaymıştır. Dr. Minoru Shirota, ishal salgınlarıyla mücadele etmek için *Lactocaseibacillus paracasei* Shirota türünü izole etmiştir. Bu suşu içeren bir probiyotik ürün, 1935 yılından beri piyasada bulunmaktadır.

Bu çalışmalar, gelişmekte olan bilimsel bir alanın ilk öncüleridir. Günümüzde, PubMed'de insanlarla ilgili probiyotik başlığında 5.000'den fazla çalışma bulunmaktadır. Çalışmalar; kullanılan suşlar ve popülasyonlar açısından heterojen olsa da biriken kanıtlar, probiyotiklerin faydalarının ölçülebilir olduğunu desteklemektedir.

Probiyotikler, uygun dozda verildiğinde ko-nakçıya sağlık açısından fayda sağlayan canlı mikroorganizmalardır (Tablo 1) (1). *Lactobacillus* ve *Bifidobacterium* türleri, tarihsel olarak yaygın kullanılan probiyotikler arasında yer almıştır. 2020 yılında, *Lactobacillus* cinsi, bu cinse atanan geniş mikroorganizma çeşitliliğini daha iyi ele almak

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