Bağırsak Mikrobiyotasının Belirleyicileri

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1. Giriş

Son yıllarda, insan mikrobiyotası, biyomedikal bilimlerdeki en sık odaklanılan dinamik araştırma alanlarından biridir. Özellikle, insan vücudunun mikrobiyotasının çoğunu barındıran gastrointestinal (GI) yolu incelemek için daha fazla çaba sarf edilmiştir (Huttenhower ve diğerleri 2014; Schmidt ve diğerleri 2018; Jalili-Firoozinezhad ve diğerleri. 2019). İnsan mikrobiyotası, bir insan vücudunun içinde ya da üzerinde yaşayan ve konağın sağlığını etkileyen bakteriler, arkeler, ökaryotik mikroplar, bakteriyofajlar ve ökaryotik virüslerin de dahil olduğu mikroorganizmalar topluluğudur (Hooper ve Gordon2001; Huttenhower ve diğerleri 2012; D'Argenio ve Salvatore 2015; Wang ve diğerleri 2017;Hugon ve diğerleri 2017; Lederer ve diğerleri 2017). Bununla birlikte, ilginç bir şekilde, sağlıklı insan mikrobiyotası araştırmaları büyük ölçüde bakterilere odaklanmaktadır ve diğer mikrobiyal alanlara daha az önem verilmektedir (Lloyd-Price ve ark. 2016). Bu mikrobiyal toplulukla ilişkili genler, insan mikrobiyomu olarak adlandırılır ve bilim adamları, mikrobiyotanın bileşimini ve işlevini tanımlamak için mikrobiyomu kullanır (Amato 2017). İnsan mikrobiyomu; mikrobiyal genleri, gen ürünlerini ve mikrobiyotanın genomlarını içeren belirli bir mikrobiyotanın tüm genomik öğelerinin toplanmını kapsar (Proctor 2011) (Kutu 1).

Kutu 1 Mikrobiyota mı Mikrobiyom mu?
"Mikrobiyota" terimi, bakteriler, arkeler, ökaryotik mikroplar, bakteriyofajlar ve belirli bir ortamda (örn. deri ve gastrointestinal sistem) bulunan ökaryotik virüsler de dahil tüm mikroorganizmaları ifade eder. "Mikrobiyom", mikrobiyota genomlarının tümü olarak tanımlanır. Bu mikroorganizmlar, bunların genleri ve metabolitleri, mikroorganizmaların birbirileri ile ve ayrıca konakçıları ile toplu olarak etkileşimleri mikrobiyomumuzu temsil eder. Bu iki terimin küçük farkları olsa da, mikrobiyota ve mikrobiyom sıklıkla birbirinin yerine kullanılır.

İnsan vücudu, biri ebeveynlerden miras kalan ve diğeri mikrobiyomdan elde edilen iki genom taşır. Bu kavram, insanların "holobiont" veya "süper organizmalar" olarak tanımlanmasının temelidir (Cavalier-Smith 1992; Grice ve Segre 2012; Walsh vd. 2014; van de Guchte vd. 2018). Ulusal Sağlık Ortak Fonu Enstitüleri, insan-mikro-

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