

The following tables present results from testing differences between healthy controls and patients with certain channelopathies. N = number of experiments performed for each condition, while no. of points = number of individual experiments.

### Patients with channelopathies

#### A. Vacuolar pH

N	Control	No. of points	Control median (SFR/pH)		Patient	No. of points	Patient median (SFR/pH)		p value
2	HC	444	1.8	8.9	BEST1 (P1)	503	1.8	8.9	0.663
2	HC+Zn	340	2.0	9.0	BEST1 (P1)+Zn	281	2.0	9.0	0.581
2	HC	747	1.7	8.8	BEST1 (P2)	729	1.7	8.8	0.042
2	HC+Zn	433	1.8	8.9	BEST1 (P2)+Zn	549	1.7	8.8	0.432
1	HC	401	1.2	8.1	CIC7 (P1)	401	1.2	8.1	0.170
1	HC+Zn	642	1.7	8.8	CIC7 (P1)+Zn	641	1.3	8.3	0.002
1	HC	201	1.2	8.1	CIC7 (P2)	202	1.2	8.1	0.096
1	HC+Zn	204	2.0	9.1	CIC7 (P2)+Zn	202	2.0	9.1	0.360
1	HC	282	1.9	9.0	MCOLN	415	1.9	9.0	0.391

#### B. Vacuolar area

N	Control	No. of points	Control median	Patient	No. of points	Patient median	p value
2	HC	471	14.50	BEST1 (P1)	381	14.50	0.833
2	HC+Zn	258	15.83	BEST1 (P1)+Zn	256	15.44	0.130
2	HC	612	15.68	BEST1 (P2)	660	16.86	0.003

2	HC+Zn	306	16.78	BEST1 (P2) +Zn	355	17.8	0.006
1	HC	400	14.73	CIC7 (P1)	400	14.18	0.003
1	HC+Zn	404	17.8	CIC7 (P1) +Zn	401	18.43	0.390
1	HC	200	11.97	CIC7 (P2)	197	12.76	0.066
1	HC+Zn	201	15.76	CIC7 (P2) +Zn	200	14.73	0.017
1	HC	214	12.92	MCOLN	245	13.39	0.072