

A) Granule density					
Stimulus	CgB-mRFP INS-1 cells	SG/100 μm^2	p-value	p-value	no. of movies
Resting	GFP	24 \pm 3.10			m=15
HGHK	GFP	13 \pm 2.62	2.909E-10		m=15
Resting	GFP- β 2-syn	10 \pm 4.39		2.004E-11	m=17
HGHK	GFP- β 2-syn	6 \pm 1.53	1.767E-03	4.666E-09	m=12
Resting	GFP	17.5 \pm 4.76		1.370E-16	m=64
Resting	GFP- β 2-syn	10.3 \pm 2.97	1.370E-16		m=49
Resting	GFP- β 2-syn S75D	15.2 \pm 4.76	0.01423	1.650E-10	m=64
Resting	GFP- β 2-syn S90D	12.1 \pm 3.45	9.314E-08	0.0057	m=32
B) Granule mobility - speed distribution					
Stimulus	CgB-mRFP INS-1 cells	Speed Distrib. [$\mu\text{m}/\text{s}$]	p-value	p-value	no. of movies
Resting	GFP	0.455 \pm 0.0697			m=15
HGHK	GFP	0.450 \pm 0.0237	0.8348		m=5
Resting	GFP- β 2-syn	0.338 \pm 0.0254		1.52E-05	m=17
HGHK	GFP- β 2-syn	0.403 \pm 0.0152	1.85E-07	0.0121	m=8
Resting	GFP	0.516 \pm 0.1434		2.590E-09	m=64
Resting	GFP- β 2-syn	0.376 \pm 0.0504	2.590E-09		m=49
Resting	GFP- β 2-syn S75D	0.444 \pm 0.1165	0.00081	1.700E-04	m=64
Resting	GFP- β 2-syn S90D	0.380 \pm 0.0465	1.180E-06	0.6736	m=32
C) Granule mobility - Diffusion Coefficient					
Stimulus	CgB-mRFP INS-1 cells	Diffusion Coeff. D [$\mu\text{m}^2/\text{s}$]	p-value	p-value	no. of movies
Resting	GFP	0.023 \pm 0.004			m=15
HGHK	GFP	0.043 \pm 0.009	0.0097		m=5
Resting	GFP- β 2-syn	0.015 \pm 0.003		9.49E-05	m=17
HGHK	GFP- β 2-syn	0.047 \pm 0.008	0.0079	0.7540	m=8
Resting	GFP	0.0189 \pm 0.005		2.23E-13	m=64
Resting	GFP- β 2-syn	0.0115 \pm 0.003	2.23E-13		m=49
Resting	GFP- β 2-syn S75D	0.0145 \pm 0.006	3.260E-05	0.0019	m=64
Resting	GFP- β 2-syn S90D	0.0128 \pm 0.003	5.120E-08	0.426	m=32