# Kyoto Encyclopedia of Genes and Genomes derived Suggestions

## **Review Overview**

These suggestions are based on an Expert System (Artificial Intelligence) modelled after the MYCIN Expert System produced at Stanford University School of Medicine in 1972. The system uses almost 2 million facts with backward chaining to sources of information. The typical sources are studies published on the US National Library of Medicine. Note: That many of the bacteria species used are *NOT* reported on many tests.

These are suggestions that are predicted to independently Decreasing histidine decarboxylase by impacting the bacteria listed on <u>KEGG: Kyoto Encyclopedia of Genes and Genomes</u>. Suggestions should *only be done after a review* by a medical professional factoring in patient's conditions, allergies and other issues.

#### This report may be freely shared by a patient to their medical professionals

This is an experimental feature - manual validations is recommended. For background, see this post

There is a separate report for probiotics. That report use the enzymes in probiotic species.

#### Analysis Provided by Microbiome Prescription

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## Bacteria being targeted by suggestions.

These bacteria levels were deemed atypical

Bacteria Name	Rank	Shift Taxonomy ID	Bacteria Name	Rank	Shift Taxonomy ID
Sorangium cellulosum	species	56	Kitasatospora setae	species	2066
Francisella tularensis subsp.	subspecies	264	Halomonas elongata	species	2746
novicida	Subspectes	204	Francisella philomiragia	species	<u>2811</u> 0
Pseudomonas fluorescens	species	294	Vibrio nigripulchritudo	species	28173
Methylococcus capsulatus	species	4 <u>1</u> 4	Arcobacter nitrofigilis	species	28199
Acinetobacter baumannii	species	470	Ornithobacterium rhinotracheale	species	28251
lodobacter fluviatilis	species	537	Streptantibioticus cattleyicolor	species	29303
Klebsiella aerogenes	species	548	Aeromonas salmonicida subsp.	cubenooioe	20/01
Dickeya chrysanthemi	species	556	salmonicida	subspecies	23431
Klebsiella pneumoniae	species	573	Vibrio tubiashii	species	29498
Aeromonas hydrophila	species	644	Staphylococcus saccharolyticus	species	33028
Aeromonas salmonicida	species	645	Gloeobacter violaceus	species	33072
Vibrio vulnificus	species	672	Streptomyces subrutilus	species	36818
Vibrio gazogenes	species	687	Xenorhabdus poinarii	species	40577
Plesiomonas shigelloides	species	703	Micromonospora aurantiaca	species	47850
Haemophilus influenzae	species	727	Acinetobacter pittii	species	48296
Bacteroides fragilis	species	817	Tatumella citrea	species	53336
Fusobacterium varium	species	856	Dactylosporangium vinaceum	species	53362
Fusobacterium ulcerans	species	861	Nocardiopsis alba	species	53437
Cellulophaga lytica	species	979	Fructilactobacillus lindneri	species	53444
Solitalea canadensis	species	995	Raoultella omithinolytica	species	54291
Leptolyngbya boryana	species	1184	Erwinia persicina	species	55211
Clostridium perfringens	species	1502	Vibrio anguillarum	species	55601
Paraclostridium sordellii	species	1505	Streptomyces platensis	species	58346
Clostridium tetani	species	1513	Desulfobacca acetoxidans	species	60893
Acetivibrio thermocellus	species	1515	Shewanella woodyi	species	60961
Clostridium baratii	species	1561	Serratia rubidaea	species	61652
	<u>.</u>		Zobellia galactanivorans	species	63186
Limosilactobacillus reuteri	species	1598	Strantony and functional of	oncoloo	60000
Fructilactobacillus fructivorans	species	1614		species	00203
Limosilactobacillus vaginalis	species	1633	iviusicola paradisiaca	species	69223
Streptomyces clavuligerus	species	1901	Allividrio Wodanis	species	80852

### Substance to Consider Adding or Taking

These are the most significant substances that are likely to improve the microbiome dysfunction. Dosages are based on the dosages used in clinical studies. For more information see: https://microbiomeprescription.com/library/dosages. These are provided as examples only

Colors indicates the type of substance: i.e. probiotics and prebiotics, herbs and spices, etc. There is no further meaning to them.

The recommended process to obtain a *persistent shift* of the microbiome is:

Generate 4 lists from the suggestions with nothing repeated on another list Emphasize one list each week

After 8 weeks (2 cycles), retest the microbiome to obtains the next set of *course corrections* This approach allows the microbiome to stablize towards normal.

Pick only as many suggestions that suits you; there is no need to do all of them. Suggestions are based on your specific bacteria and not marketing concepts such as 'healthy choices'.

Allium cepa {Onion} Azadirachta indica {Neem} 120 mg/day Cinnamomum zeylanicum {Ceylon Cinnamon} 6 gram/day Citrus limon {Lemon} Coriandrum sativum {Coriander} DiferuloyImethane {Curcumin} 3 gram/day foeniculum vulgare,fennel Metha family {Mint} Nigella sativa {black cumin} 1000 mg/day Ocimum basilicum {Basil} origanum vulgare {oregano} rosmarinus officinalis {rosemary} ß-(1?4)-linked D-glucosamine and N-acetyl-D-glucosamine {Chitosan} 3 gram/day syzyglum aromaticum {clove} tea Thymus vulgaris {thyme} Zingiber officinale Roscoe {ginger}

### Substance to Consider Reducing or Eliminating

These are the most significant substances have been identified as probably contributing to the microbiome dysfunction.

In some cases blood work may show low levels of some vitamins, etc. listed below. This may be due to greedy bacteria reported at a high level above. Viewing bacteria data on the Kyoto Encyclopedia of Genes and Genomes (https://www.kegg.jp/) may provide better insight on the course of action to take.

(2->1)-beta-D-fructofuranan {Inulin} arabinogalactan {arabinogalactan} bacillus,lactobacillus,streptococcus,saccharomyces probiotic Ferrum {Iron Supplements} fructo-oligosaccharides Grape Polyphenols {Grape Flavonoids} Helianthus tuberosus {jerusalem artichoke} Hordeum vulgare {Barley} Outer Layers of Triticum aestivum {Wheat Bran}

Phaseolus vulgaris {Boston bean} Pulses, Beans raffinose {sugar beet} resistant starch resveratrol-pterostilbene {grapes, blueberries} Saccharomyces cerevisiae var boulardii {S. boulardii} Sesamum indicum {Sesame} synthetic disaccharide derivative of lactose {Lactulose} Ulmus rubra {slippery elm} walnuts

### Sample of Literature Used

The following are some of the studies used to generate these suggestions.

Synergistic Biocidal Effects of Curcumin, Chitosan, and Nickel Titanate-Based Nanohybrids for Enhanced Antibacterial and Anticancer Therapies. ACS applied bio materials . 2025 May 14 Authors Jeyasingh E, Panneerselvam HM, Chandrasekaran K, Moorthy S Thyme oil-loaded chitosan microparticles: an antibacterial approach against pathogenic bacteria. 3 Biotech , Volume: 15 Issue: 5 2025 May Authors Thakur A.Sharma K The antibacterial capabilities of alginate encapsulated lemon essential oil nanocapsules against multi-drug-resistant Acinetobacter baumannii. Scientific reports , Volume: 15 Issue: 1 2025 Jan 11 Authors Gholamhossein Tabar Valookolaei FS, Sazegar H, Rouhi L Effect of ozonation on the phytochemicals of black seed oil and its anti-microbial, anti-oxidant, anti-inflammatory, and antineoplastic activities in vitro. Scientific reports, Volume: 14 Issue: 1 2024 Dec 11 Authors Al-Rajhi AMH,Abdelghany TM,Almuhayawi MS,Alruhaili MH,Saddiq AA,Baghdadi AM,Al Jaouni SK,Albasri HM,Waznah MS.Alraddadi FA.Selim S Zingber officinale Uncovered: Integrating Experimental and Computational Approaches to Antibacterial and Phytochemical Profiling. Pharmaceuticals (Basel, Switzerland), Volume: 17 Issue: 11 2024 Nov 19 Authors Sulieman AME,Ibrahim SM,Alshammari M,Abdulaziz F,Idriss H,Alanazi NAH,Abdallah EM,Siddigui AJ,Shommo SAM,Jamal A,Badraoui R Ocimum basilicum seed-mediated green synthesis of silver nanoparticles: characterization and evaluation of biological properties. Discover nano, Volume: 19 Issue: 1 2024 Oct 28 Authors Fatima S,Shahid H,Zafar S,Arooj I,Ijaz S,Elahi A Impact of early postbiotic supplementation on broilers' responses to subclinical necrotic enteritis. Poultry science . Volume: 103 Issue: 12 2024 Oct 13 Authors Dong B,Calik A,Blue CEC,Dalloul RA Bacillus licheniformis suppresses Clostridium perfringens infection via modulating inflammatory response, antioxidant status, inflammasome activation and microbial homeostasis in broilers. Poultry science, Volume: 103 Issue: 11 2024 Aug 21 Authors Xiao X,Qin S,Cui T,Liu J,Wu Y,Zhong Y,Yang C Exploring bioactive compounds in chickpea and bean aquafaba: Insights from glycomics and peptidomics analyses. Food chemistry, Volume: 460 Issue: Pt 2 2024 Dec 1 Authors Huang YP, Masarweh C, Paviani B, Mills DA, Barile D Nanoemulsion of cinnamon oil to combat colistin-resistant Klebsiella pneumoniae and cancer cells. Microbial pathogenesis . Volume: 192 2024 Jul Authors El-Sherbiny GM,Kalaba MH,Foda AM,M E S,Youssef ASE,A Elsehemy I,Farghal EE,El-Fakharany EM Antimicrobial activity of Cinnamomum zevlanicum essential oil against colistin-resistant gram-negative bacteria. International journal of environmental health research, 2024 May 2 Authors Ben Selma W, Ferjeni S, Farouk A, Marzouk M, Boukadida J Unveiling the antibacterial mechanism of resveratrol against Aeromonas hydrophila through proteomics analysis. Frontiers in cellular and infection microbiology, Volume: 14 2024 Authors Fu Y,Zhang L,Lin Y,Zhao X,Chen H,Zhong Y,Jiang W,Wu X,Lin X Integrated multi-omics profiling highlights the benefits of resveratrol hydroxypropyl-B-cyclodextrin inclusion complex for A53T transgenic mice through the microbiota-gut-brain axis. Food & function . Volume: 15 Issue: 3 2024 Feb 5 Authors Sun X, Feng S, Qin B, Ye J, Xie L, Gui J, Sang M Molecular docking, molecular dynamics simulation, and MM/PBSA analysis of ginger phytocompounds as a potential inhibitor of AcrB for treating multidrug-resistant Klebsiella pneumoniae infections. Journal of biomolecular structure & dynamics, 2024 Jan 2 Authors Sahoo M, Behera DU, Gaur M, Subudhi E Chemoprofiling and antimicrobial activity of medicinal herbs used in the treatment of inflammatory bowel disease. Cellular and molecular biology (Noisy-le-Grand, France), Volume: 69 Issue: 13 2023 Dec 10

Authors Alshahrani A.Ali A.Abdelwahab SF Spices as Sustainable Food Preservatives: A Comprehensive Review of Their Antimicrobial Potential. Pharmaceuticals (Basel, Switzerland), Volume: 16 Issue: 10 2023 Oct 12 Authors Sulieman AME, Abdallah EM, Alanazi NA, Ed-Dra A, Jamal A, Idriss H, Alshammari AS, Shommo SAM Corrigendum to "Nigella sativa as an antibiotic alternative to promote growth and enhance health of broilers challenged with Eimeria maxima and Clostridium perfringens" [Poult. Sci. 102 (8) (2023) 102831]. Poultry science, Volume: 102 Issue: 10 2023 Oct Authors Manjunatha V.Nixon JE.Mathis GF.Lumpkins BS.Güzel-Seydim ZB.Seydim AC.Greene AK.Jiang X Antibacterial activity of Thymus vulgaris (thyme) essential oil against strains of Pseudomonas aeruginosa, Klebsiella pneumoniae and Staphylococcus saprophyticus isolated from meat product. Brazilian journal of biology = Revista brasleira de biologia, Volume: 83 2023 Authors Diniz AF, Santos B, Nóbrega LMIMO, Santos VRL, Mariz WS, Cruz PSC, Nóbrega RO, Silva RL, Paula AFR, Santos JRDA, Pessôa HLF,Oliveira-Filho AA Liposomal Epigallocatechin-3-Gallate for the Treatment of Intestinal Dysbiosis in Children with Autism Spectrum Disorder: A Comprehensive Review. Nutrients , Volume: 15 Issue: 14 2023 Jul 24 Authors de la Rubia Ortí JE, Moneti C, Serrano-Ballesteros P, Castellano G, Bayona-Babiloni R, Carriquí-Suárez AB, Motos-Muñoz M,Proaño B,Benlloch M Assessment of anticancer, antimicrobial, antidiabetic, anti-obesity and antioxidant activity of Ocimum Basilicum seeds essential oil from Palestine. BMC complementary medicine and therapies, Volume: 23 Issue: 1 2023 Jul 4 Authors Eid AM, Jaradat N, Shraim N, Hawash M, Issa L, Shakhsher M, Nawahda N, Hanbali A, Barahmeh N, Taha B, Mousa A Nigella sativa as an antibiotic alternative to promote growth and enhance health of broilers challenged with Eimeria maxima and Clostridium perfringens. Poultry science, Volume: 102 Issue: 8 2023 Aug Authors Manjunatha V,Nixon JE,Mathis GF,Lumpkins BS,Güzel-Seydim ZB,Seydim AC,Greene AK,Jiang X Targeted modification of gut microbiota and related metabolites via dietary fiber. Carbohydrate polymers , Volume: 316 2023 Sep 15 Authors Nie Q,Sun Y,Li M,Zuo S,Chen C,Lin Q,Nie S Impact of cooking methods of red-skinned onion on metabolic transformation of phenolic compounds and gut microbiota changes. Food & function, Volume: 14 Issue: 8 2023 Apr 24 Authors Cattivelli A.Nissen L.Casciano F.Tagliazucchi D.Gianotti A Comparative study between two different morphological structures based on polylactic acid, nanocellulose and magnetite for co-delivery of flurouracil and curcumin. International journal of biological macromolecules , Volume: 230 2023 Mar 1 Authors Bakr EA.Gaber M.Saad DR.Salahuddin N Quercetin positively affects gene expression profiles and metabolic pathway of antibiotic-treated mouse gut microbiota. Frontiers in microbiology, Volume: 13 2022 Authors Mi W,Hu Z,Xu L,Bian X,Lian W,Yin S,Zhao S,Gao W,Guo C,Shi T Nutritionally rich biochemical profile in essential oil of various Mentha species and their antimicrobial activities. Protoplasma, Volume: 260 Issue: 2 2023 Mar Authors Fazal H.Akram M.Ahmad N.Qaisar M.Kanwal F.Rehman G.Ullah I In-Vitro Antibacterial Activity of Curcumin-Loaded Nanofibers Based on Hyaluronic Acid against Multidrug-Resistant ESKAPE Pathogens. Pharmaceutics . Volume: 14 Issue: 6 2022 May 31 Authors Snetkov P,Rogacheva E,Kremleva A,Morozkina S,Uspenskaya M,Kraeva L Chitosan and Chitooligosaccharide: The Promising Non-Plant-Derived Prebiotics with Multiple Biological Activities. International journal of molecular sciences, Volume: 23 Issue: 12 2022 Jun 17 Authors Guan Z, Feng Q Detection and isolation of typical gut indigenous bacteria in ICR mice fed wheat bran and wheat straw fibre. Food chemistry. Molecular sciences, Volume: 4 2022 Jul 30 Authors Takei N,Kuda T,Handa N,Fujita S,Takahashi H,Kimura B Dietary Probiotic Supplementation Suppresses Subclinical Necrotic Enteritis in Broiler Chickens in a Microbiota-Dependent Manner. Frontiers in immunology, Volume: 13 2022 Authors Zhao Y,Zeng Y,Zeng D,Wang H,Sun N,Xin J,Zhou M,Yang H,Lei L,Ling H,Khalique A,Rajput DS,Gan B,Wan Z,Yao Z,Fang J,Pan K,Shu G,Jing B,Zhang D,Ni X

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