Supplemental data

Journal: *Drug Metabolism and Disposition*

Title: Identification of *CYP2W1* genetic polymorphisms in the three main Chinese ethnicities: Han, Tibetan, and Uighur

Authors: Yanwei Li, Xing Kang, Ge Yang, Penggao Dai, Chao Chen, and Huijuan Wang

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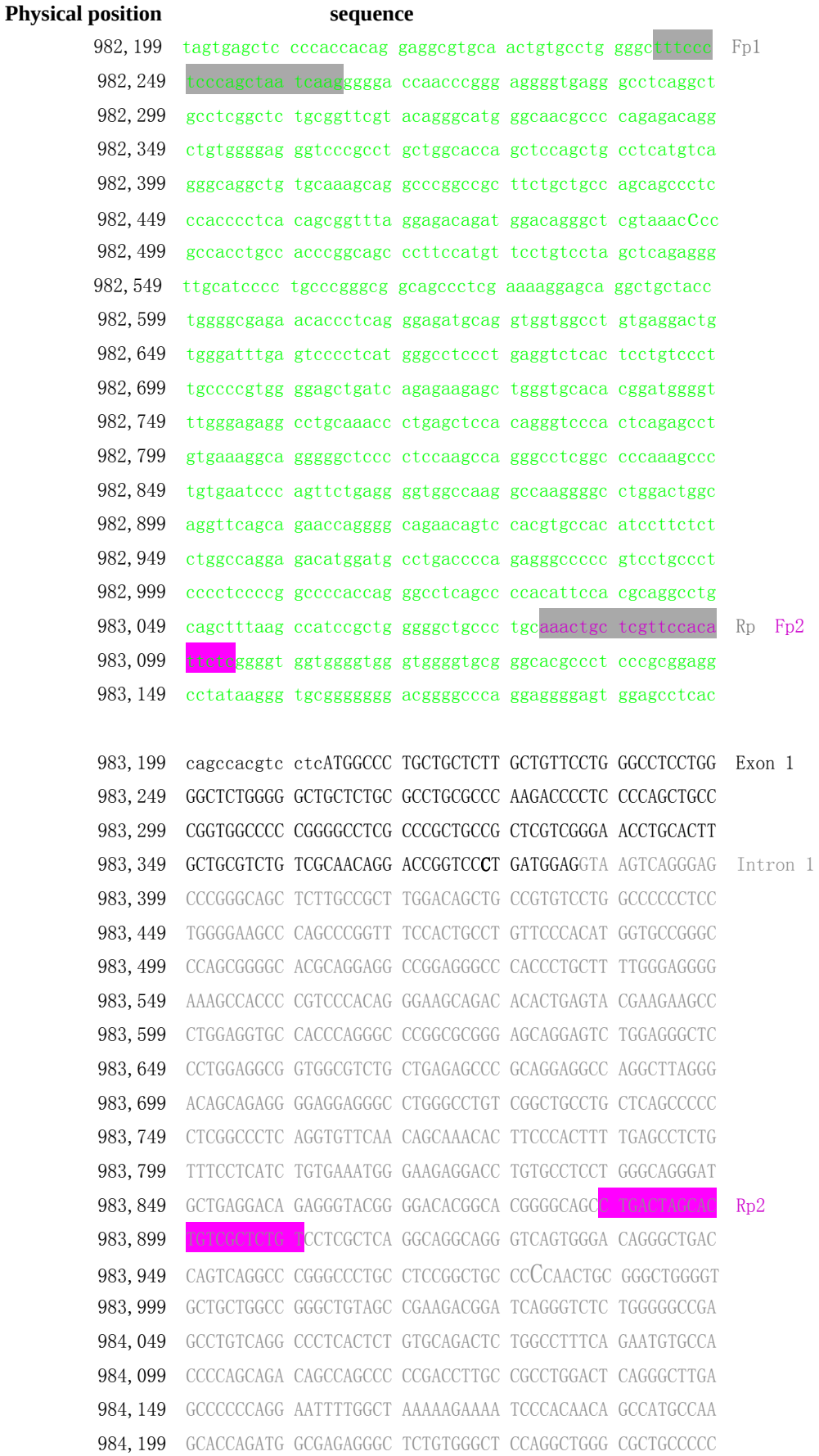

DMD # 69153

984, 249	TCCACCCTGC ACCACTGGCT TTATGCCATC TAGGCGTGCC CCCTCCACCT	Fp3
984, 299	GCCCCCATTT TCCCTCTGTC CCCACCCCTA CCCAGCACAG GCCCGGCCTG	
984, 349	AGGGGACCTA AGGGGGGTCT TGTGGGTGAG GGCTGCCCGG GTGACCCCCG	
984, 399	CCATCCCTGC CAGCTCTCAG AACGCTACGG GCCGGTGTTC ACCGTGCACC	Exon 2
984, 449	TGGGGCGCCA GAAGACGGTG GTGCTGACGG GGTTCGAGGC GGTCAAAGAG	
984, 499	GCGCTGGCGG GCCCCGGGCA GGAGCTGGCC GACCGGCCTC CCATCGCCAT	
984, 549	CTTCCAGCTC ATCCAGCGAG GTGGAGGTCG GTGTGTGGCC GGCGCTACGG	Intron 2
984, 599	GGCCTACTGG GTGTGGGGGC ACCTGGACCC CAGGAGGGGT GGGGGCTCCA	
984, 649	GCAGCGGGAG AGGCTCCCAG GGTGGCCTGG GGAAGAGCAG GCAGGAGCTG	
984, 699	GGCCTCCGGG CTGGTGCTGA GAAGGGCCAG GTGTCCACAC AGCAGGTCAG	
984, 749	GTGCTCAGAA CCAGCAAGCG GGGTTCTTTT CATCCCAAGT CAAGAGGGGC	Fp4
984, 799	CAGGGCCAGC CCAGGGGGAC GGGAGTGGGG ATGGGGGTGA GGGCCCAGCC	
984, 849	AGTCTCGCTG CCCTGTCAGC CTGCTCACTT CCTGCCCACT TGCCTGGCGG	
984, 899	GGCTGGCTGG GGTGGGAACC TGGGCTCACC ACGCACTGTA TCTGCCTACA	Rp3
984, 949	TGCATCTTCT TCTCATCTGG GGCGCGCTGG AGGGCTGCCC GCCAGTTCAC	Exon 3
984, 999	GGTGCGTGCC CTGCACAGCC TGGGCGTGGG CCGGGAGCCG GTGGCTGACA	
985, 049	AGATTCTGCA GGAGCTGAAA TGCCTCTCTG GGCAGCTGGA TGGCTACAGA	
985, 099	GGTGAGCAGG GGGCCGGGGA CGCCCCTCCC CGGGCCTGGA CGTGCCTGAG	Intron 3
985, 149	GCCCGTCTCC CTCGCAGGCC GGCCCTTCCC GCTGGCCCTA CTGGGCTGGG	Exon 4
985, 199	CTCCCTCCAA TATCACCTTC GCGCTCCTCT TCGGCCGCCG ATTTGACTAC	
985, 249	CGGGACCCCG TGTTTGTGTC CCTGCTGGGT CTCATCGATG AGGTCATGGT	
985, 299	CCTCTTGGGG TCCCCTGGCC TGCAGGTGAG GAGCTGCCTC CCATCCTTGG	Intron 4
985, 349	GGTGGGGTGG AGCCTGGAGT GATGGGCGTG CAGCAGGAGG ACGGGGGCCC	
985, 399	CAGTGCTGTC CCCTCTCAGC TTCTCGGCCC TCCCACCTTG CAAAAGGAAT	Rp4
985, 449	CAGATGCAAG GGCCTGAATC AGGACCCATC CGACGTTAGC TGGTCATGTG	
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985, 699	AAACCACAAA AGTTCACCCC TCTGATGTTT GGAACTCGTG TATTTCATTT	
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985, 849	ACCCAGAGAC CACGGGTCCT AGTCCTCCTG GCTTCCCAGA GGCAGGGCCG	
985, 899	TGATGGGAGT GAGTGAGCAG CGGTGGGTTC ACAAGCGAGA GCAGGGGGCA	
985, 949	CAGCTTCCAC CCGTCCTAGC CAGGGTGAGA CCACCCTGCC TGCTGGTGGA	
985, 999	GCCAGGCAGG CCCAGAGCCC ACCTGGAAGA TGGAGGCTGC ACGGCACTGC	
986, 049	GTGGTCCGGG GCAGCCCCAG GGCAGCAGAG CATTCCCTGG CCTTCCCTGC	
986, 099	TGGTGCCAGC TCCTTACCAC AGAGACGCCG CGTGGAACTC ACTACTGGCG	Fp5
986, 149	ATCGCGGACG CCCCAGGAAG GCGAGTGGCA CGAGGTGTGG CGGGGCTGCC	
986, 199	ACAGGCAGTC ACGGAGCACC CGCTGGTGCC AGGCTCACCC CTCAGATACA	
986, 249	GCCTCGTGGG CTGGCTCAGT GGCGGCCCTG ACTCTCCAAG GTCTGAGGTC	
986, 299	TGCTCTGTCT TCCATTCCAT GACTCACAGG AGGTTCAAGG TTACTTCCAC	
986, 349	TGTGGCAGCT GCCTCCCTCC TCCCTCTCCA GGATGGAAGG AGGTCCTGCT	
986, 399	GTGCAAACCT GCCTGGCTGT CCCCTTCCGG GACACGGACA GGGGGTTTCC	
986, 449	TGGCAGTTCC TGGTCCTCCC TTGAGGGCTA AGGGTCCCCC CGTTCTGTGG	

986, 499 CCGCCTCCAG CACATCCACC CAGAGTCCCT GGGCGTGAAC ACAGCCGCTG
986, 549 GGGACGATCA CCGCCTGCCC AGCGTGCAGC CCTGGGGCTG CGTCCTTATC
986, 599 TCCGCTCCTC CTGCCTCCTG CCCAGCTGTT CAACGTCTAC CCATGGCTCG Exon 5
986, 649 GGGCCCTGCT CCAGCTGCAC CGGCCCGTCC TGCGCAAGAT CGAGGAGGTC
986, 699 CGTGCCATTC TGAGGACCCT CCTGGAGGCG CGGAGGCCCC ACGTGTGCCC
986, 749 GGGGGACCCC GTGTGCAGCT ATGTGGACGC CCTGATCCAG CAGGGACAGG Intron 5
986, 799 TGTGTCGGGA CCCAAGACCT CCTTGAAGGC CTGTAGGGGT CCTGAGGGAC Fp6
986, 849 ACCCCAGGGG AGCACGGCTG GGGAGGGGTC CATACCGGTC CTGCACCAAG
986, 899 CTCCCTACCT CCTGGCTGGG GGCCTGTCAG AGCCTCAGTC TCCTTGTCTG Rp5
986, 949 TGAAACGGGG CATCCATAGT GCCTGCCTCG GGGACGCTGA GGGATGGCTG
986, 999 AGCCCAGATC ACCGGGGCAT CCATAGTGGA GCCCAGGGCT GGGCTGGGTC
987, 049 TGTGGGGTGG GGGACAGACC CCAGATCATC CCACGAGCCC TGCCCCACGC
987, 099 CTCTGCAGGG GGATGACCCC GAGGGCCTGT TTGCTGAGGC CAACGCGGTG Exon 6
987, 149 GCCTGCACCC TGGACATGGT CATGGCCGGG ACGGAGACGA CCTCGGCCAC
987, 199 GCTGCAGTGG GCCGCACTTC TGATGGGCCG GCACCCGGAC GTGCAGGGTG Intron 6
987, 249 AGACCCCGGC GCCTGGCGAG ACGGCTCCTT CTGCCCCCGG GGGACCCCCA
987, 299 GGGACGAGGG ATGGCGCTGC CACCCAAGCG GCCCACCCTT TGCCCCAGGC Exon 7
987, 349 CGGGTGCAGG AGGAGCTAGA CCGCGTGCTG GGCCCTGGGC GGACTCCCCG
987, 399 GCTGGAGGAC CAGCAGGCTC TGCCCTACAC AAGCGCCGTG CTCCACGAGG
987, 449 TGCAGCGGTT CATCACGCTC CTGCCGCACG TGCCCCGCTG CACCGCGGCC
987, 499 GACACACAGC TGGGCGGCTT CCTGCTCCCC AAGGTGGGGC TGGGCCTCCC Intron 7
987, 549 TTGCCCCTTC CATCTCCTCT GGGGTAGGCC TCGGCGGGGG TCCAGGGGCA
987, 599 CTGGGACGGC TGAGCGTCTG GTGGGTGCCT GATGGCCCAG CGCTCCCCGA
987, 649 CCGGAGGCAA TAAAGGGCGT CCAGCCAGGA GCAGGAGGGA GGCAGCCCTC
987, 699 TCACCCCACA GCCCAGCACT TGGCCTGGCC AGCAGACCTG GCGCCTCCCT
987, 749 GCATGTCCTG GGGTCCCCTC CGTGTGTCCT GTGGGCATCC CTGTCCATGT Rp6
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987, 949 GTGTCCTGGG GGTCCCCTCT GTGTGTCCTG GGGGGGTCCC CTCTGTGTGT
987, 999 CCTGGGGGGT CCCCTCTGTG TGTCCTGGGG GTCCCCTCTG TGTGTCCTGG
988, 049 GGCGTCCCTC TCCATGCATC CTGGGTGTCC TCTCTATCCT TGGGGCCCCT Fp7
988, 099 GGCTGTGTGC CCTGGGGTCA TGTGGCCTCC CTGGGTTTGG GTGCCTCACC
988, 149 TGCAAGGTGG GCTAACACCA GGTGTGGTGG GTGTGGCAGG AGCTACATCC
988, 199 TGGAATGAAA CTTCCCAACC CAGGCCCCAT CCCATCTTCC CCGGGGCCCC
988, 249 TCTCTCTGTG CCCCGGCTGC CCCCACAGGG CACGCCCGTG ATTCCCCTGC Exon 8
988, 299 TGACCTCGGT GCTCCTGGAT GAGACACAGT GGCAGACCCC AGGCCAGTTC
988, 349 AACCCCGGCC ATTTCCTGGA CGCGAATGGG CACTTTGTGA AGCGGGAGGC
988, 399 CTTCCTGCCT TTCTCTGCAG GTCAGCAGCC CTCGGGGCCG GGGTGGGGCG Intron 8
988, 449 GCACCTCCAG GGCTCCAGGG GTGGGACGGC CCCAGCTCCG CCTGCCGCCT
988, 499 CTGCACCCAC CTCCTGATCT CAGGTTCTGA AGGCGGCTGT GGTGGCTGCT Rp7, Fp8
988, 549 CCTGTGCTCC CCTGGGGAGG TCCCCACCCC TCCCCTCCAG GAGCAGGCCT
988, 599 GGTGCAGCCC ACTCTGTGCC TGGACATCCC CCGCAGGCCG CCGCGTCTGT Exon 9
988, 649 GTTGGGGAGC GCCTGGCCAG GACCGAGCTC TTCCTGCTGT TTGCCGGCCT
988, 699 CCTGCAGAGG TACCGCCTGC TGCCCCCGCC TGGCGTCAGT CCGGCCTCCC

Supplemental Figure 1. The location of amplification primers in *CYP2W1* gene sequence (reference sequence: NC_000007.14), which was highlighted in different colors.

Supplemental Table 1 Primers for CYP2W1 amplification and sequencing.

Region Amplified	Primer name	Sequence(5′ -3′)	Product size(bp)
promoter	Fp1	CTTTCCCTCCCAGCTAATCAAG	862
	Rp1	GAGAATGTGGAACGAGCAGTTT	
Exon1	Fp2	AAACTGCTCGTTCCACATTCTC	828
	Rp2	GCGACAGTGCTAGTCAGGCTG	
Exon2	Fp3	ACCACTGGCTTTATGGCATCTA	698
	Rp3	AAGATGCCTGTAGGCAGATACAGT	
Exon3&4	Fp4	GTTCTTTTCATCCCAAGTCAAGAG	684
	Rp4	CATCTGATTCCTTTTGCAAGGT	
Exon5	Fp5	CAGCTCCTTACCACAGAGACG	842
	Rp5	GACAAGGAGACTGAGGCTCTGA	
Exon6&7	Fp6	AGACCTCCTTGAAGGCCTGTAG	864
	Rp6	CTGGCTGGACGCCCTTTATT	
Exon8	Fp7	CATCCTGGGTGTCCTCTCTATC	462
	Rp7	AGAACCTGAGATCAGGAGGTG	
Exon9	Fp8	CTCCTGATCTCAGGTTCTGAAGG	492
	Rp8	CAGGGGTAGTCCTGGGTGTA	
3'UTR	Fp9	CTTCCGGTTACACCCAGGACTAC	830
	Rp9	TCGACATTTCCTTCTGTTTGTTT	

Fp, forward primer; R, reverse primer

Supplemental Table 2 Frequency of identified CYP2W1 nsSNPs in different populations.

CYP2W1 allele	A181T(*2)	G376S	V432I(*4)	P488L(*6)
Han Chinese[a]	0.02	0	0.05	0.25
Tibetan[a]	0.01	0	0.02	0.33
Uighur[a]	0.07	0.01	0.02	0.14
Han Chinese[b]	0.029	0	0.043	0.28
Uighur[b]	0.052	0	0.009	0.173
CHB[c]	0.034	0	0.0437	0.2621
CHS[c]	0.0286	0	0.0476	0.2667
JPT[c]	0.0144	0.0045	0.0288	0.3894
Caucasian (CEU) [c]	0.045	0	0	0.1667
African(YRI) [c]	0.0833	0	0	0.0648
African-American(ASW) [c]	0.0656	0	0	0.1393

[a], data are from the present study; [b], data are cited from Qi et al., 2015; [c],data are collected from 1000 genomes (http://browser.1000genomes.org/index.html)

CHB, Han Chinese in Beijing,n=206; CHS, Southern Han Chinese, n=216; JPT, Japanese in Tokyo, Japan,n=208; CEU, Utah residents with Northern and Western European,n=198; YRI, Yoruba in Ibadan, Nigera,n=218; ASW, Americans of African ancestry in SW ,USA, n=132.

Supplemental Table 3 Genotype distribution and comparison of identified variants in CYP2W1 in three populations.

SNP ID	Allele A	Allele B	Han			Tibetan			Uighur			H-Wpval			Fisher's Exact test, *P*		
			AA count	AB count	BB count	AA count	AB count	BB count	AA count	AB count	BB count	Han	Tibetan	Uighur	Han vs Tibetan	Tibetan vs Uighur	Han vs Uighur
v01	C	A	50	0	0	50	0	0	49	1	0	1	1	1	1	1	1
v02	G	A	50	0	0	50	0	0	49	1	0	1	1	1	1	1	1
v03	T	C	4	27	19	7	34	9	15	23	11	0.346	0.026	0.865	0.078	0.074	**0.012**
v04	G	A	47	3	0	41	8	1	34	14	1	1	0.785	1	0.121	0.243	**0.002**
v05	G	A	17	25	8	30	19	1	22	23	4	1	0.622	0.858	**0.007**	0.184	0.371
v06	A	G	48	2	0	47	3	0	50	0	0	1	1	1	1	0.242	0.495
v07	T	C	48	2	0	47	3	0	42	6	1	1	1	0.533	1	0.235	0.107
v08	G	T	13	29	8	29	16	1	23	23	4	0.385	0.916	0.909	**0.000**	0.177	0.09
v09	Ins	Del	17	25	8	29	16	2	23	23	4	1	1.000	0.909	**0.013**	0.33	0.327
v10	C	T	17	25	8	32	17	1	21	25	4	1	0.885	0.599	**0.003**	0.065	0.39
v11	G	A	48	2	0	48	1	0	44	5	1	1	1	0.403	1	0.157	0.269
v12	G	A	48	2	0	46	4	0	50	0	0	1	1	1	0.678	0.117	0.495
v13	A	G	8	25	17	1	19	30	3	21	26	1	0.622	0.996	**0.007**	0.572	0.116
v14	G	A	48	2	0	50	0	0	50	0	0	1	1	1	0.495	1	0.495
v15	C	G	50	0	0	48	2	0	50	0	0	1	1	1	0.495	0.495	1
v16	C	T	2	23	24	2	26	22	4	18	28	0.426	0.192	0.849	0.879	0.269	0.44
v17	T	C	48	2	0	47	3	0	50	0	0	1	1	1	1	0.242	0.495
v18	G	A	48	2	0	47	3	0	48	2	0	1	1	1	1	1	1
v19	C	T	50	0	0	50	0	0	49	1	0	1	1	1	1	1	1
v20	G	A	50	0	0	50	0	0	49	1	0	1	1	1	1	1	1
v21	C	T	49	1	0	50	0	0	50	0	0	1	1	1	1	1	1
v22	C	T	50	0	0	49	1	0	50	0	0	1	1	1	1	1	1
v23	G	A	45	5	0	48	2	0	48	2	0	1	1	1	0.436	1	0.436
v24	C	T	28	19	3	21	25	4	36	14	0	1	0.599	0.696	0.365	**0.003**	0.092
v25	G	A	49	0	0	50	0	0	49	1	0	1	1	1	1	1	1
v26	A	C	44	5	0	40	9	1	32	17	1	1	0.920	0.885	0.323	0.14	**0.005**

H-Wpval, Hardy–Weinberg equilibrium p-value