

**Table S1.** A list of *Blautia* species validly and correctively nominated under the International Code of Nomenclature of Prokaryotes (bacteriological code). Note that the genus *Blautia* is comprised of 53 child taxa as of 18 July 2024 (<https://lpsn.dsmz.de/genus/blautia>, accessed on 18 July 2024).

Species Name	Brief Description	Refs.
1 <i>B. acetigignens</i>	<ul style="list-style-type: none"> <li>• acetic acid-producing species</li> <li>• isolated from human feces</li> <li>• DNA G+C content is 44.4%</li> <li>• Type strain: DSM 102165; JCM 34803; Sanger_28</li> </ul>	Hitch et al. 2022 [1]
2 <i>B. ammoniilytica</i>	<ul style="list-style-type: none"> <li>• ammonia-degrading species</li> <li>• isolated from human feces</li> <li>• DNA G+C content is 44.4%</li> <li>• Type strain: DSM 102163; JCM 34802; Sanger_23</li> </ul>	Hitch et al. 2022 [1]
3 <i>B. argi</i>	<ul style="list-style-type: none"> <li>• produces acetic and lactic acids</li> <li>• isolated from dog feces</li> <li>• DNA G+C content is 44.2%</li> <li>• Type strain: JCM 31394; KCTC 15426; N6H1-15</li> </ul>	Paek et al. 2019 [2]
4 <i>B. caecimuris</i>	<ul style="list-style-type: none"> <li>• produces acid</li> <li>• Isolated from a caecum of mouse</li> <li>• G+C content is 43.0%</li> <li>• Type strain: DSM 29492; KCTC 15541; SJ18</li> </ul>	Lagkouvardos et al. 2016 [3]
5 <i>B. celeris</i>	<ul style="list-style-type: none"> <li>• fast growing species</li> <li>• isolated from human feces</li> <li>• DNA G+C content is 54.21%</li> <li>• Type strain: CGMCC 1.32807; KCTC 25086; NSJ 34</li> </ul>	Liu et al. 2022 [4]
6 <i>B. coccoides</i>	<ul style="list-style-type: none"> <li>• grape-like shape and produces succinic acid</li> <li>• isolated from mice feces</li> <li>• DNA G+C content is 43–45%</li> <li>• Type strain: ATCC 29236; DSM 935; JCM 1395; NCTC 11035</li> </ul>	(Kaneuchi et al. 1976) [5] Liu et al. 2008 [6]
7 <i>B. faecicola</i>	<ul style="list-style-type: none"> <li>• produces acetic acid</li> <li>• isolate from human feces</li> <li>• DNA G+C content is 44.7%</li> <li>• Type strain: DSM 107827; KCTC 15706; KGMB01111</li> </ul>	Kim et al. 2020 [7]
8 <i>B. faecis</i>	<ul style="list-style-type: none"> <li>• Produces lactic and acetic acids</li> <li>• Isolated from human feces</li> <li>• DNA G+C content is 41.6%</li> <li>• Type strain: DSM 27629; JCM 17205; KCTC 5980; M25</li> </ul>	Park et al. 2013 [8]
9 <i>B. fusiformis</i>	<ul style="list-style-type: none"> <li>• spindle shaped species</li> <li>• isolated from human feces</li> <li>• DNA G+C content is 44.1%</li> <li>• Type strain: CLA-AA-H217; DSM 112726; JCM 35880</li> </ul>	Afrizal et al. 2023 [9]
10 <i>B. glucerasea</i>	<ul style="list-style-type: none"> <li>• able to hydrolyze glucosylceramide and produces acetate, formate, and lactate</li> <li>• isolated from dog feces</li> <li>• DNA G+C content is 40.7%</li> <li>• Type strain: DSM 22028; HFTH-1; NBRC 104932</li> </ul>	Furuya et al. 2010 [10]
11 <i>B. hansenii</i>	<ul style="list-style-type: none"> <li>• named after P. Arne Hansen, a Danish-American bacteriologist, and isolated from human feces</li> <li>• DNA G+C content is 41.1%</li> <li>• Type strain: ATCC 27752; CIP 104219; DSM 20583; JCM 14655</li> </ul>	(Holdeman and Moore 1974) [11] Liu et al. 2008 [6]
12 <i>B. hominis</i>	<ul style="list-style-type: none"> <li>• produces acetic acid, succinic acid, lactic acid and fumaric acid</li> <li>• isolated from human feces</li> </ul>	Shin et al. 2018 [12]

		<ul style="list-style-type: none"> <li>DNA G+C content is 46.3%</li> <li>Type strain: JCM 32276; KB1; KCTC 15618</li> </ul>	
13	<i>B. hydrogenotrophica</i>	<ul style="list-style-type: none"> <li>able to use H<sub>2</sub>/CO<sub>2</sub> as energy source and produces acetic acid</li> <li>isolated from human feces</li> <li>DNA G+C content is 45.2%</li> <li>Type strain: DSM 10507; JCM 14656; S5a33; S5a36</li> </ul>	(Bernalier et al. 1997) [13] Liu et al. 2008 [6]
14	<i>B. intestinalis</i>	<ul style="list-style-type: none"> <li>Produces butyric acid</li> <li>Isolated from human feces</li> <li>DNA G+C content is 42.36%</li> <li>Type strain: 27–44; CGMCC 1.5285; NBRC 113774</li> </ul>	Wang et al. 2021 [14]
15	<i>B. liquoris</i>	<ul style="list-style-type: none"> <li>produces acetic acid</li> <li>isolated from the mud in a fermentation cellar used for the production of Chinese strong-flavor liquor</li> <li>DNA G+C content is 42.1%</li> <li>Type strain: CGMCC 1.5299; CGMCC T 1.5299; JCM 34225; KCTC 25163; LZLJ-3</li> </ul>	Lu et al. 2021 [15]
16	<i>B. luti</i>	<ul style="list-style-type: none"> <li>produces acetate, succinate, and hydrogen</li> <li>isolated from human feces</li> <li>DNA G+C content is 43.3%</li> <li>Type strain: BlnIX; CCUG 45635; DSM 14534</li> </ul>	(Simmering et al. 2002) [16] Liu et al. 2008 [6]
17	<i>B. obeum</i>	<ul style="list-style-type: none"> <li>Oval shaped species and produces acetic acid and ethanol</li> <li>Isolated from human feces</li> <li>DNA G+C content is 41%</li> <li>Type strain: ATCC 29174; DSM 25238; KCTC 15206</li> </ul>	(Moore et al. 1976) [17] Lawson and Finegold 2015 [18]
18	<i>B. parvula</i>	<ul style="list-style-type: none"> <li>Species with small or little cells, and produces acetic acid, lactic acid and succinic acid</li> <li>isolated from human feces</li> <li>DNA G+C content is 46.7%</li> <li>Type strain: BCRC 81349; DN0138; NBRC 113351</li> </ul>	Miura et al. 2023 [19]
19	<i>B. producta</i>	<ul style="list-style-type: none"> <li>Produces acetic and hydrogen</li> <li>Isolated from human feces</li> <li>DNA G+C content is 45%</li> <li>Type strain: ATCC 27340; CCUG 10976; CCUG 9990; DSM 2950; JCM 1471</li> </ul>	(Prévot 1941) Liu et al. 2008 [6]
20	<i>B. pseudococcoides</i>	<ul style="list-style-type: none"> <li>falsely recognized as <i>Blautia coccoides</i></li> <li>Type strain: DSM 26115; JCM 35243; YL58</li> </ul>	Maturana and Cárdenas 2022 [20]
21	<i>B. schinkii</i>	<ul style="list-style-type: none"> <li>named after Bernard Schink, produces acetic acid</li> <li>isolated from rumen content of suckling lamb</li> <li>DNA G+C content is 46.4%</li> <li>Type strain: Bie 41; CCUG 53897; CIP 105464; DSM 10518; JCM 14657</li> </ul>	(Rieu-Lesme et al. 1997) [21] Liu et al. 2008 [6]
22	<i>B. stercoris</i>	<ul style="list-style-type: none"> <li>Produces acetic acid</li> <li>Isolated from human feces</li> <li>DNA G+C content is 35.6%</li> <li>Type strain: GAM 6-1; JCM 17204; KCTC 5981</li> </ul>	Park et al. 2012 [22]
23	<i>B. wexlerae</i>	<ul style="list-style-type: none"> <li>named in honor of the American microbiologist Hannah M. Wexler</li> <li>isolated from human feces</li> <li>Type strain: ATCC BAA-1564; DSM 19850; WAL 14507</li> </ul>	Liu et al. 2008 [6]

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