

**Table S1.** Primers of human *AVPR2* and *AQP2* used for Sanger sequencing.

Primer	Sequence	Size (bp)
hAQP2-1F	AAAGAGAGCGATAGAGTGCG	475
hAQP2-1R	CCTTGTGGATGGCAAAGTTG	
hAQP2-2F	GAAGAAGGGATCAGTCGTTG	475
hAQP2-2R	TGGGGTATCTAGGAGTCAAAC	
hAQP2-3F	TCAAGAGGAACAGACACCC	497
hAQP2-3R	AAGCTGTTGTCCATCCTCATTC	
hAQP2-4F	TAACCCCGCACTGACAAGG	522
hAQP2-4R	ACGTCCAGGAAGCAGCTAC	
hAVPR2-1F	TGACCATCCCTCTCAATCTTC	
hAVPR2-1R	CTCCAGGAAAGCCATGTTATG	474
hAVPR2-2.1F	AACATGGCTTTCCTGGAGTCC	
hAVPR2-2.1R	AGGCATACATGCCACCATC	483
hAVPR2-2.2F	CCCATACACGTCTTCATTGGC	
hAVPR2-2.2R	GCACCAGACTGGCATGAATC	496
hAVPR2-2.3F	ACCTATGTCACCTGGATTGCC	
hAVPR2-2.3R	ACACGCTGCTGCTGAAAGATGC	494
hAVPR2-3F	ACCCAACCTAGATCCTCCAC	
hAVPR2-3R	CTGAAGCTCTCCTCATACAGC	436

**Table S2.** All simulation systems parameters.

Simulation System	Simulation Time ( $\mu$ s)	Total Number of Atoms	Number of Sodium Ions	Number of Chloride Ions	Number of Waters	Number of Lipids
AVPR2-WT	1.5 $\times$ 2	79588	92	101	21294	240
AVPR2-D136A	1.5 $\times$ 2	78578	92	102	20958	240
AVPR2- $\Delta$ V279	1.5 $\times$ 2	78266	92	101	20856	240