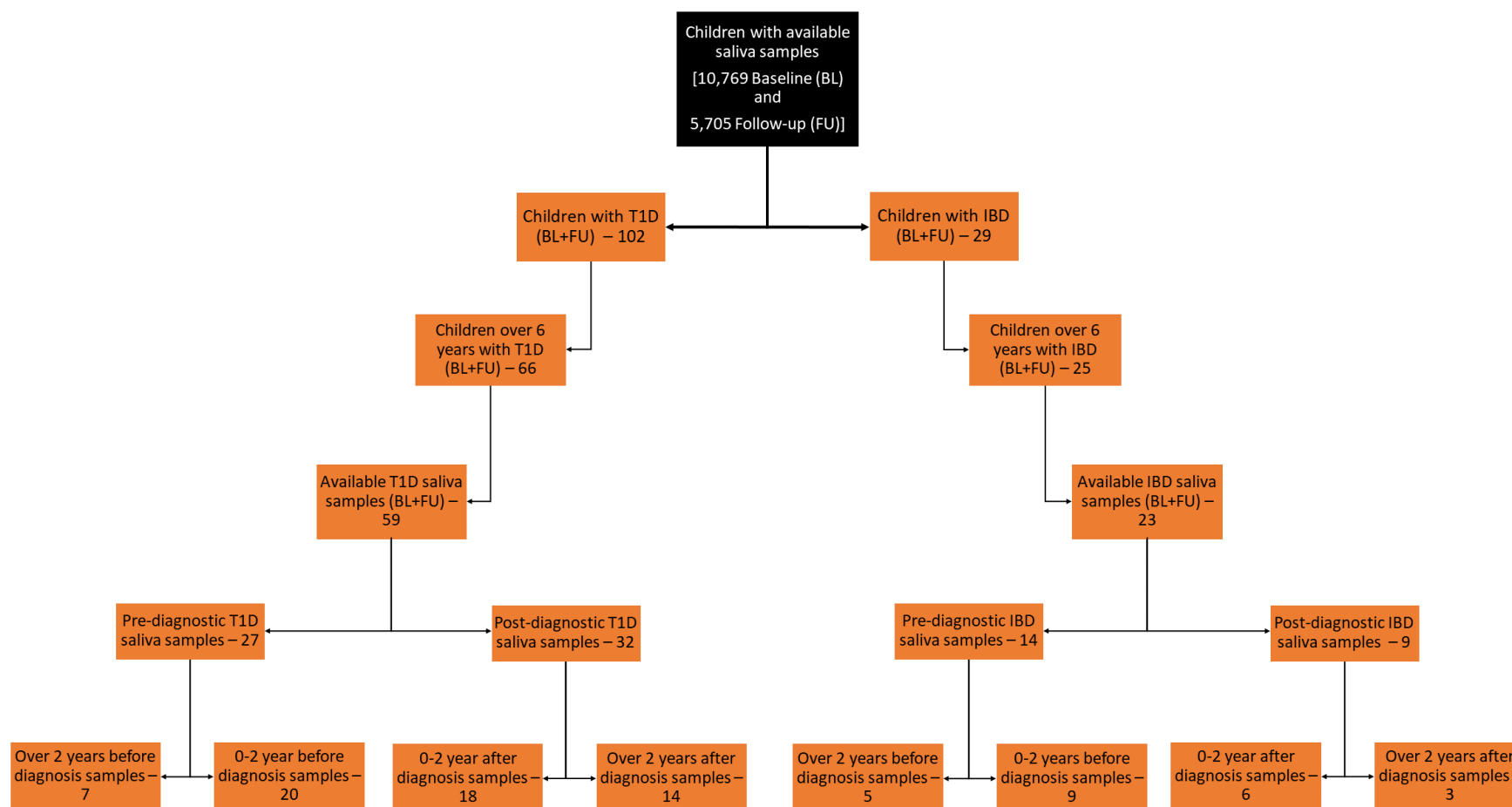
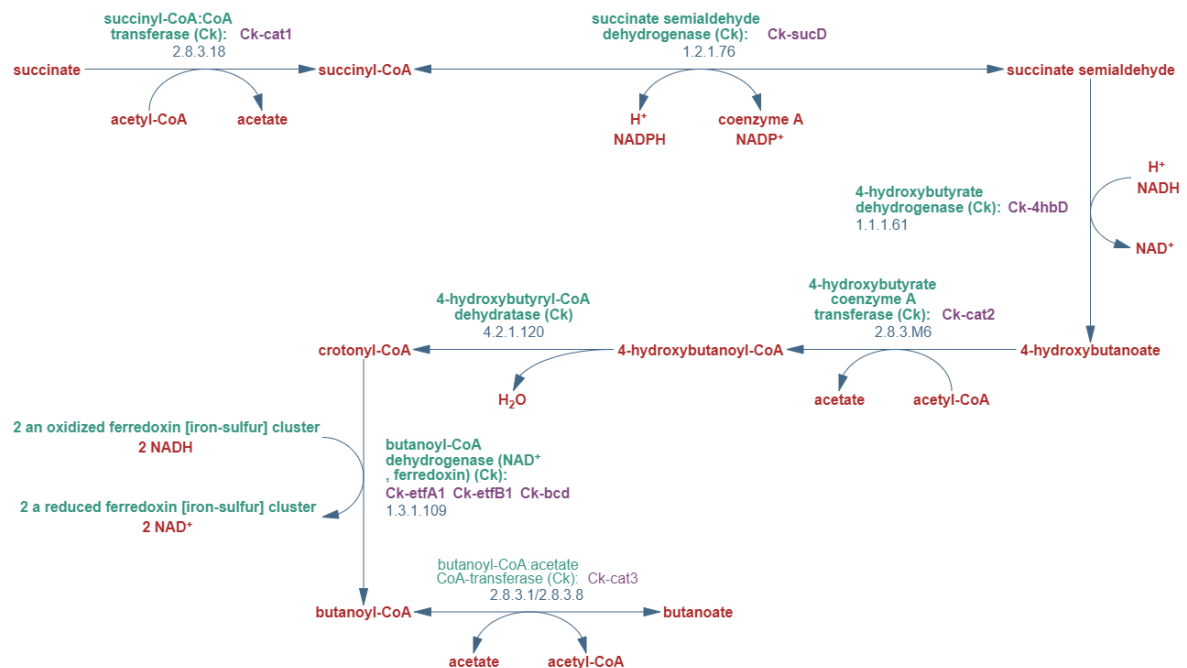


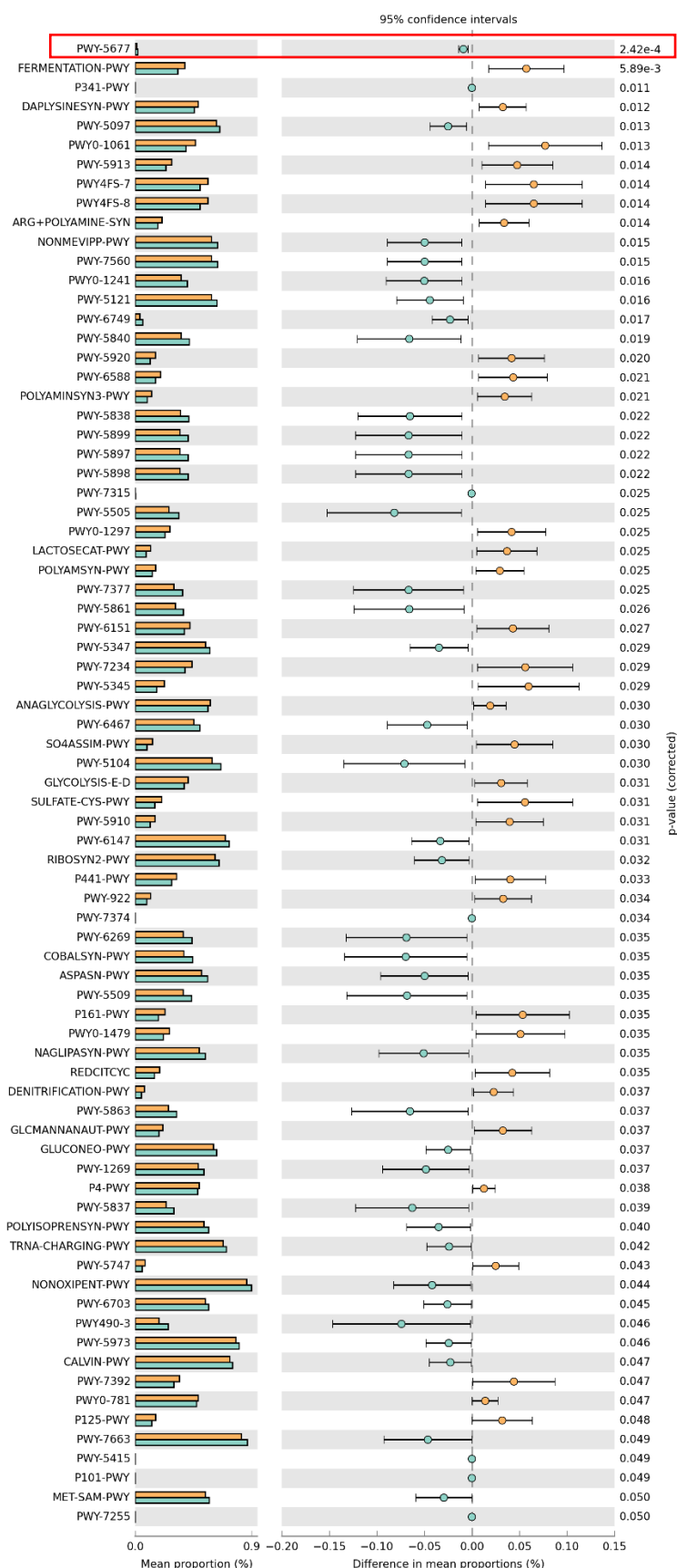
**Supplementary Figure S1.** Flow-chart showing available saliva samples in the Fin-HIT cohort, selection process, and categorization of saliva samples used in this study.



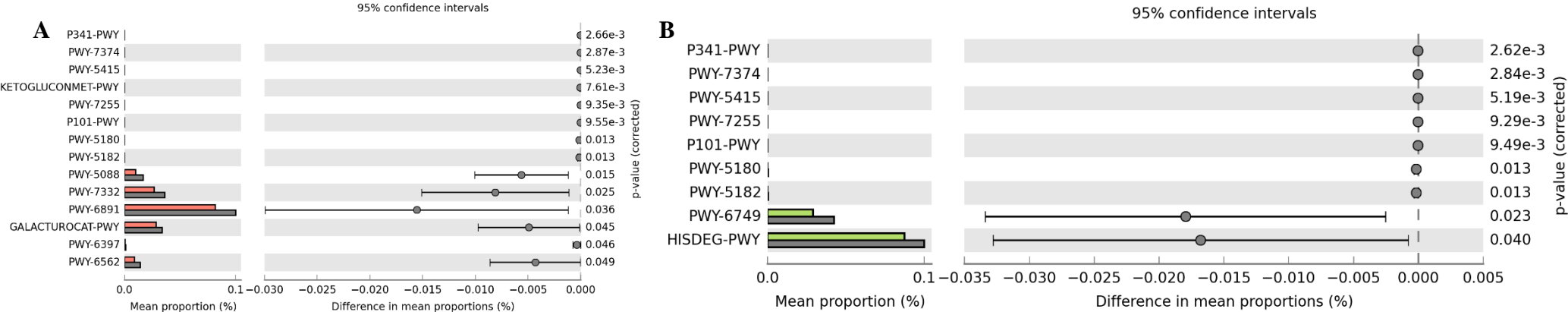
**Supplementary Figure S2.** PWY-5677 metabolic pathway fermenting succinate to butyrate, which was lower in the saliva of children who developed type 1 diabetes (T1D) within 0-2 years before diagnosis (n=20) than in all controls (n=81). Reprinted from MetaCyc (<https://metacyc.org/META/NEW-IMAGE?object=PWY-5677&redirect=T>).



**Supplementary Figure S3.** Altered metabolic pathways (crude  $p$ -value  $\leq 0.05$ ) within 0-2 years before T1D diagnosis ( $n=20$ ) when compared with all controls ( $n=81$ ). PWY-5677 pathway marked in red was the only pathway significant after  $p$ -value correction.



**Supplementary Figure S4.** Altered metabolic pathways (crude  $p$ -value  $\leq 0.05$ ) for A) all pre-diagnostic IBD samples (n=14; in red) when compared with all controls (n=81; in grey). B) all pre-diagnostic T1D samples (n=27; in green) when compared with all controls (n=81; in grey). None of these pathways remained significant after  $p$ -value correction.



**Supplementary Table S1.** Comparison of beta-diversity using Permutational Multivariate Analysis of Variance (PERMANOVA) between 1) All pre-T1D and post-T1D samples; 2) All pre-IBD and post-IBD samples; and (3) pre- and post-diagnostic samples from the same individuals with either T1D or IBD (i.e. related samples).

	Comparison of Beta-diversity between Saliva Samples	Sums Of Squares	F statistics	R <sup>2</sup>	p-value	p-value (corrected)
1	Pre-T1D vs. Post-T1D	0.017	0.21	0.0035	0.96	0.96
2	Pre-IBD vs. Post-IBD	0.103	1.30	0.0581	0.31	0.52
3	Pre- vs. Post-diagnostic samples from the same individuals with T1D/IBD	0.032	0.33	0.02	0.87	0.87