

肠道菌群 | 2026-08 月度文献报告

碱基日读 · 作者 碱基 · 数据来源 PubMed / bioRxiv 官方接口 · 本月收录 123 篇，正文详述其中 30 篇

本月概览

2026年8月以"肠道菌群"为核心检索词抓取的30篇文献中，编号25至30的6篇bioRxiv预印本分别涉及形态OTU生物多样性量化、脑机接口神经调控、植入物纤维化免疫、生物冶金、HMGB1热力学和烟碱代谢酶，与肠道菌群研究无直接关联，不纳入讨论。余下24篇涵盖机制研究、动物实验、小规模人体研究和叙事综述，研究疾病背景从经典的炎症性肠病、多发性硬化持续向草酸钙肾结石、遗传性转甲状腺素蛋白淀粉样变（ATTRv）、纳米塑料生殖毒性等新场景延伸。

本月有两件值得被单独拎出来的事：第一，肠道细菌来源的硫化氢被识别为调控下丘脑进食回路的内源性信号分子，并直接与广谱抗菌药物诱导的急性厌食症相关联（PMID: 42667966）；第二，完整基因组规模代谢模型的构建揭示，草稿基因组引入的系统性偏差足以掩盖真实的菌群生态规律（PMID: 42658680），这不是一个孤立的方法论发现，而是对整个领域元基因组分析结论的集体性质疑。除此之外，"FMT验证因果"的逻辑框架在本月被至少四个研究组独立采用，说明该工具已从方法学探索进入常规操作阶段，但同质化风险随之上升。

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值得细看的研究

1. 完整基因组重写肠道菌群生态规则（PMID: 42658680）

• 做了什么：** 研究者利用1150个完整基因组构建基因组规模代谢模型，系统比较了完整基因组与草稿基因组在预测微生物代谢互作时的差异，随后将菌株划分为四类生态功能群——active players、resource predators、resource utilizers、resource contributors——并将这一分类框架映射到IBD队列，评估其疾病预测能力。

• 关键发现：** 草稿基因组引入系统性偏差并遗漏关键转运功能；基因组特征和生态位特化（而非随机关联）决定了菌株间的代谢竞争与互补关系。在IBD中，不同功能群的时间稳定性随亚型而异，基于功能群的生态失调预测临床表型的准确率优于全群落层面的指标；由整合代谢互作与共现网络提取的关键特征也改善了交叉验证的疾病分类效果。

• 证据强度：** 这是本月方法论层面最重要的一篇。1150个完整基因组的规模具有说服力，疾病分类分析采用了交叉验证，给出了实际预测效能的估计。主要局限在于：IBD队列的具体样本量和随访时长未在摘要中披露，四类功能群的划分是否具有跨数据集的稳健性尚待验证，结论向IBD以外疾病的外推需要额外数据支撑。

• 对领域的意义：** 这篇文章不只是一个新发现，更是一个警告。如果草稿基因组的系统性偏差足以影响生态规律的识别，那么过去十年基于宏基因组组装基因组（MAGs）得出的大量菌群生态学结论——包括"关键菌种"的鉴定和"特征性生态失调"的描述——都面临重新校验的需求。这个问题在计算微生物生态学圈子里已被讨论多年，现在有了规模化实证支撑。

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2. 肠道菌群来源H₂S调控进食行为，解释抗菌药物致厌食机制（PMID: 42667966）

- 做了什么：**在大鼠模型中，研究者通过亚甲蓝比色法和荧光探针检测24小时禁食后粪便和血清中的H₂S水平，结合16S rRNA测序、粪菌移植和药理学干预，逐步拆解菌群来源H₂S调控进食行为的信号通路，并探究该通路如何因抗菌药物使用而受损。

- 关键发现：**24小时禁食显著升高粪便和血清H₂S水平，并促进摄食行为；禁食重塑肠道菌群并富集特定产H₂S细菌类群。机制层面，H₂S通过S-磺化修饰激活下丘脑弓状核的AMPK，继而增强NPY阳性神经元活性，以促进摄食。产H₂S的脱硫弧菌属对广谱抗菌药物高度敏感，导致甲硝唑等药物使用后H₂S信号受损，引发急性厌食。FMT实验提供了菌群因果贡献的证据。

- 证据强度：**机制链条从菌群→代谢物→下丘脑回路→行为输出较为完整，FMT和药理学干预构成双重验证。主要问题是全部数据来自大鼠，甲硝唑致厌食是否主要通过该通路介导在人体中尚无直接证据。此外，H₂S本身具有浓度依赖性双向效应，研究未对生理范围内的剂量-效应曲线做全面评估，高浓度的毒性边界与此处发现的促摄食效应之间的关系未被厘清。

- 对领域的意义：**这是首次将肠道产H₂S菌群与中枢摄食调控直接连接，并给出了具有临床相关性的抗菌药物厌食副作用机制假说。这条通路此前几乎未被关注，它意味着抗菌药物的消化道副作用研究需要纳入对产H₂S菌群的考量。

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3. 长新冠菌群移植小鼠复现多器官后遗症表型（PMID: 42667585）

- 做了什么：**研究者在中国海南招募长新冠患者（n=11）和健康对照（n=11），收集粪便进行鸟枪法宏基因组测序和液相色谱-质谱代谢组检测，随后将长新冠患者粪便移植至抗生素处理的无特定病原体小鼠，观察受体表型及对肺炎克雷伯菌感染的抵抗力。

- 关键发现：**长新冠患者菌群多样性低于健康对照；唾液链球菌和副唾液链球菌等促炎菌增加，粪杆菌SGB15346和Alistipes onderdonkii等抗炎菌减少；粪便代谢物在碳水化合物降解、吲哚产生、SCFA产生和脂肪酸降解方面均受损。将长新冠患者粪便移植至小鼠后，受体出现肺部炎症、肠道炎症和焦虑行为，且对肺炎克雷伯菌感染的抵抗力显著下降；关键菌种唾液链球菌在受体中也显示出相似的病理关联。

- 证据强度：**FMT实验为因果关联提供了支撑，宏基因组与代谢组的联合分析增加了机制解释维度。但样本量极小（每组11人），且为单一中心、单一地域研究，"长新冠持续2年"的纳入标准在实际执行中难以标准化，个体间菌群差异的混杂难以有效控制。

- 对领域的意义：**这项研究的价值不在于发现了特定菌种，而在于用FMT在动物模型中同时复现了肺部炎症、肠道炎症、焦虑行为和免疫抵抗力下降这一"长新冠表型包"，为菌群作为长新冠驱动因子（而非仅仅伴随改变）提供了较为直接的实验证据。这一多器官同步复现的结果如果在更大样本中得到验证，将对长新冠的机制理解产生实质性影响。

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4. 肠道菌群-isoalloLCA通过PARP1介导parthanatos促进草酸钙肾结石形成（PMID: 42666033）

- 做了什么：**采用多组学策略，在草酸钙肾结石大鼠模型和人体样本中，通过16S测序、宏基因组分析、空间代谢组学、表面等离子共振（SPR）和细胞热位移实验，确认isoalloLCA（异别石胆酸）的菌

群来源及其致病机制；通过腺相关病毒微注射敲低PARP1以及药理学抑制来验证靶点必要性；并用抗生素清除菌群和FMT恢复菌群来确认因果链条。

- 关键发现：** isoalloLCA在草酸钙大鼠的粪便、血清、肾脏和尿液中均显著升高，空间代谢组学在肾脏局部证实了分布；16S测序和宏基因组分析支持其为菌群来源；isoalloLCA通过与PARP1的特异性分子互作激活PARP1，导致DNA损伤、PAR积累、线粒体损伤及AIF/MIF核转位（parthanatos形式的细胞死亡）；抗生素清除菌群显著降低了isoalloLCA水平，FMT则恢复了其促结石效应。

- 证据强度：** 因果链条通过SPR、细胞热位移、基因敲低和药理抑制多种手段交叉确认，是本月机制完整性最高的研究之一。弱点在于：产生isoalloLCA的具体菌种和代谢路径尚未鉴定，仅停留在"菌群来源"的层次；人体数据的规模未在摘要中说明，无法评估队列代表性。

- 对领域的意义：** 将肾结石纳入肠道菌群疾病谱，开辟了"胆汁酸次级代谢→肾小管损伤"的研究路线。此前胆汁酸代谢紊乱的毒性靶器官主要集中在肝脏和消化道，这项研究提示其范围可能被系统性低估。parthanatos这一细胞死亡形式在肾小管损伤中的菌群相关机制此前几乎没有研究。

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5. 营养不良的"菌群视角"重构——《自然·微生物学》综述（PMID: 42661087）

这篇综述将营养不良重新定义为涵盖过营养、营养不足和微量营养素缺乏的谱系性病症，而非孤立状态，并系统论证菌群作为"代谢性虚拟器官"在其中的核心角色。综述指出，"营养不良型菌群"在组成和功能双重层面均存在持续扰动，且在营养干预后仍可持续存在，这提示单纯营养补充不足以恢复宿主代谢状态。综述明确提出，菌群恢复应被纳入营养不良的治疗策略。

这篇文章的价值在于框架层面的重新定义，而非原始数据。综述本身不产生新证据，且作者坦承"营养不良型菌群"的定义和边界仍不清晰，诊断标志物和干预靶点尚待确认。但作为顶级期刊综述，其对领域叙事的塑造作用不可低估（PMID: 42661087）。

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6. 厌氧类器官共培养系统鉴定吡啶乳酸为屏障保护代谢物（PMID: 42536076）

- 做了什么：** 研究者开发了一套在结肠上皮单层腔侧维持无氧环境、基底侧维持固定氧浓度的共培养系统，用于研究肠道菌群与上皮屏障的互作。将青春期双歧杆菌U269-1与结肠单层在炎症细胞因子刺激背景下共培养，筛选保护性代谢物。

- 关键发现：** 在该系统中培养的结肠单层比常规有氧条件下更接近体内上皮生理状态；青春期双歧杆菌U269-1能在炎症细胞因子刺激下保护屏障完整性；吡啶乳酸（ILA）被识别为保护效应的代谢物之一，呈剂量依赖性。

- 证据强度：** 方法学改进是这篇文章的核心贡献。厌氧-有氧氧梯度是肠腔真实环境的关键特征，过去大多数类器官研究忽视了这一点，导致专性厌氧菌在共培养中无法存活并发挥生理功能。局限在于使用的是源自细胞系的结肠单层而非原代类器官，与原发组织的生理相关性存在差距；且该平台目前仍属单一实验室自研系统，跨实验室可重复性未知（PMID: 42536076）。

- 对领域的意义：** 为研究专性厌氧共生菌（双歧杆菌、粪杆菌等）与宿主上皮互作提供了更接近真实的体外平台，可能加速筛选保护性代谢物的速度，并弥补此前此类研究中"专性厌氧菌无法纳入体外共培养"的系统性盲点。

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7. 值得记录但证据尚浅的研究

• Polyporus umbellatus β -葡聚糖改善MASH (PMID: 42660302) : ** 通过胆汁盐水解酶-胆汁酸-FXR信号轴, 富集产BSH的Alistipes和乳酸杆菌, 降低血清转氨酶和总胆汁酸, 缓解肝脏脂变、炎症、气球样变和纤维化。抗生素干预和共笼实验验证了菌群因果角色, 机制路径清晰, 但仍为单纯动物模型研究。

• Bifidobacterium BB-12保护坏死性小肠结肠炎 (PMID: 42668279) : ** 在新生大鼠NEC模型中, 通过IL-6激活AhR/CYP1A1通路抑制炎症, 体外AhR敲低实验印证了ILA作用的靶点依赖性, 与PMID: 42536076共同指向ILA-AhR作为一条具有跨场景价值的保护通路, 但全部数据来自动物和体外系统。

• SCFAs靶向IL-17A缓解急性胰腺炎 (PMID: 42660446) : ** AP小鼠粪便SCFA水平下降, 外源性补充混合SCFAs改善胰腺损伤, 降低IL-1 β 、TNF- α 和IFN- γ , 并通过IL-17A/IL-17RA通路发挥作用; 无菌小鼠和FMT对照实验增加了说服力。这是肠道微生物介入胰腺急症的相对早期研究, 机制方向有价值, 但为单一动物模型。

• 聚苯乙烯纳米塑料通过肠-肝/睾丸轴损伤生殖功能 (PMID: 42660466) : ** 28天口服暴露在雄性小鼠中引发精子活力显著受损、附睾组织病理改变, 菌群失调 (Firmicutes/Bacteroidota比值升高、有益菌Ligilactobacillus murinus减少) 与肝脏及睾丸转录组改变之间的Spearman相关提供了假说框架; 但相关不等于因果, 机制验证链条尚未完成。

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趋势判断

• 一、代谢物研究进入"靶点鉴定"阶段, 与第一、二代拉开范式距离**

本月至少有两篇研究直接鉴定了微生物代谢物的宿主蛋白靶点: isoalloLCA通过SPR和细胞热位移实验锁定PARP1 (PMID: 42666033), ILA通过AhR-CYP1A1通路的功能性敲低锁定受体 (PMID: 42668279、PMID: 42536076)。早期菌群研究的第一代范式是描述性关联 (谁多了谁少了), 第二代是代谢物浓度的测定, 第三代是明确代谢物与宿主蛋白的直接互作。本月的这两条线索表明, 第三代范式正在成为机制研究的预期标准, 未来微生物代谢物的"靶向蛋白质组学"将成为高质量机制论文的必要组件。

• 二、FMT作为因果验证工具被过度模板化, 设计同质化的风险上升**

本月至少四个研究 (PMID: 42667471、42667585、42666033、42660302) 将FMT作为核心因果验证手段, 遵循"患者或病态动物粪便→抗生素处理受体鼠→观察表型复现"的相同模板。这一逻辑框架本身没有问题, 但几乎所有研究都未系统报告FMT后菌群在受体的定植率、定植持续时间和供体-受体菌群相似度。没有定植验证的FMT实验, 其阴性结果无法解释 (是干预失效还是菌群未能定植?), 阳性结果的可靠性也打折扣。当整个领域都用同一工具、同一流程时, 工具本身的局限性就被系统性忽视了。

• 三、基因组完整度问题从技术细节升格为领域性危机**

PMID: 42658680的核心结论——草稿基因组引入系统性偏差, 遗漏关键转运功能, 改变生态规律的识别——不是技术论文, 而是对过去十年MAGs研究积累的生态学知识体系提出了集体质疑。这个问题在计

算微生物生态学圈内已被讨论，但现在有了规模化（1150个完整基因组）的实证支撑，将很可能推动主流期刊和预印服务器在审稿流程中要求更严格的基因组质量分级报告。

• 四、研究场景扩张速度超过证据积累速度**

本月肠道菌群研究覆盖了肾结石、ATTRv淀粉样变（PMID: 42668409）、脊髓损伤（PMID: 42665124）、纳米塑料生殖毒性（PMID: 42660466）等以往少有研究的场景，每个场景目前都只有一两篇机制研究，证据链条极短。场景扩张本身是健康信号，说明菌群影响的器官边界在不断被重新认识；但问题是在几乎所有场景上同时“铺面”，导致每个方向都停留在“建立关联”的初级阶段，没有任何一个新场景的证据足以支撑临床推荐。

• 五、细菌来源胞外囊泡正在被定位为“无细胞益生菌”的候选载体**

丁酸梭菌来源胞外囊泡（CbEVs）保护ETEC诱导的肠屏障损伤（PMID: 42663499），结合本月IBD中肠道EVs综合综述（PMID: 42665240），EVs正被研究者定位为将活菌功能“解耦”并独立递送的工具。吸引力在于规避活菌制剂在安全性和生产稳定性上的挑战，弱点是体内递送效率和器官靶向性目前缺乏成熟解决方案，大规模生产工艺未被文献充分讨论。

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这批研究的共同弱点

• 样本量普遍不足，尤其是人体数据。** 本月典型例子：长新冠菌群研究每组仅11人（PMID: 42667585），蛋白质发酵生物标志物干预研究仅15名健康成人（PMID: 42665052）。在个体间菌群差异极大的研究背景下，这样的样本量几乎无法有效控制混杂，统计效能不足以支撑强结论，阳性结果的偶然发现概率偏高。

• 动物模型与人体生理的鸿沟被系统性低估。** 本月绝大多数机制研究依赖小鼠或大鼠模型（ICR、BALB/c、CD-1等单一品系），而人类肠道菌群的物种组成、多样性和代谢背景与啮齿类动物差异显著。从动物菌群功能直接外推至人体干预策略的逻辑跳跃，在本月多篇文章的讨论部分均存在，且缺乏充分的保留性表述。

• 16S rRNA测序的分辨率局限仍被大量研究依赖。** 多篇研究仍以16S rRNA扩增子测序作为菌群表征的唯一手段（PMID: 42667471、42668279、42665143、42660302等），该技术在种水平分辨率有限，扩增偏差难以消除。在越来越多研究声称鉴定了“关键菌种”乃至“关键菌株”的背景下，16S数据的分辨率与结论精度之间存在明显落差。

• FMT实验设计缺乏标准化，定植验证普遍缺失。** 本月采用FMT的研究中，无一系统报告受体菌群的定植率、定植持续时间或供体-受体菌群的相似度。没有定植确认，FMT实验的因果解释存在根本性漏洞，任何结果（阳性或阴性）的可解释性均受限。

• 综述类文章占比过高，叙事综述质量参差。** 本月至少六篇属于叙事综述（PMID: 42666691、42663293、42647759、42661087、42663691、42665124、42665240），其文献筛选标准多不透明，系统综述比例低，容易强化既有共识而低报阴性和矛盾结果。将这些综述与原始研究并列引用时需要明确区分证据等级。

• 干预周期过短，无法捕捉稳定的代谢重编程。** 多项动物实验的干预时长仅为7至14天（PMID: 42667472、42665143），对于肠道菌群这一动态生态系统而言，如此短暂的观察窗口很可能捕捉到的是适应

性短暂波动，而非真正的稳态转变。以此推断的长期健康效果缺乏依据。

•

下个月值得关注

• H₂S-AMPK-NPY进食通路的人体验证路径。** PMID: 42667966建立了一个可测试的临床假说：使用对脱硫弧菌等产H₂S菌敏感的抗菌药物后，血清或粪便H₂S水平下降应与临床记录的厌食程度相关。这在药物不良反应数据库中是可以追溯的关联，也适合设计短期人体干预研究，建议关注是否有相关的临床观察性研究或干预试验注册。

• isoalloLCA的上游菌群来源鉴定。** PMID: 42666033仅证明了isoalloLCA为菌群来源，但具体合成菌种和代谢路径尚未明确。这是最直接的跟进问题，也决定了这条通路是否存在明确的干预靶点，以及是否可以通过定向调整菌群组成来干预肾结石风险。

• 完整基因组质量要求是否会进入同行评审标准。** PMID: 42658680的影响如果足够大，预期接下来会看到对MAGs质量要求的讨论进入期刊审稿常规流程，或者出现要求补充完整基因组数据的编辑政策。建议关注相关方法学期刊和生物信息学社群的讨论动向。

• 长新冠菌群特征的多地域独立验证。** PMID: 42667585来自中国海南单一地点，每组11人。近期如有来自欧洲、北美或其他亚洲地区采用类似设计的研究发表，跨地域一致性将是评估"长新冠菌群特征"是否具有普遍性的关键检验——尤其是唾液链球菌的促炎作用是否在不同地理背景下可重复。

• 厌氧类器官共培养平台的跨实验室重现。** PMID: 42536076描述的氧梯度共培养系统目前仍属单一实验室自研平台，其核心价值取决于能否被其他实验室独立重复并用于筛选不同菌种的保护性代谢物。接下来的关键信号是：该平台的详细方案是否会随论文发表，以及其他实验室是否开始引用和采用该系统。

附录：2026-08 全部收录文献（123 篇）

#	标题	期刊	日期	PMID
1	What Are We Actually Feeding ICU Patients? The Case for Studying Formula Composition.	Critical care explorations	2026-Sep-0	42640598
2	Decoding multiple sclerosis: linking autoimmunity, and nutrition/environmental factors to mitochondrial dysfunction and therapeutic opportunities.	3 Biotech	2026-Sep	42643486
3	Amino Acid Metabolism in Health and Disease.	MedComm	2026-Sep	42666691
4	Mechanisms and prospects of fecal microbiota transplantation in urticaria treatment via the gut skin axis.	Current opinion in allergy and clinical	2026-Oct-0	42618999
5	Natural medicine - empowered treatment of depression via restoring neurogenesis (Review).	Molecular medicine reports	2026-Oct	42663293
6	The Gut Microbiome in Multiple Sclerosis.	Neurology(R) neuroimmunology & neuro	2026-Nov	42647759
7	Baseline gut microbiome ecology predicts long-term fat mass loss after bariatric surgery: evidence for a thrifty Bifidobacterium phenotype.	Gut microbes	2026-Dec-3	42635403
8	Gut microbial diversity at baseline conditions the clinical, microbiome, and metabolic response to paraprobiotic Lactiplantibacillus plantarum LRCC5282 in overweight adults.	Gut microbes	2026-Dec-3	42640624
9	Glycosylation in gut-brain communication: from the intestinal barrier and microbiota to immune and neural signaling.	Gut microbes	2026-Dec-3	42642834
10	Engineered bacterial therapeutics from synthetic biology to clinical translation: A multi-database scientometric analysis, 2000-2026.	Human vaccines & immunotherapeutics	2026-Dec	42641146
11	White kidney bean episperm polysaccharides improve cognitive impairment in D-galactose-induced aging mice via modulation of oxidative stress, neuroinflammation, and the gut-brain a	Food research international (Ottawa, Ont	2026-Aug-3	42215106
12	Bound polyphenols from seabuckthorn pomace alleviate sleep deprivation-induced cognitive impairment via gut microbiota-driven homovanillic acid-mediated neuroprotection.	Food research international (Ottawa, Ont	2026-Aug-3	42215107
13	Physicochemical and anti-diabetic properties of Fu-brick tea proteins: the key role of amino acid metabolism and gut microbial transformation.	Food research international (Ottawa, Ont	2026-Aug-3	42215115
14	Ultrasound-assisted degradation of polysaccharides from sweet corn cob can regulate gut microbiota and activate multiple pathways via the gut-liver axis to alleviate T2DM in mice.	Journal of the science of food and agric	2026-Aug-3	42098935
15	Antagonistic effect of Schisandra chinensis lignans on intestinal ROS accumulation and gut microbiota in sleep-deprived mice.	Journal of the science of food and agric	2026-Aug-3	42101292
16	Abelmoschus manihot (L.) leaf flavonoids (AMLF) restore cyclophosphamide-induced immunosuppression in mice via gut microbiota and serum metabolomics modulation.	Food & function	2026-Aug-3	42669286
17	Polysaccharide-functionalized metal-polyphenol network-coated porous microspheres for improving the treatment of probiotics in ulcerative colitis.	International journal of pharmaceutics	2026-Aug-3	42669319
18	Effects of imbalanced gut microbial on mice with type a hepatic encephalopathy through the gut-liver-brain axis.	Metabolic brain disease	2026-Aug-2	42667471

#	标题	期刊	日期	PMID
19	Dietary supplementation with phlorotannin-lowered <i>Eisenia nipponica</i> increases caecal antioxidant activity and promotes <i>Akkermansia</i> in mice.	Molecular biology reports	2026-Aug-2	42667472
20	Gut Microbiota from Patients with Long COVID Persisting for 2 Years Result in Alterations in Mice that Resemble Post-COVID Symptoms.	Probiotics and antimicrobial proteins	2026-Aug-2	42667585
21	Disruption of gut bacteria-derived hydrogen sulfide signaling mediates antibacterial-induced acute anorexia.	Biochemical pharmacology	2026-Aug-2	42667966
22	Subacute oral toxicity of <i>Sinopodophyllum hexandrum</i> fruit in mice: Integrated assessment of target-organ injury and gut microbiota alteration.	Journal of ethnopharmacology	2026-Aug-2	42667973
23	<i>Bifidobacterium</i> modulates gut microbiota and aryl hydrocarbon receptor signaling in necrotizing enterocolitis rat model.	Pediatric research	2026-Aug-2	42668279
24	Gastric amyloid pathology and mucosal denervation in ATTRv amyloidosis: insights from patients, mice, and gut microenvironment profiles.	Amyloid : the international journal of e	2026-Aug-2	42668409
25	<i>Clostridium butyricum</i> -derived extracellular vesicles alleviate ETEC K88-induced intestinal injury by regulating Wnt/ β -catenin signaling and gut microbiota.	Applied and environmental microbiology	2026-Aug-2	42663499
26	<i>Weissella</i> as an emerging probiotic candidate for IBD: current evidence, challenges, and future perspectives".	Antonie van Leeuwenhoek	2026-Aug-2	42663691
27	Protein fermentation biomarkers in plasma and urine differ between bovine plasma protein and whey protein isolate in a randomized fully controlled dietary intervention.	The American journal of clinical nutriti	2026-Aug-2	42665052
28	Gut microbiota dysbiosis in spinal cord injuries: immune impairment and therapeutic potential of microbiome modulation.	Life sciences	2026-Aug-2	42665124
29	Integrated microbiome and metabolomics analysis of the mechanism of inflammation-reducing effects of cyanidin-3-glucoside and blueberry pectin complexes in mice with ulcerative col	International journal of biological macr	2026-Aug-2	42665143
30	Extracellular vesicles in inflammatory bowel disease: from immune regulation and barrier repair to precise transformation.	Autoimmunity reviews	2026-Aug-2	42665240
31	Gut Microbiota-Isoallothiocholic Acid Crosstalk Promotes Calcium Oxalate Kidney Stone Formation via PARP1-Mediated Parthanatos.	Advanced science (Weinheim, Baden-Wurtte	2026-Aug-2	42666033
32	Resistant starch alleviates intestinal fibrosis involving an acetate-mediated HDAC2-H3K27ac axis in fibroblasts.	Food & function	2026-Aug-2	42657522
33	Ethyl caffeate alleviates NAFLD by modulating JNK/IRS-1/AKT signaling and the gut microbiota.	Food & function	2026-Aug-2	42657601
34	The ameliorative effects of fermented Xinjiang jujube juice by <i>Lactiplantibacillus plantarum</i> GD 03 on iron-deficiency anemia.	Journal of the science of food and agric	2026-Aug-2	42657651
35	<i>Fmr1</i> mutation is associated with gut microbiome structure and diversity as well as intestinal barrier integrity and function in a sex- and genotype-dependent manner.	mSphere	2026-Aug-2	42657951
36	Oral iron-induced stunting is associated with increased <i>Christensenella</i> abundance in a piglet model for human infants.	European journal of nutrition	2026-Aug-2	42658263

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37	Evidence Synthesis of Probiotic Supplementation for Allergic Rhinitis in Adults: A Systematic Review and Network Meta-Analysis.	American journal of rhinology & alle	2026-Aug-2	42658561
38	Oral Nanomicelle-Mediated Sequential Butyrate Production in the Intestine for Ulcerative Colitis and Immunosuppression Treatment.	Advanced science (Weinheim, Baden-Wurtte	2026-Aug-2	42658595
39	Polyporus umbellatus β -glucan ameliorates metabolic dysfunction-associated steatohepatitis by remodeling the gut microbiota-bile acid-FXR signaling axis.	Journal of ethnopharmacology	2026-Aug-2	42660302
40	Short-chain fatty acids alleviate acute pancreatitis by targeting IL-17A to inhibit inflammation and restore intestinal barrier function.	Journal of advanced research	2026-Aug-2	42660446
41	Polystyrene nanoplastics exposure induces reproductive toxicity in male mice associated with the gut-liver/testis axis.	Toxicology and applied pharmacology	2026-Aug-2	42660466
42	The gut microbiota in malnutrition.	Nature reviews. Microbiology	2026-Aug-2	42661087
43	Complete genome-derived metabolic interactions reveal the impact of gut ecology on human health.	Cell reports	2026-Aug-2	42658680
44	The gut-heart axis in cardio-oncology.	Cardiovascular research	2026-Aug-2	42374831
45	ZiBuPiYin recipe mediates BDNF/TrkB/CREB regulation of synaptic plasticity: Key role of SYT1 acetylation modification.	Journal of ethnopharmacology	2026-Aug-2	42642004
46	Gut microbiota, microbial metabolites, and microbiome-directed nutritional interventions in hyperuricemia and gout: mechanisms and translational opportunities.	Journal of the science of food and agric	2026-Aug-2	42643149
47	Gut microbiota-associated metabolites and microbial components in acute ischemic stroke - Neuroimmune inflammation, biomarkers, and therapeutic targets: A narrative review.	Biomolecules & biomedicine	2026-Aug-2	42644465
48	Ultra-Processed Foods and Metabolic Dysfunction: Mechanisms, Clinical Implications, and Public Health Perspectives. Position Paper of the Italian Association of Dietetics and Clini	Current nutrition reports	2026-Aug-2	42645708
49	The role of gut-lung axis-targeted nursing strategies in immune regulation of COPD.	Acta microbiologica et immunologica Hung	2026-Aug-2	42647083
50	Diet quality, gut microbiome, and inflammatory signatures in Puerto Rican adults with Crohn disease: a multidimensional analysis.	Inflammatory bowel diseases	2026-Aug-2	42647084
51	Perillaldehyde alleviates Parkinson's disease via the gut microbiota-5-methyltetrahydrofolate-homocysteine methylation axis.	Phytomedicine : international journal of	2026-Aug-2	42648207
52	Combination of tart cherry and fish Oil exerted stronger attenuation of high-fat diet-induced gut dysbiosis and dysfunction in females than in males.	The Journal of nutrition	2026-Aug-2	42648364
53	The Gut-Liver Axis in Hepatic Ischemia-Reperfusion Injury: From Microbiota Dysbiosis to Remote Organ Dysfunction.	Journal of gastrointestinal surgery : of	2026-Aug-2	42648431
54	Gut microbiota dysbiosis-induced neuroinflammation and IL-22/STAT3 activation in emotional disorders.	Brain, behavior, and immunity	2026-Aug-2	42648453

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55	Cadmium exposure elevates gut microbial oleic acid and promoted colitis potentially via FFAR4: A network toxicology and molecule docking study.	Food and chemical toxicology : an intern	2026-Aug-2	42648624
56	Microbiota-derived tryptophol attenuates chronic stress-induced pain- and depression-like phenotypes in female mice via colonic aryl hydrocarbon receptor signaling through reduced	Translational research : the journal of	2026-Aug-2	42648629
57	Advances in the Intestinal Toxicity of Microcystin-LR.	Journal of applied toxicology : JAT	2026-Aug-2	42648663
58	Hepatic control of immunometabolism: implications for the pathogenesis, diagnosis and treatment of rheumatic diseases.	Nature reviews. Rheumatology	2026-Aug-2	42649250
59	Preparation and chemical characterization of polyphenol-rich extract from Tsao ko Fructus: alleviation of ulcerative colitis in mice by modulating gut microbiota and suppressing the	Phytomedicine : international journal of	2026-Aug-2	42669226
60	An innovative organoid model to screen for bacteria and their metabolites that protect against inflammation-induced colonic barrier disruption.	mSphere	2026-Aug-2	42536076
61	In vitro metabolic signaling in two intestinal bacterial isolates: glutamate-driven transcriptional and functional reprogramming in Clostridium butyricum and Bacteroides thetaiota	mSphere	2026-Aug-2	42573237
62	Plant-based whole-food diets are feasible during auto-HCT and are associated with dose-dependent microbiome modulation.	Blood advances	2026-Aug-2	42263665
63	Microbiome-driven precision medicine in asthma: Roles of targeted therapies and artificial intelligence.	The Journal of asthma : official journal	2026-Aug-2	42613688
64	Adjusting Our Thinking About Feeding Animals: Fiber as the Metric for Mimicking Natural Diets.	Zoo biology	2026-Aug-2	42640073
65	The gut microbiota-miRNA axis in multiple sclerosis: Mechanisms and therapeutic potentials.	Folia microbiologica	2026-Aug-2	42640413
66	A barrier-centered perspective on the gut-barrier-bone axis: a review of the core role of the intestinal barrier and related probiotics with nanocoatings.	Archives of microbiology	2026-Aug-2	42640479
67	Gut-derived butyrate as a key regulator in the pathogenesis of multiple sclerosis.	Progress in neuro-psycho pharmacology &	2026-Aug-2	42641677
68	Innate Lymphoid Cells and diet: the multitask cells in metabolic syndrome progression.	Immunology letters	2026-Aug-2	42641696
69	Limosilactobacillus reuteri and Lactobacillus johnsonii intervention ameliorates gestational diabetes mellitus-associated sex-specific placental nutrient transporter abnormalities:	Diabetes research and clinical practice	2026-Aug-2	42641809
70	Novel clinical intervention pathway based on the pathogenesis mechanism of Enterotoxigenic Bacteroides fragilis.	Critical reviews in oncology/hematology	2026-Aug-2	42641832
71	Integrated metabolomics and proteomics revealed the comprehensive mechanism of Sijunzi decoction and its active components in improving multi-system dysfunction induced by spleen d	Journal of ethnopharmacology	2026-Aug-2	42642007
72	Childhood exposure to a sibling with Crohn's disease alters gut microbiome and Crohn's disease susceptibility.	Gut	2026-Aug-2	42642218
73	Empirical evidence for gut microbial influence on human brain neurochemistry via the gut-brain axis.	Molecular psychiatry	2026-Aug-2	42642466

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74	A geroprotective probiotic and its functional metabolite counteract inflammaging to extend healthspan.	Nature aging	2026-Aug-2	42642521
75	The Escherichia coli uhp two-component system functions as a sensory channel for hexose phosphates secreted by Bifidobacterium.	Scientific reports	2026-Aug-2	42642549
76	Can Herbal Supplement Be a Suitable Alternative of Ferrous Iron Oral Therapy to Bypass Gastrointestinal Side Effects.	Phytochemical analysis : PCA	2026-Aug-2	42642713
77	The role of the gut microbiome in nicotine withdrawal and dependence.	Nicotine & tobacco research : offici	2026-Aug-2	41874416
78	The microbiota-gut-brain axis as a driver of secondary brain injury after aneurysmal subarachnoid hemorrhage: from bidirectional vicious cycle to therapeutic opportunities.	Reviews in the neurosciences	2026-Aug-2	42035251
79	Waxy hull-less barley intake enhances intestinal secretory IgA associated with dendritic cell activation in gut-associated lymphoid tissue.	Food & function	2026-Aug-2	42634933
80	Identification and Classification of Expressed Orphan Genes, Spurious Orphan Genes, and Conserved Genes in the Human Gut Microbiome.	Genome biology and evolution	2026-Aug-2	42635192
81	Species-specific prophage induction by ciprofloxacin in human gut metagenomes.	mSystems	2026-Aug-2	42635434
82	LC-MS-based metabolomics reveals the In Vivo effects of cognitive formula 1 in rats with A β -induced Alzheimer's disease.	Experimental brain research	2026-Aug-2	42635815
83	Osteoporosis from the perspective of the gut-bone axis: gut microbiota, metabolites, and multi-system synergistic regulation.	Journal of endocrinological investigatio	2026-Aug-2	42635907
84	The Role of Akkermansia muciniphila in Obesity: Benefit or Harm?	Probiotics and antimicrobial proteins	2026-Aug-2	42635918
85	Microbial-Metabolite Signatures Are Associated With Glucocorticoid Responsiveness in Chronic Rhinosinusitis With Nasal Polyps.	International forum of allergy & rhi	2026-Aug-2	42637687
86	Lactobacillus acidophilus LA15 plus Bifidobacterium animalis subsp. lactis Bi66 mitigates cyclophosphamide-induced immunosuppression in association with gut-immune axis modulation	Journal of the science of food and agric	2026-Aug-2	42638285
87	Noncanonical Surface Glycoconjugates from Bacteroides stercoris DSM 19555 Reprogram Innate Immune Responses.	JACS Au	2026-Aug-2	42657251
88	The gut-endometrium axis in chronic endometritis: the role of bacterial translocation, the estrobolome, and estrogen metabolism - A narrative review.	European journal of obstetrics, gynecolo	2026-Aug-2	42659887
89	Sulforaphane-Producing Lactocaseibacillus paracaseiCCFM1221 Combining Broccoli Seed Extract Improved the Hepatoprotective Effect on Lipopolysaccharide-Treated Mice.	Food science & nutrition	2026-Aug	42643561
90	When AI encounters natural history: Morphological OTUs reshape our understanding of Earth's life	biorxiv preprint	2026-08-28	10.64898/2026.04.28.721370
91	A Translational Platform for Brain-Computer Interfaces and Adaptive Neuromodulation: Technical Characterization, Long-Term Validation, and Implementation of the CorTec Brain Interc	biorxiv preprint	2026-08-28	10.64898/2026.08.27.747359

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92	Age and sex alter the immune response in a chronic fibrosis model via changes in T cell and macrophage phenotype	biorxiv preprint	2026-08-28	10.64898/2026.08.27.747581
93	Biophytometallurgy: biomining metals from plant resources	biorxiv preprint	2026-08-28	10.64898/2026.08.27.747594
94	Thermodynamic properties and stability of HMGB1 complexes with linear polyelectrolytes elucidated by nano differential scanning fluorimetry	biorxiv preprint	2026-08-28	10.64898/2026.08.27.747546
95	Isolation of oxygen-dependent nicotine- and pseudooxynicotine-metabolizing enzymes	biorxiv preprint	2026-08-28	10.64898/2026.08.27.747611
96	Structural and mechanistic analyses reveal collaborative regulation of HSF1 by the Hsp70-Hsp90 chaperone systems	biorxiv preprint	2026-08-28	10.64898/2026.08.27.747592
97	Extracellular Vesicles Derived from L-MYC Neural Stem Cells Mediate Neuroprotection in 3D Models of Chemotherapy- and Radiation-Induced Neurotoxicity	biorxiv preprint	2026-08-28	10.64898/2026.08.26.747380
98	Sexual Dimorphism of Cancer-Associated Fibroblasts Governs Matrix and Vascular Organisation in Breast Cancer	biorxiv preprint	2026-08-28	10.64898/2026.08.27.747484
99	Mitocurcumin mediated redox disruption and metabolic rewiring induces tumor regression in Drosophila intestinal stem cell tumors	biorxiv preprint	2026-08-28	10.64898/2026.08.27.747455
100	Shank3 mutation disrupts the molecular signature of sleepiness across development	biorxiv preprint	2026-08-28	10.64898/2026.08.21.746326
101	Bringing Attention to Education: Revisiting the Neural Mechanisms of Selective Attention in Naturalistic Learning	biorxiv preprint	2026-08-28	10.64898/2026.08.26.747092
102	Functional spatial transcriptomics uncover LMO7 as a fusion-regulated and clinically relevant driver of metastasis in Ewing sarcoma	biorxiv preprint	2026-08-28	10.64898/2026.08.27.747513
103	Extracellular protein catabolism drives regulated nitrogen handling and ammonia buffering in acute myeloid leukemia	biorxiv preprint	2026-08-28	10.64898/2026.08.27.747222
104	Electron diffraction captures high-resolution structures from in vivo protein nanocrystals of Bacillus thuringiensis	biorxiv preprint	2026-08-28	10.1101/2025.06.24.661318
105	Using CarboTrace 480 to detect protoplastation in pigment deficient mutant of Chlorella sorokiniana	biorxiv preprint	2026-08-28	10.64898/2026.08.27.747479
106	Dual Traditional Chinese Medicine-Preconditioned Stem Cell Secretomes in Coaxial Electrospun Nanofibers Synergistically Accelerate Diabetic Wound Regeneration	biorxiv preprint	2026-08-28	10.64898/2026.08.25.746942
107	Directed Evolution in Codon Space	biorxiv preprint	2026-08-28	10.64898/2026.08.03.742557
108	Balancing spatial resolution and proteome depth in LC-MS based spatialproteomics	biorxiv preprint	2026-08-28	10.64898/2026.08.27.747491
109	Anniemap: Vector Search for Viral Short Read Alignment	biorxiv preprint	2026-08-28	10.64898/2026.08.26.747390
110	Sequence architecture shapes human allele frequencies through ectopic gene conversion	biorxiv preprint	2026-08-28	10.64898/2026.08.26.747289
111	Global vascular plants reveal persistent gaps across taxa and ecoregions	biorxiv preprint	2026-08-28	10.64898/2026.08.24.746674
112	Evaluating threshold management for willow grouse harvest: tracking open and closed areas during 12 years.	biorxiv preprint	2026-08-28	10.64898/2026.08.27.747286

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113	Three-dimensional Imaging of Colonial Cyanobacteria with Optical Coherence Tomography	biorxiv preprint	2026-08-28	10.64898/2026.08.27.747059
114	Female song and breeding phenology of the Nilgiri Flycatcher (<i>Eumyias albicaudatus</i>) in the Shola Sky Islands	biorxiv preprint	2026-08-28	10.64898/2026.08.27.747512
115	Microplastic exposure alters immune-related gene expression in <i>Culex quinquefasciatus</i> mosquitoes and larval microbiota diversity	biorxiv preprint	2026-08-28	10.64898/2026.08.27.747521
116	Functional Robustness of Food Webs: A Dynamic Biomass Framework with Vital Species Sets and Cluster Influence	biorxiv preprint	2026-08-28	10.64898/2026.08.27.747453
117	Oligodendrocyte Enriched Brain Organoids Reveal Impaired Oligodendroglial Maturation and Altered Neural Network Activity in Down Syndrome	biorxiv preprint	2026-08-28	10.64898/2026.08.27.747500
118	Nanoscale Core-Rim Compartmentalization of Histamine and GABA within Individual Synaptic Vesicles	biorxiv preprint	2026-08-28	10.64898/2026.08.25.747175
119	Single-atom inhibition of oncogenic drivers through cysteine coordination	biorxiv preprint	2026-08-28	10.64898/2026.08.27.747489
120	Microbiome-Driven Risk Stratification and Biotherapeutics in Radiation Enteritis.	Computational and structural biotechnolo	2026	42639198
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