

Supplementary Table SI. Detailed information for all Ivs

SNP	chr.exposure	pos.exposure	effect_allele.exposure	other_allele.exposure	beta.exposure	se.exposure	pval.exposure	eaf.exposure	samplesize.exposure	exposure	id.exposure	
rs76855636	7	71628549	A	G	-0.519436	0.1100227	3.18E-06	0.1044084	431	unknown Rothia species (ASV0012)	unknown Rothia species (ASV0012)	
rs2975395	8	3949655	T	C	0.4067981	0.087355	4.29E-06	0.1600928	431	unknown Rothia species (ASV0012)	unknown Rothia species (ASV0012)	

Supplementary Table SII. Relationship between oral microbiota and CKD (negative results)

Exposure	Outcome	N.SNPs	Methods	OR (95% CI)	P
Species parainfluenzae	CKD	3	IVW	0.98 (0.95-1.02)	0.38
Species histicola		7	IVW	1.01 (0.98-1.04)	0.56
unknown Streptococcus species (ASV0006)		7	IVW	0.98 (0.95-1.01)	0.2
unknown Porphyromonas species (ASV0008)		4	IVW	1.03 (0.99-1.07)	0.1
unknown Streptococcus species (ASV0009)		5	IVW	0.99 (0.96-1.03)	0.73
Species periodonticum		7	IVW	1.01 (0.99-1.04)	0.29
unknown Rothia species (ASV0012)		2	IVW	0.98 (0.92-1.03)	0.4
Species mucilaginosa		11	IVW	0.99 (0.97-1.02)	0.56
Phylum Firmicutes		8	IVW	1 (0.97-1.04)	0.84
Phylum Proteobacteria		7	IVW	1 (0.97-1.02)	0.84
Class Bacilli		4	IVW	1.02 (0.98-1.06)	0.41
Order Bacteroidales		13	IVW	1 (0.98-1.02)	0.9
Order Fusobacteriales		7	IVW	0.99	0.37

			(0.96-1.01)	
Order Actinomycetales	9	IVW	0.98 (0.95-1.01)	0.24
Order Clostridiales	9	IVW	1 (0.97-1.02)	0.76
Family Veillonellaceae	4	IVW	1.02 (0.94-1.1)	0.62
Family Pasteurellaceae	9	IVW	0.99 (0.97-1.02)	0.66
Family Prevotellaceae	8	IVW	1.01 (0.97-1.05)	0.57
Family Actinomycetaceae	5	IVW	1.01 (0.98-1.05)	0.39
Family Lachnospiraceae_[XIV]	9	IVW	1 (0.97-1.03)	0.93
Genus Veillonella	6	IVW	1.01 (0.96-1.07)	0.57
Genus Haemophilus	7	IVW	0.99 (0.96-1.01)	0.26
Genus Streptococcus	2	IVW	0.99 (0.94-1.05)	0.77
Genus Neisseria	5	IVW	1 (0.95-1.05)	0.9
Genus Prevotella	11	IVW	1.01 (0.98-1.04)	0.41
Genus Porphyromonas	4	IVW	1.01 (0.98-1.05)	0.49
Genus Fusobacterium	11	IVW	1.01 (0.99-1.03)	0.35

Genus Rothia		6	IVW	0.98 (0.95-1.03)	0.45
Genus Schaalia		12	IVW	1.02 (0.99-1.04)	0.17
Genus Granulicatella		6	IVW	1.03 (0.99-1.07)	0.16
Genus Leptotrichia		3	IVW	1.02 (0.98-1.06)	0.32
Genus Alloprevotella		2	IVW	1 (0.93-1.07)	0.92
unknown Neisseria species (ASV0004)		4	IVW	0.98 (0.94-1.03)	0.52
Species parvula		2	IVW	0.98 (0.94-1.03)	0.4
Species dispar		3	IVW	0.99 (0.94-1.04)	0.58
Species micronuciformis		6	IVW	0.99 (0.96-1.02)	0.46
Species pallens		3	IVW	1.02 (0.95-1.08)	0.6
unknown Rothia species (ASV0016)		6	IVW	0.99 (0.97-1.02)	0.58
unknown Schaalia species (ASV0017)		6	IVW	1.01 (0.98-1.03)	0.69
Species rogosae		4	IVW	1 (0.96-1.05)	0.91
unknown Gemella		6	IVW	1.01 (0.98-1.04)	0.45
Species parainfluenzae	UACR	3	IVW	1	0.84

			(0.99-1.01)	
Species histicola	7	IVW	0.99 (0.99-1)	0.13
unknown Streptococcus species (ASV0006)	7	IVW	1 (1-1.01)	0.84
unknown Porphyromonas species (ASV0008)	4	IVW	0.99 (0.98-1.01)	0.33
unknown Streptococcus species (ASV0009)	5	IVW	1 (0.99-1.01)	0.62
Species periodonticum unknown Rothia species (ASV0012)	7 2	IVW IVW	1 (0.99-1) 0.99 (0.98-1.01)	0.44 0.39
Species mucilaginosa	11	IVW	1 (0.99-1)	0.3
Phylum Firmicutes	8	IVW	1 (1-1.01)	0.32
Phylum Proteobacteria	7	IVW	0.99 (0.99-1)	0.07
Class Bacilli	4	IVW	1.01 (1-1.01)	0.18
Order Bacteroidales	13	IVW	1 (0.99-1.01)	0.98
Order Actinomycetales	9	IVW	1 (1-1.01)	0.87
Order Clostridiales	9	IVW	1 (0.99-1.01)	0.5
Family Veillonellaceae	4	IVW	0.99 (0.98-1.01)	0.36
Family Pasteurellaceae	9	IVW	1 (0.99-1)	0.57
Family Prevotellaceae	8	IVW	1 (0.99-1)	0.4
Family	5	IVW	0.99	0.09

Actinomycetaceae			(0.99-1)	
Family	9	IVW	1 (0.99-1)	0.25
Lachnospiraceae_[XIV]				
Genus Veillonella	6	IVW	1 (0.99-1.01)	0.63
Genus Haemophilus	7	IVW	1 (0.99-1)	0.39
Genus Streptococcus	2	IVW	1 (0.99-1.01)	0.54
Genus Neisseria	5	IVW	1 (0.99-1)	0.35
Genus Prevotella	11	IVW	1 (0.99-1)	0.66
Genus Porphyromonas	4	IVW	1 (0.99-1.01)	0.92
Genus Fusobacterium	11	IVW	1 (1-1.01)	0.21
Genus Rothia	6	IVW	1 (0.99-1.01)	1
Genus Schaalia	12	IVW	1 (0.99-1)	0.52
Genus Granulicatella	6	IVW	1 (0.99-1.01)	0.89
Genus Leptotrichia	3	IVW	0.99 (0.98-1)	0.06
Genus Alloprevotella	2	IVW	1 (0.99-1.01)	0.99
unknown Veillonella species (ASV0001)	5	IVW	1 (1-1.01)	0.36
unknown Neisseria species (ASV0004)	4	IVW	0.99 (0.99-1)	0.17
Species parvula	2	IVW	0.99 (0.98-1)	0.09
Species dispar	3	IVW	1	0.65

				(0.98-1.01)	
Species					
micronuciformis	6	IVW	1 (0.99-1)	0.46	
Species pallens	3	IVW	1 (1-1.01)	0.39	
unknown Schaalia			1		
species (ASV0017)	6	IVW	(0.99-1.01)	0.84	
Species rogosae	4	IVW	1 (0.99-1.01)	0.94	
unknown Gemella	6	IVW	1 (1-1.01)	0.25	
Species parainfluenzae	Rapid3	3	IVW	1.02 (0.98-1.06)	0.33
Species histicola	7	IVW	0.99 (0.97-1.02)	0.54	
unknown Streptococcus			1		
species (ASV0006)	6	IVW	(0.96-1.03)	0.91	
unknown			1.02		
Porphyromonas species	4	IVW	(0.97-1.08)	0.43	
(ASV0008)					
unknown Streptococcus			0.98		
species (ASV0009)	5	IVW	(0.94-1.03)	0.44	
Species periodonticum	7	IVW	1 (0.98-1.03)	0.82	
unknown Rothia			1		
species (ASV0012)	2	IVW	(0.96-1.05)	0.9	
Species mucilaginosa	11	IVW	1 (0.98-1.01)	0.62	
Phylum Firmicutes	8	IVW	0.99 (0.97-1.02)	0.69	
Phylum Proteobacteria	7	IVW	1.01	0.65	

			(0.98-1.03)	
Class Bacilli	4	IVW	1 (0.94-1.06)	0.9
Order Bacteroidales	13	IVW	1.01 (0.99-1.04)	0.28
Order Fusobacteriales	7	IVW	0.99 (0.96-1.01)	0.32
Order Actinomycetales	9	IVW	1.01 (0.99-1.04)	0.42
Order Clostridiales	9	IVW	0.96 (0.93-0.99)	0.01
Family Veillonellaceae	4	IVW	0.99 (0.94-1.04)	0.7
Family Pasteurellaceae	9	IVW	1 (0.98-1.03)	0.69
Family Prevotellaceae	8	IVW	1 (0.96-1.04)	0.9
Family Actinomycetaceae	5	IVW	1 (0.96-1.04)	0.96
Family Lachnospiraceae_[XIV]	9	IVW	0.97 (0.94-1.01)	0.15
Genus Veillonella	6	IVW	1.01 (0.97-1.05)	0.79
Genus Haemophilus	7	IVW	1.01 (0.98-1.04)	0.45
Genus Streptococcus	2	IVW	1.05 (0.99-1.11)	0.11
Genus Neisseria	5	IVW	1.01 (0.98-1.04)	0.65

Genus Prevotella	11	IVW	0.99 (0.96-1.03)	0.72
Genus Porphyromonas	4	IVW	1.01 (0.94-1.08)	0.82
Genus Fusobacterium	11	IVW	1.01 (0.99-1.03)	0.3
Genus Rothia	6	IVW	1.01 (0.97-1.04)	0.74
Genus Schaalia	12	IVW	0.98 (0.96-1.01)	0.23
Genus Granulicatella	6	IVW	1.02 (0.98-1.06)	0.29
Genus Leptotrichia	3	IVW	0.98 (0.94-1.01)	0.19
Genus Alloprevotella	2	IVW	0.97 (0.93-1.02)	0.26
unknown Veillonella species (ASV0001)	4	IVW	0.98 (0.93-1.03)	0.43
unknown Neisseria species (ASV0004)	4	IVW	1.01 (0.95-1.06)	0.81
Species parvula	2	IVW	0.99 (0.95-1.04)	0.78
Species dispar	3	IVW	0.99 (0.95-1.03)	0.67
Species micronuciformis	6	IVW	1 (0.97-1.03)	0.91
Species pallens	3	IVW	0.98 (0.91-1.04)	0.48
unknown Rothia	6	IVW	1	0.69

species (ASV0016)				(0.97-1.02)	
unknown Schaalia	6	IVW	0.99		0.54
species (ASV0017)				(0.96-1.02)	
Species rogosae	4	IVW	1		0.84
				(0.96-1.05)	
unknown Gemella	6	IVW	0.97		0.09
				(0.94-1)	
Species parainfluenzae	3	IVW	1.03		0.45
CKDi25				(0.96-1.1)	
Species histicola	7	IVW	0.99		0.74
				(0.95-1.03)	
unknown Streptococcus	7	IVW	0.99		0.65
species (ASV0006)				(0.95-1.03)	
unknown					
Porphyromonas species	4	IVW	1.03		0.21
(ASV0008)				(0.98-1.09)	
unknown Streptococcus	5	IVW	1.04		0.32
species (ASV0009)				(0.96-1.12)	
Species periodonticum	7	IVW	0.98		0.37
				(0.95-1.02)	
unknown Rothia	2	IVW	1		0.96
species (ASV0012)				(0.94-1.07)	
Species mucilaginoso	11	IVW	1		0.78
				(0.97-1.03)	
Phylum Firmicutes	8	IVW	0.99		0.74
				(0.96-1.03)	
Phylum Proteobacteria	7	IVW	0.99		0.7
				(0.96-1.03)	
Class Bacilli	4	IVW	1.01		0.75

			(0.94-1.09)	
Order Fusobacteriales	7	IVW	0.96 (0.92-1.01)	0.09
Order Actinomycetales	9	IVW	1.02 (0.98-1.05)	0.36
Order Clostridiales	9	IVW	0.99 (0.96-1.03)	0.71
Family Veillonellaceae	4	IVW	0.98 (0.93-1.04)	0.59
Family Pasteurellaceae	9	IVW	1.03 (0.99-1.06)	0.17
Family Prevotellaceae	8	IVW	0.98 (0.94-1.01)	0.19
Family Actinomycetaceae	5	IVW	1 (0.95-1.05)	0.98
Family Lachnospiraceae [XIV]	9	IVW	1 (0.96-1.03)	0.86
Genus Veillonella	6	IVW	0.99 (0.94-1.03)	0.57
Genus Haemophilus	7	IVW	1 (0.97-1.05)	0.82
Genus Streptococcus	2	IVW	1.06 (0.97-1.16)	0.18
Genus Neisseria	5	IVW	0.97 (0.93-1.02)	0.27
Genus Prevotella	11	IVW	0.98 (0.95-1.01)	0.12
Genus Porphyromonas	4	IVW	1.02 (0.97-1.08)	0.41

Genus Fusobacterium	11	IVW	1 (0.97-1.03)	0.88
Genus Rothia	6	IVW	0.99 (0.95-1.03)	0.6
Genus Schaalia	12	IVW	0.99 (0.96-1.02)	0.42
Genus Granulicatella	6	IVW	1 (0.95-1.04)	0.86
Genus Leptotrichia	3	IVW	0.98 (0.93-1.04)	0.52
Genus Alloprevotella	2	IVW	0.97 (0.9-1.05)	0.45
unknown Veillonella species (ASV0001)	4	IVW	0.95 (0.9-1)	0.06
unknown Neisseria species (ASV0004)	4	IVW	1.02 (0.97-1.07)	0.52
Species parvula	2	IVW	1.02 (0.94-1.12)	0.6
Species dispar	4	IVW	1.02 (0.97-1.07)	0.5
Species pallens	3	IVW	1.06 (0.99-1.13)	0.09
unknown Rothia species (ASV0016)	6	IVW	1.01 (0.98-1.05)	0.52
unknown Schaalia species (ASV0017)	7	IVW	0.99 (0.95-1.03)	0.59
Species rogosae	4	IVW	1.04 (0.98-1.1)	0.22
unknown Gemella	6	IVW	1	0.98

				(0.96-1.04)	
Species parainfluenzae	Dialysis	3	IVW	1.24 (0.96-1.61)	0.1
Species histicola		7	IVW	0.97 (0.81-1.14)	0.69
unknown					
Porphyromonas species (ASV0008)		4	IVW	1.1 (0.87-1.39)	0.41
unknown Streptococcus species (ASV0009)		5	IVW	1.14 (0.85-1.51)	0.39
Species periodonticum		7	IVW	1.07 (0.89-1.29)	0.45
unknown Rothia species (ASV0012)		2	IVW	0.9 (0.63-1.29)	0.56
Species mucilaginoso		11	IVW	0.96 (0.86-1.07)	0.46
Phylum Firmicutes		8	IVW	1.06 (0.89-1.26)	0.52
Phylum Proteobacteria		7	IVW	0.95 (0.8-1.14)	0.59
Class Bacilli		4	IVW	0.94 (0.75-1.19)	0.61
Order Bacteroidales		13	IVW	0.99 (0.88-1.12)	0.86
Order Fusobacteriales		7	IVW	1.02 (0.86-1.2)	0.85
Order Actinomycetales		9	IVW	1.02 (0.86-1.2)	0.85
Order Clostridiales		9	IVW	1.01	0.86

			(0.88-1.17)	
Family Veillonellaceae	4	IVW	0.88 (0.71-1.1)	0.25
Family Pasteurellaceae	9	IVW	0.96 (0.78-1.17)	0.67
Family Prevotellaceae	8	IVW	1.09 (0.93-1.27)	0.27
Family Actinomycetaceae	5	IVW	0.89 (0.72-1.09)	0.25
Family Lachnospiraceae_[XIV]	9	IVW	1.01 (0.87-1.17)	0.94
Genus Veillonella	6	IVW	0.95 (0.79-1.14)	0.57
Genus Haemophilus	7	IVW	0.97 (0.76-1.23)	0.79
Genus Streptococcus	2	IVW	0.95 (0.68-1.34)	0.79
Genus Neisseria	5	IVW	0.81 (0.66-1)	0.05
Genus Prevotella	11	IVW	1.07 (0.94-1.23)	0.31
Genus Porphyromonas	4	IVW	1.14 (0.9-1.44)	0.29
Genus Fusobacterium	11	IVW	0.91 (0.76-1.09)	0.32
Genus Rothia	6	IVW	0.98 (0.78-1.22)	0.83
Genus Schaalia	12	IVW	1.07 (0.94-1.22)	0.29

Genus Granulicatella	6	IVW	1.09 (0.87-1.36)	0.45
Genus Leptotrichia	3	IVW	0.82 (0.64-1.04)	0.1
Genus Alloprevotella	2	IVW	1.01 (0.74-1.38)	0.96
unknown Veillonella species (ASV0001)	5	IVW	0.95 (0.78-1.17)	0.64
unknown Neisseria species (ASV0004)	4	IVW	1.1 (0.78-1.57)	0.58
Species parvula	2	IVW	0.98 (0.72-1.34)	0.92
Species dispar	4	IVW	0.91 (0.73-1.14)	0.42
Species micronuciformis	6	IVW	0.95 (0.79-1.15)	0.62
Species pallens	3	IVW	0.97 (0.75-1.24)	0.79
unknown Rothia species (ASV0016)	6	IVW	1 (0.83-1.21)	1
unknown Schaalia species (ASV0017)	7	IVW	1.08 (0.91-1.27)	0.39
Species rogosae	4	IVW	0.85 (0.68-1.06)	0.14
unknown Gemella	6	IVW	1.33 (1.1-1.6)	0

Inverse variance weighted (IVW); Weighted median(WM); Chronic kidney disease (CKD); Estimated glomerular filtration rate (eGFR); Urinary albumin-to-creatinine ratio (UACR)

Supplementary Table SIII. Tests for horizontal pleiotropy and heterogeneity (negative results)

Exposure	Outcome	Heterogeneity		Pleiotropy	
		Q statistic (IVW)	P value	MR-Egger Intercept	P value
Species parainfluenzae	CKD	1.13	0.57	-0.019	0.73
Species histicola		9.75	0.14	-0.049	0.24
unknown Streptococcus species (ASV0006)		8.54	0.2	-0.003	0.93
unknown Porphyromonas species (ASV0008)		2	0.57	0.045	0.31
unknown Streptococcus species (ASV0009)		5.85	0.21	-0.023	0.47
Species periodonticum		3.57	0.73	0.004	0.87
unknown Rothia species (ASV0012)		1.74	0.19	NA	NA
Species mucilaginoso		18	0.05	0.002	0.94
Phylum Firmicutes		15.53	0.03	-0.02	0.52
Phylum Proteobacteria		2.76	0.84	0.012	0.62
Class Bacilli		3.81	0.28	0.043	0.27
Order Bacteroidales		12.04	0.44	-0.012	0.45
Order Fusobacteriales		0.64	1	0.005	0.79
Order Actinomycetales		15.08	0.06	-0.022	0.44
Order Clostridiales		9.03	0.34	0.008	0.68
Family Veillonellaceae		14.36	0	-0.003	0.96

Family Pasteurellaceae	7.54	0.48	-0.007	0.79
Family Prevotellaceae	17.36	0.02	-0.01	0.81
Family Actinomycetaceae	3.68	0.45	0.098	0.19
Family Lachnospiraceae_[XIV]	9.24	0.32	0	0.99
Genus Haemophilus	4.79	0.57	-0.008	0.75
Genus Streptococcus	0.01	0.93	NA	NA
Genus Neisseria	10.98	0.03	0.002	0.99
Genus Prevotella	20.11	0.03	0.001	0.96
Genus Porphyromonas	1.33	0.72	0.043	0.41
Genus Fusobacterium	6.18	0.8	0.009	0.61
Genus Rothia	12.19	0.03	-0.023	0.49
Genus Schaalia	18.72	0.07	0.015	0.41
Genus Granulicatella	9.49	0.09	-0.009	0.8
Genus Leptotrichia	0.68	0.71	-0.017	0.6
Genus Alloprevotella	1.91	0.17	NA	NA
unknown Veillonella species (ASV0001)	3.62	0.46	0.016	0.48
unknown Neisseria species (ASV0004)	7.32	0.06	-0.074	0.34
Species parvula	0.06	0.8	NA	NA
Species dispar	3.25	0.2	0.01	0.9

Species micronuciformis		5.24	0.39	-0.009	0.79
Species pallens		5.47	0.06	0.032	0.74
unknown Rothia species (ASV0016)		1.99	0.85	-0.006	0.78
unknown Schaalia species (ASV0017)		1.33	0.93	0.015	0.71
Species rogosae		5.36	0.15	0.045	0.3
unknown Gemella		4.66	0.46	0.004	0.84
Species parainfluenzae	UACR	0.2	0.9	-0.001	0.92
Species histicola		12.25	0.06	0.01	0.3
unknown Streptococcus species (ASV0006)		3	0.81	0.004	0.49
unknown Porphyromonas species (ASV0008)		10.35	0.02	-0.023	0.08
unknown Streptococcus species (ASV0009)		10.7	0.03	-0.013	0.06
Species periodonticum		5.87	0.44	-0.004	0.47
unknown Rothia species (ASV0012)		2.21	0.14	NA	NA
Species mucilaginoso		7.26	0.7	0.004	0.23
Phylum Firmicutes		8.37	0.3	-0.001	0.87
Phylum Proteobacteria		10.2	0.12	-0.003	0.65
Class Bacilli		1.83	0.61	0	0.99
Order Bacteroidales		22.53	0.03	0	0.95

Order Actinomycetales	9.63	0.29	-0.008	0.08
Order Clostridiales	25.21	0	0.008	0.15
Family Veillonellaceae	10.02	0.02	-0.002	0.8
Family Pasteurellaceae	1.93	0.98	0	0.99
Family Prevotellaceae	14.03	0.05	0.002	0.77
Family Actinomycetaceae	2.98	0.56	0.008	0.56
Family Lachnospiraceae_[XIV]	15.7	0.05	-0.004	0.45
Genus Veillonella	17.64	0	0	0.96
Genus Haemophilus	2.86	0.83	0.002	0.64
Genus Streptococcus	0.75	0.39	NA	NA
Genus Neisseria	7.5	0.11	0.016	0.39
Genus Prevotella	17.74	0.06	0.002	0.6
Genus Porphyromonas	7.11	0.07	-0.021	0.13
Genus Fusobacterium	10.44	0.4	0.003	0.49
Genus Rothia	4.87	0.43	0.003	0.54
Genus Schaalia	10.49	0.49	0	0.99
Genus Granulicatella	3.26	0.66	0.007	0.23
Genus Leptotrichia	1.6	0.45	0.006	0.43
Genus Alloprevotella	0.65	0.42	NA	NA

unknown Veillonella species (ASV0001)		2.2	0.7	0.002	0.7
unknown Neisseria species (ASV0004)		4.33	0.23	-0.011	0.43
Species parvula		0.09	0.77	NA	NA
Species dispar		6.08	0.05	0.013	0.51
Species micronuciformis		5.2	0.39	-0.005	0.52
Species pallens		1.86	0.39	0.001	0.95
unknown Schaalia species (ASV0017)		6.46	0.26	0.002	0.88
Species rogosae		4.47	0.22	-0.01	0.25
unknown Gemella		7.29	0.2	-0.001	0.84
Species parainfluenzae	Rapid3	1.32	0.52	0.047	0.46
Species histicola		4.81	0.57	0.059	0.12
unknown Streptococcus species (ASV0006)		7.47	0.19	0.014	0.74
unknown Porphyromonas species (ASV0008)		7.89	0.05	0.09	0.12
unknown Streptococcus species (ASV0009)		7.19	0.13	0.006	0.87
Species periodonticum		6.64	0.36	-0.019	0.51
unknown Rothia species (ASV0012)		0.06	0.81	NA	NA
Species mucilaginoso		7.05	0.72	0.012	0.41

Phylum Firmicutes	9.2	0.24	0.016	0.53
Phylum Proteobacteria	5.01	0.54	0.035	0.17
Class Bacilli	7.51	0.06	-0.049	0.38
Order Bacteroidales	16.11	0.19	-0.005	0.79
Order Actinomycetales	9.79	0.28	0.032	0.13
Order Clostridiales	14.3	0.07	0.024	0.28
Family Veillonellaceae	6.24	0.1	0.005	0.9
Family Pasteurellaceae	5.77	0.67	0.042	0.1
Family Prevotellaceae	20.28	0	0.034	0.46
Family Actinomycetaceae	5.18	0.27	0.126	0.13
Family Lachnospiraceae [XIV]	20.07	0.01	-0.017	0.58
Genus Veillonella	9.55	0.09	0.009	0.77
Genus Haemophilus	6.14	0.41	0.02	0.44
Genus Streptococcus	0.02	0.89	NA	NA
Genus Neisseria	2.44	0.66	0.024	0.71
Genus Prevotella	21.49	0.02	0.016	0.52
Genus Porphyromonas	10.9	0.01	0.035	0.74
Genus Fusobacterium	8.15	0.61	0.013	0.47
Genus Rothia	8.72	0.12	-0.009	0.75
Genus Schaalia	17.04	0.11	0.025	0.15

Genus Granulicatella		8.99	0.11	0.003	0.94
Genus Leptotrichia		0.07	0.97	0.006	0.84
Genus Alloprevotella		0	0.95	NA	NA
unknown Veillonella species (ASV0001)		5.68	0.13	-0.014	0.71
unknown Neisseria species (ASV0004)		8.86	0.03	0.108	0.14
Species parvula		0.18	0.67	NA	NA
Species dispar		0.6	0.74	0.001	0.98
Species micronuciformis		1.33	0.93	-0.024	0.46
Species pallens		6	0.05	0.016	0.87
unknown Schaalia species (ASV0017)		5.48	0.36	0.028	0.54
Species rogosae		5.17	0.16	-0.009	0.86
unknown Gemella		6.21	0.29	-0.021	0.35
Species parainfluenzae	CKDi25	2.42	0.3	0.079	0.42
Species histicola		5.71	0.46	0.037	0.45
unknown Streptococcus species (ASV0006)		3.08	0.8	-0.03	0.52
unknown Porphyromonas species (ASV0008)		1.35	0.72	0.047	0.45
unknown Streptococcus species (ASV0009)		9.61	0.05	0.038	0.59

Species periodonticum	6.2	0.4	-0.048	0.25
unknown Rothia species (ASV0012)	0.93	0.34	NA	NA
Species mucilaginosa	15.85	0.1	0.029	0.28
Phylum Firmicutes	2.53	0.92	-0.021	0.48
Phylum Proteobacteria	4.35	0.63	0.021	0.55
Class Bacilli	5.41	0.14	-0.027	0.74
Order Fusobacteriales	6.92	0.33	-0.005	0.89
Order Actinomycetales	6.94	0.54	0.016	0.57
Order Clostridiales	6.38	0.6	0.042	0.13
Family Veillonellaceae	1.5	0.68	-0.022	0.53
Family Pasteurellaceae	8.85	0.36	0.043	0.24
Family Prevotellaceae	7.06	0.42	-0.01	0.82
Family Actinomycetaceae	1.86	0.76	-0.056	0.59
Family Lachnospiraceae_[XIV]	6.65	0.58	0.055	0.1
Genus Veillonella	1.59	0.9	-0.02	0.52
Genus Haemophilus	6.48	0.37	0.047	0.22
Genus Streptococcus	1.02	0.31	NA	NA
Genus Neisseria	1.33	0.86	0.03	0.76
Genus Prevotella	9.05	0.53	0.009	0.71

Genus Porphyromonas		0.95	0.81	0.049	0.52
Genus Fusobacterium		9.97	0.44	-0.014	0.64
Genus Rothia		6.58	0.25	0.049	0.14
Genus Schaalia		12.99	0.29	0.035	0.11
Genus Granulicatella		6	0.31	0.027	0.54
Genus Leptotrichia		1.07	0.59	-0.01	0.83
Genus Alloprevotella		0.04	0.85	NA	NA
unknown Veillonella species (ASV0001)		0.38	0.94	-0.011	0.76
unknown Neisseria species (ASV0004)		2.8	0.42	0.099	0.26
Species parvula		1.82	0.18	NA	NA
Species dispar		1.32	0.72	-0.02	0.6
Species pallens		2.6	0.27	0.072	0.39
unknown Rothia species (ASV0016)		5.88	0.32	0.048	0.19
unknown Schaalia species (ASV0017)		1.89	0.93	-0.001	0.98
Species rogosae		5.24	0.16	0.089	0.16
unknown Gemella		0.71	0.98	-0.014	0.64
Species parainfluenzae	Dialysis	1.06	0.59	0.191	0.62
Species histicola		4.94	0.55	-0.156	0.47

unknown Porphyromonas species (ASV0008)	1.62	0.66	0.249	0.38
unknown Streptococcus species (ASV0009)	8.16	0.09	0.135	0.59
Species periodonticum	8.08	0.23	-0.035	0.86
unknown Rothia species (ASV0012)	1.61	0.21	NA	NA
Species mucilaginoso	7.51	0.68	0.032	0.73
Phylum Firmicutes	8.82	0.27	0.208	0.13
Phylum Proteobacteria	5.49	0.48	-0.167	0.33
Class Bacilli	0.75	0.86	-0.1	0.65
Order Bacteroidales	11.22	0.51	0.006	0.96
Order Fusobacteriales	5.58	0.47	0.204	0.18
Order Actinomycetales	10.54	0.23	-0.158	0.3
Order Clostridiales	5.91	0.66	0.018	0.86
Family Veillonellaceae	0.78	0.85	0.028	0.83
Family Pasteurellaceae	15.36	0.05	0.11	0.64
Family Prevotellaceae	3.78	0.8	-0.083	0.61
Family Actinomycetaceae	3.8	0.43	0.124	0.79
Family Lachnospiraceae [XIV]	3.52	0.9	-0.046	0.69
Genus Veillonella	2.8	0.73	0.027	0.82

Genus Haemophilus	12.9	0.04	0.368	0.12
Genus Streptococcus	0.43	0.51	NA	NA
Genus Neisseria	1.88	0.76	-0.438	0.32
Genus Prevotella	4.74	0.91	-0.028	0.78
Genus Porphyromonas	0.18	0.98	0.074	0.81
Genus Fusobacterium	17.69	0.06	-0.129	0.42
Genus Rothia	7.97	0.16	-0.006	0.97
Genus Schaalia	9.61	0.57	0.017	0.86
Genus Granulicatella	6.74	0.24	0.033	0.88
Genus Leptotrichia	0.25	0.88	0.076	0.71
Genus Alloprevotella	0.04	0.83	NA	NA
unknown Veillonella species (ASV0001)	2.34	0.67	-0.06	0.64
unknown Neisseria species (ASV0004)	6.96	0.07	0.586	0.24
Species parvula	0.04	0.83	NA	NA
Species dispar	1.39	0.71	0.08	0.64
Species micronuciformis	2.55	0.77	-0.184	0.43
Species pallens	1.74	0.42	-0.174	0.6
unknown Rothia species (ASV0016)	7.67	0.18	-0.162	0.45

unknown Schaalia species (ASV0017)	5.06	0.54	-0.255	0.25
Species rogosae	0.5	0.92	-0.094	0.67
unknown Gemella	0.85	0.97	-0.042	0.74

Chronic kidney disease (CKD); Estimated glomerular filtration rate (eGFR); Urinary albumin-to-creatinine ratio (UACR)

Supplementary Table SIV. The MR-Presso results of relationship between oral microbiome and CKD

	global_p	outlier_indices	outlier_snp	distortion_p
Species histicola	0.47	NA	NA	NA
unknown Streptococcus species (ASV0006)	0.778	NA	NA	NA
unknown Porphyromonas species (ASV0008)	0.729	NA	NA	NA
unknown Streptococcus species (ASV0009)	0.091	NA	NA	NA
Species periodonticum	0.421	NA	NA	NA
Species mucilaginosa	0.086	NA	NA	NA
Phylum Firmicutes	0.923	NA	NA	NA
Phylum Proteobacteria	0.65	NA	NA	NA
Class Bacilli	0.215	NA	NA	NA
Order Bacteroidales	0.658	NA	NA	NA
Order Fusobacteriales	0.36	NA	NA	NA
Order Actinomycetales	0.557	NA	NA	NA
Order Clostridiales	0.623	NA	NA	NA
Family Veillonellaceae	0.68	NA	NA	NA
Family Pasteurellaceae	0.351	NA	NA	NA
Family Prevotellaceae	0.437	NA	NA	NA
Family Actinomycetaceae	0.753	NA	NA	NA
Family Lachnospiraceae [XIV]	0.622	NA	NA	NA
Genus Veillonella	0.902	NA	NA	NA
Genus Haemophilus	0.41	NA	NA	NA
Genus Neisseria	0.87	NA	NA	NA
Genus Prevotella	0.567	NA	NA	NA
Genus Porphyromonas	0.822	NA	NA	NA
Genus Fusobacterium	0.422	NA	NA	NA
Genus Rothia	0.32	NA	NA	NA
Genus Schaalia	0.312	NA	NA	NA
Genus Granulicatella	0.356	NA	NA	NA
unknown Veillonella species (ASV0001)	0.941	NA	NA	NA
unknown Neisseria species (ASV0004)	0.485	NA	NA	NA
Species	0.954	NA	NA	NA

micronuciformis				
unknown Rothia species (ASV0016)	0.398	NA	NA	NA
unknown Schaalia species (ASV0017)	0.943	NA	NA	NA
Species rogosae	0.244	NA	NA	NA
unknown Gemella	0.981	NA	NA	NA