Supplemental Table 1. Biochemical values from plasma and urine samples of sham-operated controls and 4 h BUO rats.

Parameters	Sham (n=6) Mean ± SE	4 h BUO (n=6) Mean ± SE	*P* value
Urea (mmol/L)	8.1 ± 0.2	14.4 ± 0.4	*P*< 0.01
Creatinine (µmol/L)	15.5 ± 1.2	68.3 ± 3.5	*P*< 0.01
Na (mmol/L)	139.3 ± 0.7	137.1 ± 0.8	*P* = 0.07
K (mmol/L)	5.0 ± 0.2	6.2 ± 0.2	*P*< 0.01
Urine osmolality (mOsm/kg.H_2O)	1662.7 ± 33.7	552.7 ± 14.1	*P*< 0.001
Urine volume (ml/kg/h)	1.37 ± 0.1	N/A	

Supplemental Table 2. Analysis of percent reduction of AQP2 and pS256-AQP2 band intensity from BUO rats compared to controls

AQP2 band intensity		BUO Total AQP2 band intensity/ Average of control band intensity
BUO	Control	
4.74	7.25	0.38
7.58	9.54	0.61
9.85	14.60	0.79
5.99	12.63	0.48
4.66	12.45	0.37
8.52	15.85	0.68
9.06	14.88	0.73
Average	12.46	0.58
Total AQP2 reduction (%)		42.2

pS256-AQP2 band intensity		BUO pS256-AQP2 band intensity/ Average of control band intensity
BUO	Control	
6.25	16.81	0.50

4.71	14.88	0.37
4.19	14.17	0.33
3.90	11.89	0.31
1.95	10.16	0.16
4.24	8.01	0.34
4.85	11.96	0.39
Average	12.56	0.34
pS256 AQP2 reduction (%)		65.8

	BUO pS256/Total	Log_2(pS256/total)	
	0.86	-0.22	0
	0.65	-0.62	0
	0.58	-0.79	0
	0.54	-0.89	0
	0.27	-1.89	0
	0.58	-0.78	0
	0.67	-0.58	0
Average	0.59		
SD	0.18		
T-test	0.001		

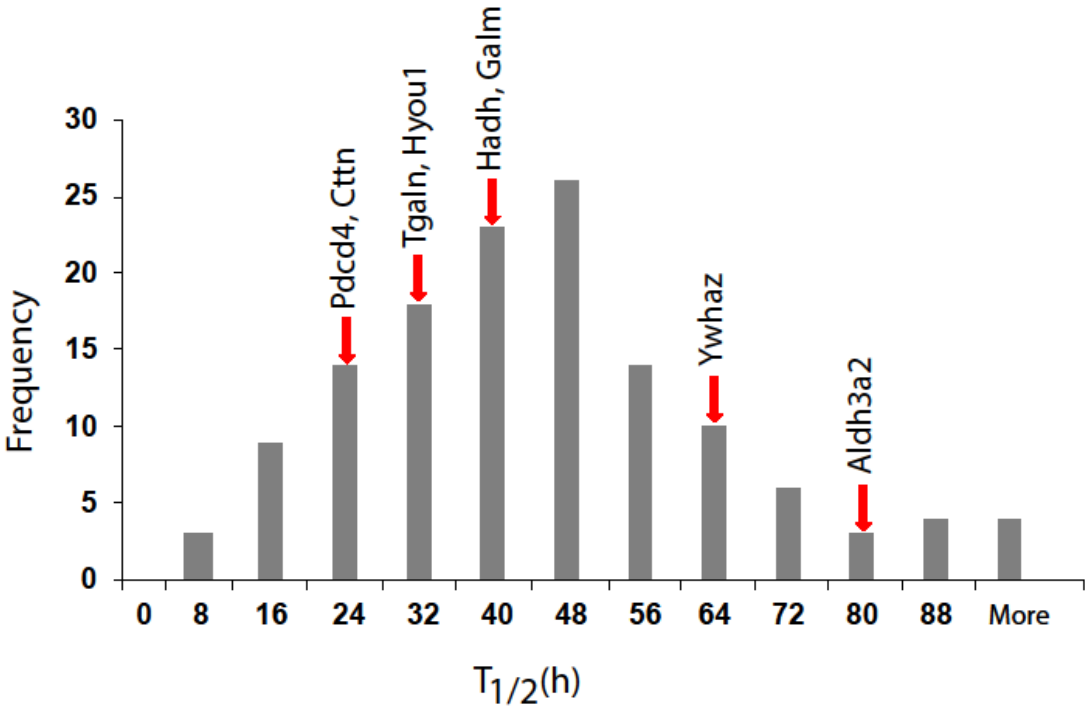
BUO-induced reduction of total AQP2 and pS256-AQP2 by 42.2% and 65.8%, respectively ($P < 0.001$).

Supplemental Table 3. Urine osmolality of sham-operated controls and BUO rats.

Duration of experiments	Sham (n=7) Urine osmolality (mOsm/kg. H_2O) (Mean ± SE)	BUO (n=7) Urine osmolality (mOsm/kg. H_2O) (Mean ± SE)	*P* value
10-hour	1615.4 ± 39.5	382.3 ± 6.6	$P < 0.001$
24-hour	1592.7 ± 32.8	292.1 ± 5.8	$P < 0.001$

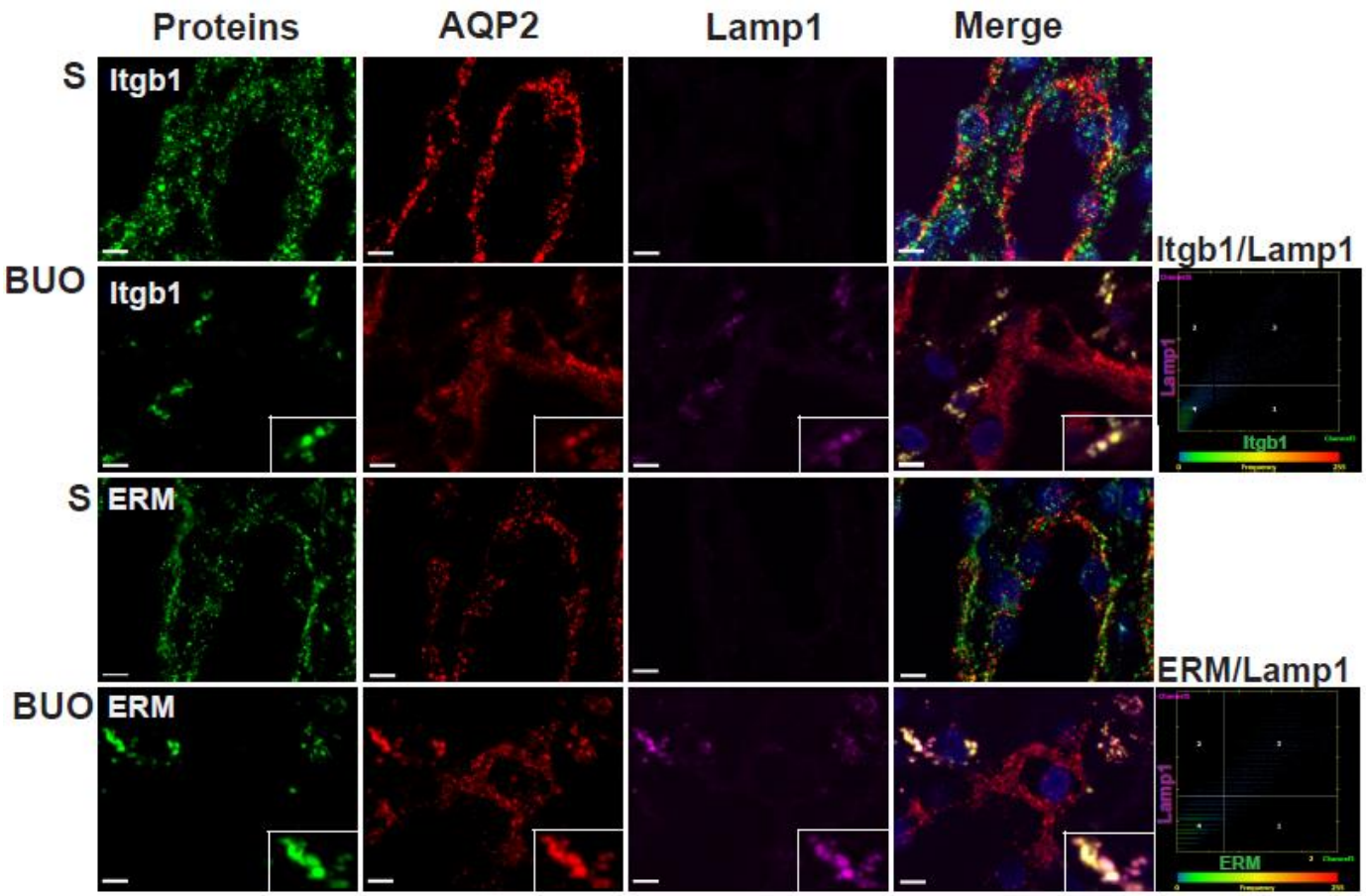
Supplemental Table 4. Urine volume of sham-operated controls.

Duration of experiments	Urine output (ml/kg/hour) (Mean ± SE)
4-hour sham (n=7)	1.37 ± 0.10
10-hour sham (n=7)	1.95 ± 0.13
24-hour sham (n=7)	1.83 ± 0.15



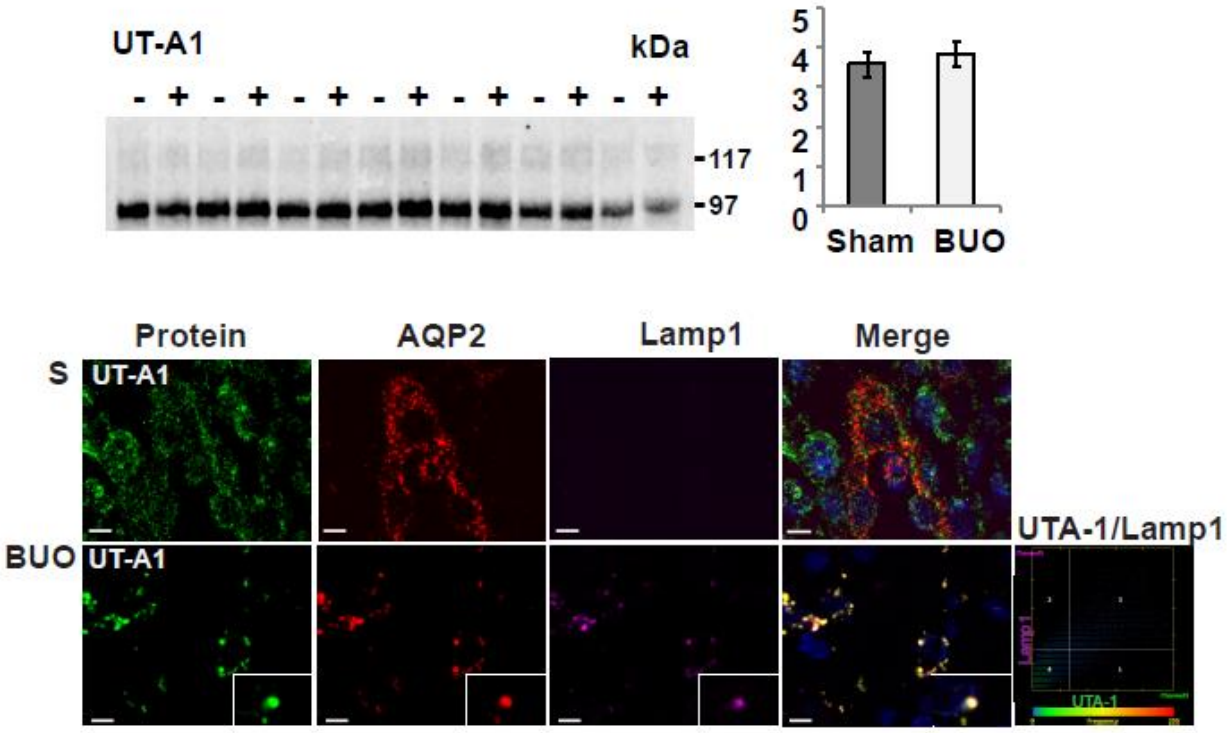
Supplemental Figure 1. Estimated half-lives of downregulated proteins.

A distribution of the estimated half-lives of the downregulated proteins (based on mouse collecting duct protein half-lives from Sandoval *et al*.).



Supplemental Figure 2. Co-localization of cell-cell adhesion proteins with autophagy markers in the inner medulla collecting duct of BUO rats.

The inner medulla sections of sham (S) (n=3) and BUO (n=3) were triple-labelled against AQP2 (red), Lamp1 (pink), and proteins representative of cell-cell adherens junctions (Itgb1, ERM (green)). Scatter plots demonstrate the degree of co-localization between Itgb1 and Lamp1 (Pearson correlation coefficient, r^2=0.89, $P < 0.05$), as well as ERM and Lamp1 (r^2=0.90, $P < 0.05$).



Supplemental Figure 3. Immunoblotting and immunofluorescent study of inner medulla from the BUO rats and sham for UT-A1.

(A). Densitometry analysis revealed no significant change in UT-A1 in IMCD in 4 h BUO (□) (+, n=6) compared with sham (■) (-, n=6) ($P > 0.05$, unpaired *t*-tests). B) The inner medulla sections of sham (S) (n=3) and 4 h BUO (n=3) were triple-labelled against AQP2 (red), Lamp1 (pink), urea transporter A1 (UT-A1). Colocalization of urea transporter A1 with AQP2 and lysosomal protein (Lamp1) was observed in the inner medulla collecting duct of 4 h BUO rats. Insets demonstrate a magnified view of the areas where significant colocalizations were observed as a group of puncta which were not seen in control sections. Scale bar = 4 µm. A representative scatter plots demonstrate the high degree of colocalization between UT-A1 and Lamp1 (Pearson correlation coefficient, r^2=0.76, $P < 0.05$) in IMCD of a rat with 4 h BUO.