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Salt Susceptible Gut Indigenous Bacteria (S-SIB)
- Does the Increasing or Decreasing Affect Host Health?

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Summary

Both deficiency and overdose of minerals and salts have an undesirable effect on health. Changes in dietary composition affect the intestinal microbiome immediately. To determine the presence of intestinal indigenous bacteria susceptible to minerals and/or salts (MS-SIB), 5 week old ICR mice were administered a diet containing 3.5% (w/w) mineral mix (Control), 1% mineral mix (LM), or 3.5% mineral mix and 4% NaCl (HS) for 14 days. Drinking water consumption of HS group was 2.7 times higher than any of the other groups. Body weight gain was lower with HS. The caecal microbiome was analysed with 16S rDNA (V4) amplicon sequencing. Among the dominant bacteria, *Turicibacter sanguinis*- and *Clostridium disporicum*-like bacteria, belonging to Firmicutes, were suppressed drastically by HS. *Eubacterium coprostanoligenes*- and *Bateroides acidifaciens*-like bacteria tended to be higher and lower, respectively, with LM. In the present study, suppression of *T. sanguinis* and *C. disporicum* by a HS diet was the most notable effect. These have been detected as an intestinal epithelial serotonin related-bacteria and an ursodeoxycholic acid producer, respectively. The effects of ingested salt on the host may also involve interactions between the host and the gut microbe. Isolation of human MS-SIB, in future, is considered promising for the development of new probiotics and functional foods.