

SUPPLEMENTARY MATERIALS

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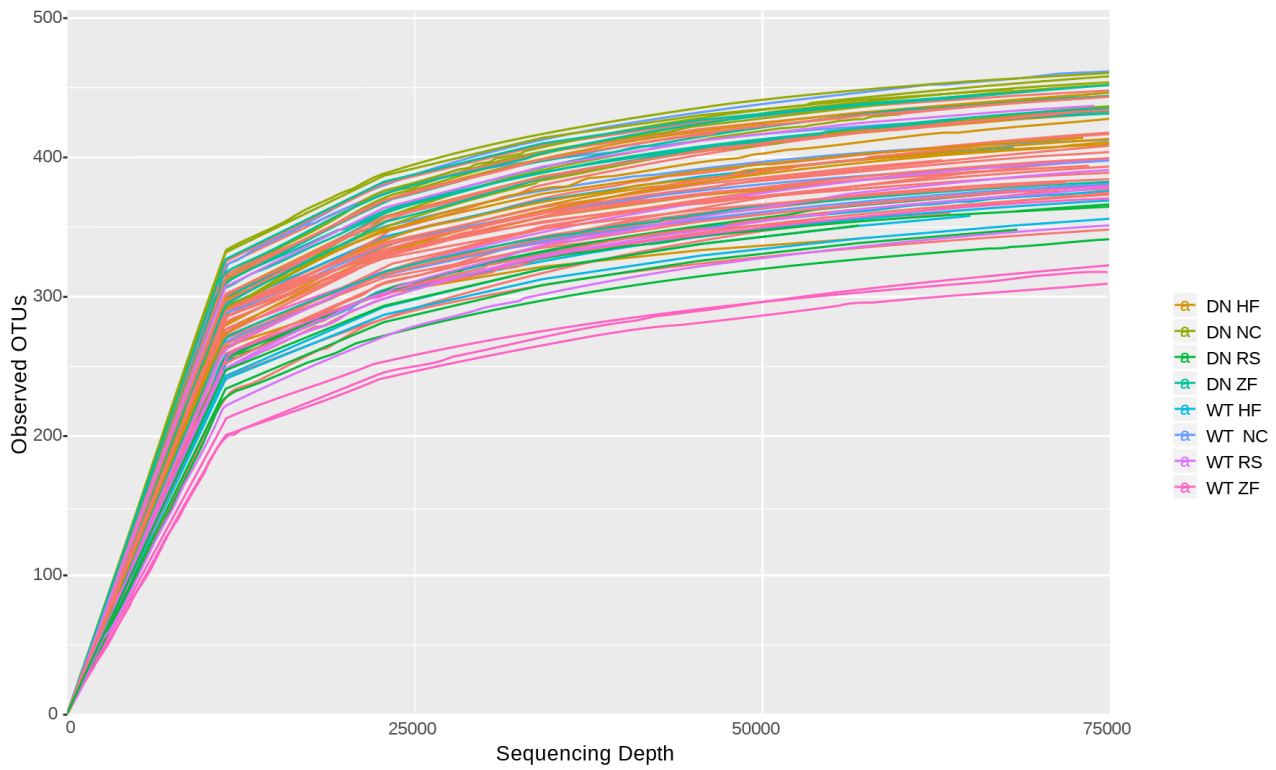


Figure S1: Rarefaction Curve.

The y axis shows observed species (operational taxonomic units, OTUs) and the x axis shows number of valid sequences per sample. Each curve in the graph represents an individual sample, grouped according to treatment (legend). All curves plateau indicating, indicating adequate sequencing depth.

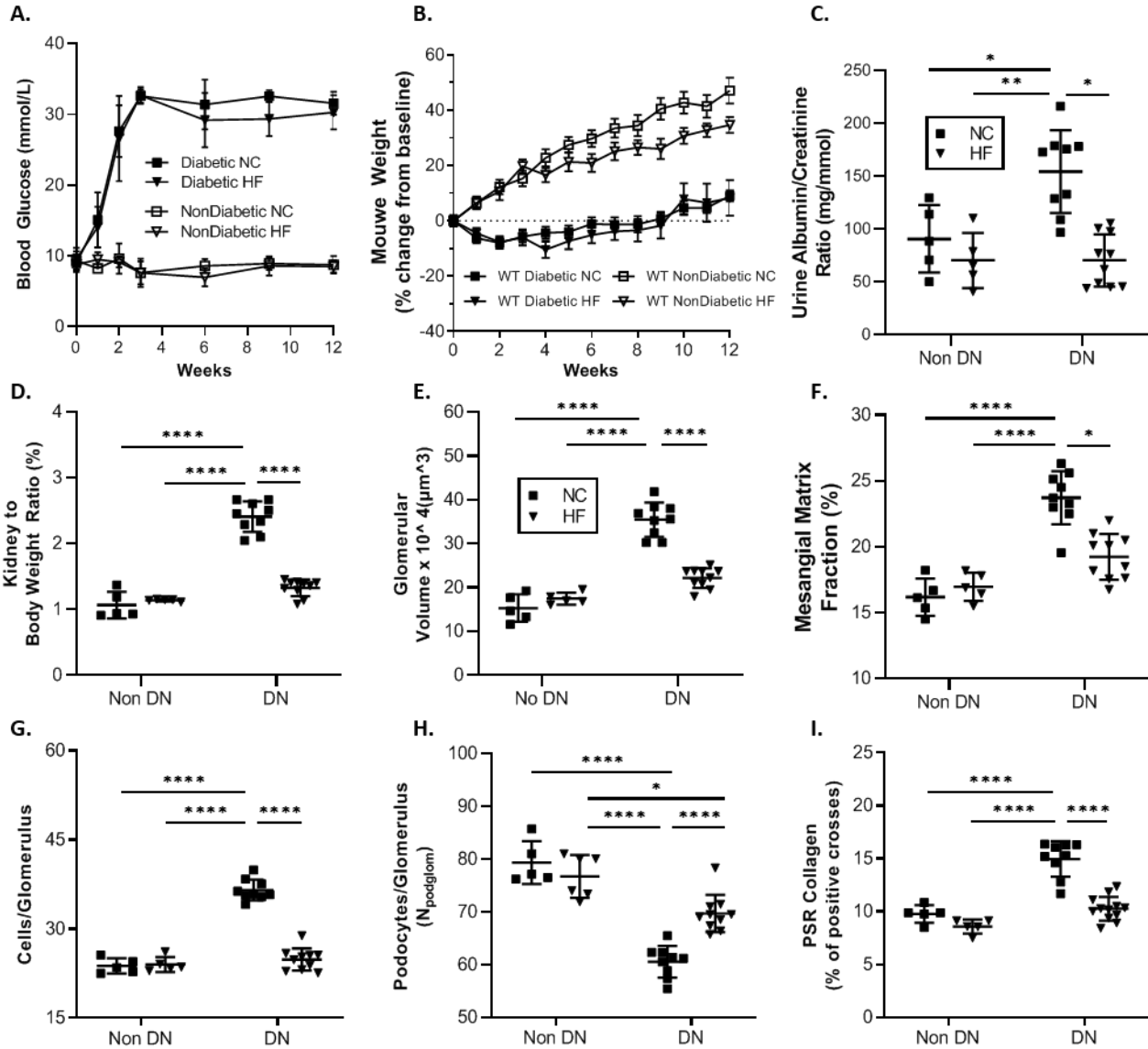


Figure S2. HF Diet (SF11-029) attenuates the clinical and histological manifestations of Diabetic Nephropathy.

High fiber fed mice displayed a similar progression of blood glucose (A) and body weight (B) profiles compared to NC fed controls over a period of 12 weeks. HF fed diabetic mice were protected from development of albuminuria, with no significant difference compared to non-diabetic controls at 12 weeks (C). Diabetic glomerular and interstitial changes including kidney to body weight ratio (D), glomerular volume and cellularity (E, G), mesangial expansion (F), podocyte density (H) and interstitial

fibrosis (I) are diminished with HF diet vs NC fed mice. Data are shown as means \pm SD; **** $p < 0.0001$,

** $P < 0.01$, * $P < 0.05$.

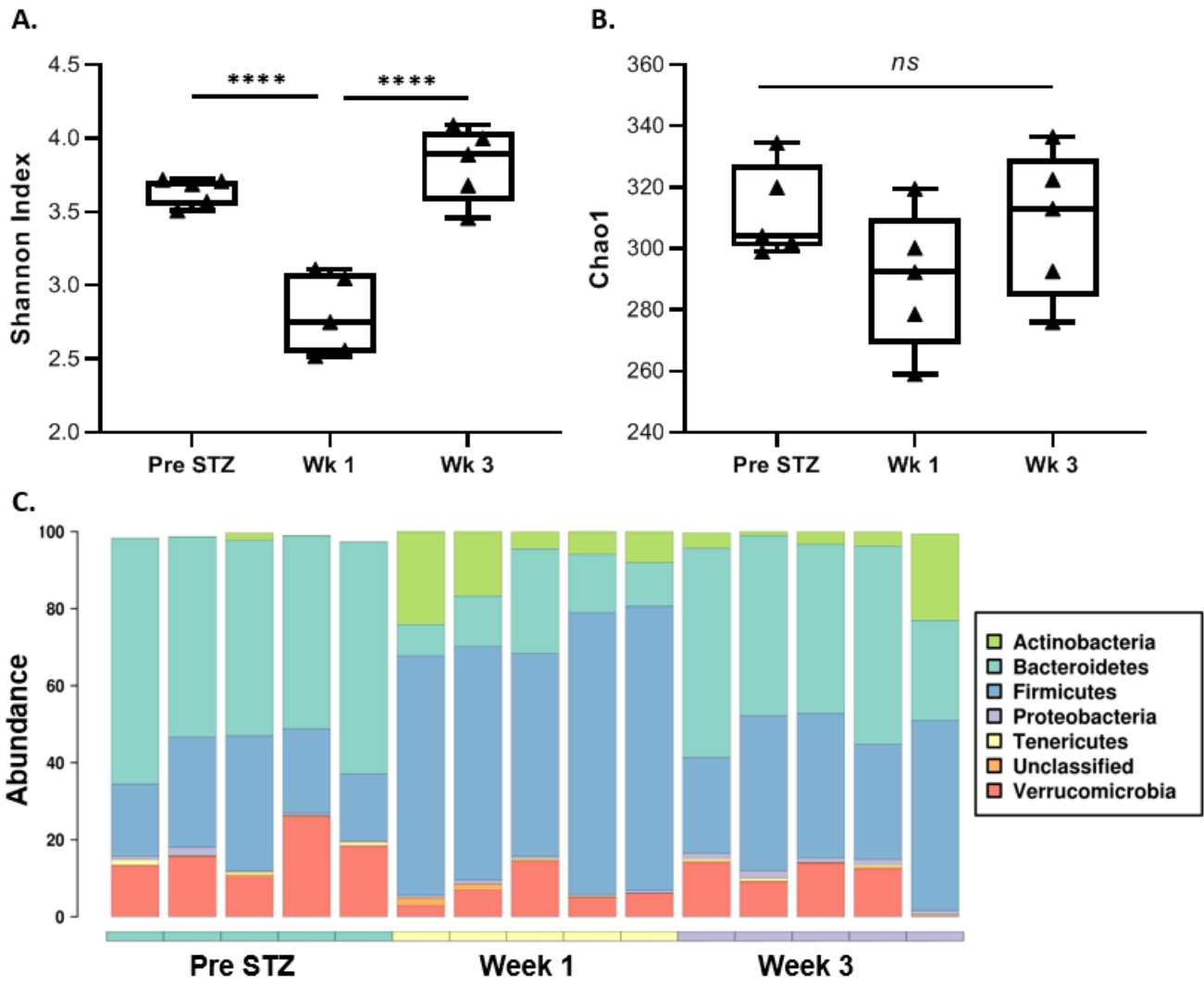


Figure S3. Changes to gut microbiota prior to and following STZ injection. Species richness estimate (Chao1) and diversity index (Shannon) on NC at three time points, prior to and following STZ injection (A, B) demonstrating a significant drop in diversity and a trend to reduced evenness at week 1 which recovers by week 3. (C) Relative abundance of bacteria presented at the phylum level (legend) prior to, and following STZ injection. Data are shown as means \pm SD; **** $P < 0.0001$.

Nutritional Parameter	Control (AING93G)	Resistant Starch (SF11-025)	High Fiber (SF11-029)	Zero Fiber (SF09-028)
Crude Fiber	4.7%	4.7%	35%	0%
AD Fiber	4.7%	4.7%	35%	0%
Starch	53.6%	63.6%	40.2%	0%
	(wheat)	(all resistant)	(wheat)	
Total Protein	19.4%	19.4%	13.2%	19.4%
Total Fat	7%	7%	4.5%	7%
Digestible Energy	16.1MJ/kg	16.3MJ/kg	11MJ/kg	16.9MJ/kg
Total Digestible Energy From:				
Lipids	16%	16%	15%	16%
Protein	21%	21%	19.7%	21%
Carbohydrate	56.8%	62%	58.7%	-

^AD, acid detergent

Table S1. Nutritional parameters of experimental diets.