

Statistics summary

Fasting & Refeeding study (Fig. 3a-d, f-k)

Using Two Way Analysis of Variance (SigmaPlot Software)

All Pairwise Multiple Comparison Procedures (Holm-Sidak method):

Overall significance level = 0.05

Fig. 3a Liver TG

Comparisons for factor: **miR**

Comparison	Diff of Means	t	P	P<0.050
miR-Sec22b vs. miR-NC	21.243	3.933	0.001	Yes

Fig. 3b Liver TC

Comparisons for factor: **Feed**

Comparison	Diff of Means	t	P	P<0.050
Refed vs. Fasting	1.116	3.947	0.001	Yes

Comparisons for factor: **miR**

Comparison	Diff of Means	t	P	P<0.050
miR-Sec22b vs. miR-NC	1.000	3.537	0.003	Yes

Fig. 3c Serum TG

Comparison	Diff of Means	t	P	P<0.050
Fasting vs. Refed	0.298	8.163	<0.001	Yes

Comparisons for factor: **miR**

Comparison	Diff of Means	t	P	P<0.050
miR-NC vs. miR-Sec22b	0.539	14.767	<0.001	Yes

Comparisons for factor: **miR within Fasting**

Comparison	Diff of Means	t	P	P<0.050
miR-NC vs. miR-Sec22b	0.886	17.168	<0.001	Yes

Comparisons for factor: **miR within Refed**

Comparison	Diff of Means	t	P	P<0.050
miR-NC vs. miR-Sec22b	0.192	3.716	0.002	Yes

Comparisons for factor: **Feed within miR-NC**

Comparison	Diff of Means	t	P	P<0.050
Fasting vs. Refed	0.645	12.498	<0.001	Yes

Comparisons for factor: **Feed within miR-Sec22b**

Comparison	Diff of Means	t	P	P<0.050
Refed vs. Fasting	0.0492	0.954	0.354	No

Fig. 3d Serum TC

Comparisons for factor: **Feed**

Comparison	Diff of Means	t	P	P<0.050
Refed vs. Fasting	18.126	2.817	0.012	Yes

Comparisons for factor: **miR**

Comparison	Diff of Means	t	P	P<0.050
miR-NC vs. miR-Sec22b	88.290	13.723	<0.001	Yes

Fig. 3f Serum C10:1

Comparison	Diff of Means	t	P	P<0.050
Fasting vs. Refed	0.0426	13.097	<0.001	Yes

Comparisons for factor: **miR**

Comparison	Diff of Means	t	P	P<0.050
miR-Sec22b vs. miR-NC	0.0130	4.007	0.001	Yes

Comparisons for factor: **miR within Fasting**

Comparison	Diff of Means	t	P	P<0.050
miR-Sec22b vs. miR-NC	0.0260	5.494	<0.001	Yes

Comparisons for factor: **miR within Refed**

Comparison	Diff of Means	t	P	P<0.050
miR-Sec22b vs. miR-NC	0.0000640	0.0143	0.989	No

Comparisons for factor: **Feed within miR-NC**

Comparison	Diff of Means	t	P	P<0.050
Fasting vs. Refed	0.0297	6.260	<0.001	Yes

Comparisons for factor: **Feed within miR-Sec22b**

Comparison	Diff of Means	t	P	P<0.050
Fasting vs. Refed	0.0556 12.453	<0.001	Yes	

Fig. 3g Serum C12

Comparison	Diff of Means	t	P	P<0.050
Fasting vs. Refed	0.0464	9.909	<0.001	Yes

Comparisons for factor: **miR**

Comparison	Diff of Means	t	P	P<0.050
miR-Sec22b vs. miR-NC	0.00940	2.007	0.063	No

Comparisons for factor: **miR within Fasting**

Comparison	Diff of Means	t	P	P<0.050
miR-Sec22b vs. miR-NC	0.0208	3.059	0.008	Yes

Comparisons for factor: **miR within Refed**

Comparison	Diff of Means	t	P	P<0.050
miR-NC vs. miR-Sec22b	0.00205	0.319	0.754	No

Comparisons for factor: **Feed within miR-NC**

Comparison	Diff of Means	t	P	P<0.050
Fasting vs. Refed	0.0350	5.130	<0.001	Yes

Comparisons for factor: **Feed within miR-Sec22b**

Comparison	Diff of Means	t	P	P<0.050
Fasting vs. Refed	0.0579	9.004	<0.001	Yes

Fig. 3h Serum C14:1

Comparisons for factor: **Feed**

Comparison	Diff of Means	t	P	P<0.050
Fasting vs. Refed	0.129	13.081	<0.001	Yes

Comparisons for factor: **miR**

Comparison	Diff of Means	t	P	P<0.050
miR-Sec22b vs. miR-NC	0.0311	3.165	0.006	Yes

Comparisons for factor: **miR within Fasting**

Comparison	Diff of Means	t	P	P<0.050
miR-Sec22b vs. miR-NC	0.0706	4.941	<0.001	Yes

Comparisons for factor: **miR within Refed**

Comparison	Diff of Means	t	P	P<0.050
miR-NC vs. miR-Sec22b	0.00845	0.627	0.540	No

Comparisons for factor: **Feed within miR-NC**

Comparison	Diff of Means	t	P	P<0.050
Fasting vs. Refed	0.0890	6.223	<0.001	Yes

Comparisons for factor: **Feed within miR-Sec22b**

Comparison	Diff of Means	t	P	P<0.050
Fasting vs. Refed	0.168	12.468	<0.001	Yes

Fig. 3i Serum Ala

Comparisons for factor: **Feed**

Comparison	Diff of Means	t	P	P<0.050
Refed vs. Fasting	383.619	7.062	<0.001	Yes

Comparisons for factor: **miR**

Comparison	Diff of Means	t	P	P<0.050
miR-Sec22b vs. miR-NC	156.298	2.877	0.012	Yes

Comparisons for factor: **miR within Fasting**

Comparison	Diff of Means	t	P	P<0.050
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miR-NC vs. miR-Sec22b	28.902	0.366	0.720	No
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Comparisons for factor: **miR within Refed**

Comparison	Diff of Means	t	P	P<0.050
miR-Sec22b vs. miR-NC	341.498	4.582	<0.001	Yes

Comparisons for factor: **Feed within miR-NC**

Comparison	Diff of Means	t	P	P<0.050
Refed vs. Fasting	198.420	2.510	0.024	Yes

Comparisons for factor: **Feed within miR-Sec22b**

Comparison	Diff of Means	t	P	P<0.050
Refed vs. Fasting	568.819	7.632	<0.001	Yes

Fig. 3j Serum Gly

Comparisons for factor: **Feed**

Comparison	Diff of Means	t	P	P<0.050
Refed vs. Fasting	95.054	4.383	<0.001	Yes

Comparisons for factor: **miR**

Comparison	Diff of Means	t	P	P<0.050
miR-Sec22b vs. miR-NC	120.129	5.539	<0.001	Yes

Comparisons for factor: **miR within Fasting**

Comparison	Diff of Means	t	P	P<0.050
miR-Sec22b vs. miR-NC	62.818	1.990	0.065	No

Comparisons for factor: **miR within Refed**

Comparison	Diff of Means	t	P	P<0.050
miR-Sec22b vs. miR-NC	177.440	5.964	<0.001	Yes

Comparisons for factor: **Feed within miR-NC**

Comparison	Diff of Means	t	P	P<0.050
Refed vs. Fasting	37.742	1.196	0.250	No

Comparisons for factor: **Feed within miR-Sec22b**

Comparison	Diff of Means	t	P	P<0.050
Refed vs. Fasting	152.365	5.121	<0.001	Yes

Fig. 3k Serum Orn

Comparisons for factor: **Feed**

Comparison	Diff of Means	t	P	P<0.050
Refed vs. Fasting	59.534	1.651	0.119	No

Comparisons for factor: **miR**

Comparison	Diff of Means	t	P	P<0.050
miR-Sec22b vs. miR-NC	203.073	5.632	<0.001	Yes

Comparisons for factor: **miR within Fasting**

Comparison	Diff of Means	t	P	P<0.050
miR-Sec22b vs. miR-NC	107.708	2.053	0.058	No

Comparisons for factor: **miR within Refed**

Comparison	Diff of Means	t	P	P<0.050
miR-Sec22b vs. miR-NC	298.438	6.033	<0.001	Yes

Comparisons for factor: **Feed within miR-NC**

Comparison	Diff of Means	t	P	P<0.050
Fasting vs. Refed	35.831	0.683	0.505	No

Comparisons for factor: **Feed within miR-Sec22b**

Comparison	Diff of Means	t	P	P<0.050
Refed vs. Fasting	154.899	3.131	0.007	Yes

Statistics summary

Refeeding SEC22B re-introduction study (Fig. 3l-n, p, r-u)

Using Two Way Analysis of Variance (SigmaPlot Software)

All Pairwise Multiple Comparison Procedures (Holm-Sidak method):

Overall significance level = 0.05

Fig. 3l Serum Ala

Comparisons for factor: **cDNA within miR-NC**

Comparison	Diff of Means	t	P	P<0.050
WT vs. GFP	86.349	1.220	0.240	No

Comparisons for factor: **cDNA within miR-Sec22b**

Comparison	Diff of Means	t	P	P<0.050
GFP vs. WT	153.997	2.176	0.045	Yes

Comparisons for factor: **miR within GFP**

Comparison	Diff of Means	t	P	P<0.050
miR-Sec22b vs. miR-NC	257.011	3.632	0.002	Yes

Comparisons for factor: **miR within WT**

Comparison	Diff of Means	t	P	P<0.050
miR-Sec22b vs. miR-NC	16.666	0.236	0.817	No

Fig. 3m Serum Gly

Comparisons for factor: **cDNA within miR-NC**

Comparison	Diff of Means	t	P	P<0.050
WT vs. GFP	16.275	0.836	0.415	No

Comparisons for factor: **cDNA within miR-Sec22b**

Comparison	Diff of Means	t	P	P<0.050
GFP vs. WT	86.432	4.442	<0.001	Yes

Comparisons for factor: **miR within GFP**

Comparison	Diff of Means	t	P	P<0.050
miR-Sec22b vs. miR-NC	123.200	6.331	<0.001	Yes

Comparisons for factor: **miR within WT**

Comparison	Diff of Means	t	P	P<0.050
miR-Sec22b vs. miR-NC	20.493	1.053	0.308	No

Fig. 3n Serum Orn

Comparisons for factor: **cDNA within miR-NC**

Comparison	Diff of Means	t	P	P<0.050
WT vs. GFP	5.542	0.702	0.493	No

Comparisons for factor: **cDNA within miR-Sec22b**

Comparison	Diff of Means	t	P	P<0.050
GFP vs. WT	30.822	3.903	0.001	Yes

Comparisons for factor: **miR within GFP**

Comparison	Diff of Means	t	P	P<0.050
miR-Sec22b vs. miR-NC	25.530	3.232	0.005	Yes

Comparisons for factor: **miR within WT**

Comparison	Diff of Means	t	P	P<0.050
miR-NC vs. miR-Sec22b	10.835	1.372	0.189	No

Fig. 3p Normalized SEC22B

Comparisons for factor: **cDNA within miR-NC**

Comparison	Diff of Means	t	P	P<0.050
WT vs. GFP	1.280	10.820	<0.001	Yes

Comparisons for factor: **cDNA within miR-Sec22b**

Comparison	Diff of Means	t	P	P<0.050
WT vs. GFP	0.739	6.245	<0.001	Yes

Comparisons for factor: **miR within GFP**

Comparison	Diff of Means	t	P	P<0.050
miR-NC vs. miR-Sec22b	0.790	6.676	<0.001	Yes

Comparisons for factor: **miR within WT**

Comparison	Diff of Means	t	P	P<0.050
miR-NC vs. miR-Sec22b	1.331	11.251	<0.001	Yes

Fig. 3r Serum TG

Comparisons for factor: **cDNA within miR-NC**

Comparison	Diff of Means	t	P	P<0.050
WT vs. GFP	0.0678	0.530	0.604	No

Comparisons for factor: **cDNA within miR-Sec22b**

Comparison	Diff of Means	t	P	P<0.050
WT vs. GFP	0.681	5.322	<0.001	Yes

Comparisons for factor: **miR within GFP**

Comparison	Diff of Means	t	P	P<0.050
miR-NC vs. miR-Sec22b	0.373	2.917	0.010	Yes

Comparisons for factor: **miR within WT**

Comparison	Diff of Means	t	P	P<0.050
miR-Sec22b vs. miR-NC	0.240	1.875	0.079	No

Fig. 3s Serum TC

Comparisons for factor: **cDNA within miR-NC**

Comparison	Diff of Means	t	P	P<0.050
GFP vs. WT	23.242	2.348	0.032	Yes

Comparisons for factor: **cDNA within miR-Sec22b**

Comparison	Diff of Means	t	P	P<0.050
WT vs. GFP	70.255	7.096	<0.001	Yes

Comparisons for factor: **miR within GFP**

Comparison	Diff of Means	t	P	P<0.050
miR-NC vs. miR-Sec22b	112.243	11.337	<0.001	Yes

Comparisons for factor: **miR within WT**

Comparison	Diff of Means	t	P	P<0.050
miR-NC vs. miR-Sec22b	18.746	1.893	0.077	No

Fig. 3t Serum ALT

Comparisons for factor: **cDNA within miR-NC**

Comparison	Diff of Means	t	P	P<0.050
GFP vs. WT	5.206	0.383	0.707	No

Comparisons for factor: **cDNA within miR-Sec22b**

Comparison	Diff of Means	t	P	P<0.050
GFP vs. WT	66.984	4.928	<0.001	Yes

Comparisons for factor: **miR within GFP**

Comparison	Diff of Means	t	P	P<0.050
miR-Sec22b vs. miR-NC	73.144	5.381	<0.001	Yes

Comparisons for factor: **miR within WT**

Comparison	Diff of Means	t	P	P<0.050
miR-Sec22b vs. miR-NC	11.366	0.836	0.415	No

Fig. 3u Serum AST

Comparisons for factor: **cDNA within miR-NC**

Comparison	Diff of Means	t	P	P<0.050
GFP vs. WT	4.440	0.259	0.799	No

Comparisons for factor: **cDNA within miR-Sec22b**

Comparison	Diff of Means	t	P	P<0.050
GFP vs. WT	51.448	2.999	0.009	Yes

Comparisons for factor: **miR within GFP**

Comparison	Diff of Means	t	P	P<0.050
miR-Sec22b vs. miR-NC	69.056	4.025	<0.001	Yes

Comparisons for factor: **miR within WT**

Comparison	Diff of Means		t	P	P<0.050
miR-Sec22b vs. miR-NC	22.049	1.285	0.217	No	

Statistics summary

Acute glucagon SEC22B knockdown (KD) study (Fig. 4b-j)

Using Two Way Analysis of Variance (SigmaPlot Software)
All Pairwise Multiple Comparison Procedures (Holm-Sidak method):
Overall significance level = 0.05

Fig. 4b Liver p-PKA motif quantification

Comparisons for factor: **Inj (Injection)**

Comparison	Diff of Means	t	P	P<0.050
GCG vs. VEH	597869.400	4.516	<0.001	Yes

Fig. 4c Liver TG

Comparisons for factor: **AAV**

Comparison	Diff of Means	t	P	P<0.050
KD vs. NC	13.440	3.720	0.002	Yes

Fig. 4d serum TG

Comparisons for factor: **AAV**

Comparison	Diff of Means	t	P	P<0.050
NC vs. KD	0.575	3.476	0.003	Yes

Comparisons for factor: **Inj**

Comparison	Diff of Means	t	P	P<0.050
VEH vs. GCG	0.394	2.383	0.030	Yes

Fig. 4e serum Ala

Comparisons for factor: **miR**

Comparison	Diff of Means	t	P	P<0.050
KD vs. NC	49.491	2.450	0.026	Yes

Comparisons for factor: **Inj**

Comparison	Diff of Means	t	P	P<0.050
VEH vs. GCG	2.291	0.113	0.911	No

Comparisons for factor: **Inj within NC**

Comparison	Diff of Means	t	P	P<0.050
VEH vs. GCG	25.600	0.896	0.383	No

Comparisons for factor: **Inj within KD**

Comparison	Diff of Means	t	P	P<0.050
GCG vs. VEH	21.018	0.736	0.473	No

Comparisons for factor: **miR within VEH**

Comparison	Diff of Means	t	P	P<0.050
KD vs. NC	26.182	0.917	0.373	No

Comparisons for factor: **miR within GCG**

Comparison	Diff of Means	t	P	P<0.050
KD vs. NC	72.800	2.548	0.021	Yes

Fig. 4e serum Gly

Comparisons for factor: **miR**

Comparison	Diff of Means	t	P	P<0.050
KD vs. NC	49.491	2.450	0.026	Yes

Comparisons for factor: **Inj**

Comparison	Diff of Means	t	P	P<0.050
VEH vs. GCG	2.291	0.113	0.911	No

Comparisons for factor: **Inj within NC**

Comparison	Diff of Means	t	P	P<0.050
VEH vs. GCG	25.600	0.896	0.383	No

Comparisons for factor: **Inj within KD**

Comparison	Diff of Means	t	P	P<0.050
GCG vs. VEH	21.018	0.736	0.473	No

Comparisons for factor: **miR within VEH**

Comparison	Diff of Means	t	P	P<0.050
KD vs. NC	26.182	0.917	0.373	No

Comparisons for factor: **miR within GCG**

Comparison	Diff of Means	t	P	P<0.050
KD vs. NC	72.800	2.548	0.021	Yes

Fig. 4g serum Orn

Comparisons for factor: **miR**

Comparison	Diff of Means	t	P	P<0.050
KD vs. NC	66.339	2.916	0.010	Yes

Comparisons for factor: **Inj**

Comparison	Diff of Means	t	P	P<0.050
GCG vs. VEH	74.070	3.255	0.005	Yes

Comparisons for factor: **Inj within NC**

Comparison	Diff of Means	t	P	P<0.050
GCG vs. VEH	28.512	0.886	0.389	No

Comparisons for factor: **Inj within KD**

Comparison	Diff of Means	t	P	P<0.050
GCG vs. VEH	119.629	3.718	0.002	Yes

Comparisons for factor: **miR within VEH**

Comparison	Diff of Means	t	P	P<0.050
KD vs. NC	20.781	0.646	0.528	No

Comparisons for factor: **miR within GCG**

Comparison	Diff of Means	t	P	P<0.050
KD vs. NC	111.898	3.477	0.003	Yes

Fig. 4h serum Cit

Comparisons for factor: **miR**

Comparison	Diff of Means	t	P	P<0.050
KD vs. NC	6.501	3.314	0.004	Yes

Comparisons for factor: **Inj**

Comparison	Diff of Means	t	P	P<0.050
VEH vs. GCG	2.878	1.467	0.162	No

Comparisons for factor: **Inj within NC**

Comparison	Diff of Means	t	P	P<0.050
VEH vs. GCG	5.184	1.868	0.080	No

Comparisons for factor: **Inj within KD**

Comparison	Diff of Means	t	P	P<0.050
VEH vs. GCG	0.572	0.206	0.839	No

Comparisons for factor: **miR within VEH**

Comparison	Diff of Means	t	P	P<0.050
KD vs. NC	4.195	1.512	0.150	No

Comparisons for factor: **miR within GCG**

Comparison	Diff of Means	t	P	P<0.050
KD vs. NC	8.807	3.174	0.006	Yes

Fig. 4j serum Val

Comparisons for factor: **miR**

Comparison	Diff of Means	t	P	P<0.050
KD vs. NC	54.880	4.491	<0.001	Yes

Comparisons for factor: **Inj**

Comparison	Diff of Means	t	P	P<0.050
GCG vs. VEH	75.411	6.171	<0.001	Yes

Comparisons for factor: **Inj within NC**

Comparison	Diff of Means	t	P	P<0.050
GCG vs. VEH	57.107	3.305	0.004	Yes

Comparisons for factor: **Inj within KD**

Comparison	Diff of Means	t	P	P<0.050
GCG vs. VEH	93.715	5.423	<0.001	Yes

Comparisons for factor: **miR within VEH**

Comparison	Diff of Means	t	P	P<0.050
KD vs. NC	36.576	2.117	0.050	No

Comparisons for factor: **miR within GCG**

Comparison	Diff of Means	t	P	P<0.050
KD vs. NC	73.184	4.235	<0.001	Yes

Fig. 4i serum Leu/Ile

Comparisons for factor: **miR**

Comparison	Diff of Means	t	P	P<0.050
KD vs. NC	113.491	2.784	0.013	Yes

Comparisons for factor: **Inj**

Comparison	Diff of Means	t	P	P<0.050
GCG vs. VEH	140.992	3.459	0.003	Yes

Comparisons for factor: **Inj within NC**

Comparison	Diff of Means	t	P	P<0.050
GCG vs. VEH	79.942	1.387	0.184	No

Comparisons for factor: **Inj within KD**

Comparison	Diff of Means	t	P	P<0.050
GCG vs. VEH	202.042	3.505	0.003	Yes

Comparisons for factor: **miR within VEH**

Comparison	Diff of Means	t	P	P<0.050
KD vs. NC	52.442	0.910	0.376	No

Comparisons for factor: **miR within GCG**

Comparison	Diff of Means	t	P	P<0.050
KD vs. NC	174.541	3.028	0.008	Yes

Statistics summary

Chronic glucagon SEC22B S137A study (Fig. 4k-l, n-u)

Using Two Way Analysis of Variance (SigmaPlot Software)

All Pairwise Multiple Comparison Procedures (Holm-Sidak method):

Overall significance level = 0.05

Fig. 4k liver glycogen

Comparisons for factor: **cDNA within miR-NC**

Comparison	Diff of Means	t	P	P<0.050
WT vs. GFP	81.205	2.026	0.147	No
WT vs. S-A	74.863	1.867	0.138	No
S-A vs. GFP	6.342	0.158	0.875	No

Comparisons for factor: **cDNA within miR-Sec22b**

Comparison	Diff of Means	t	P	P<0.050
GFP vs. WT	176.355	4.399	<0.001	Yes
S-A vs. WT	111.948	2.792	0.018	Yes
GFP vs. S-A	64.407	1.607	0.119	No

Comparisons for factor: **miR within GFP**

Comparison	Diff of Means	t	P	P<0.050
miR-Sec22b vs. miR-NC	196.048	4.890	<0.001	Yes

Comparisons for factor: **miR within WT**

Comparison	Diff of Means	t	P	P<0.050
miR-NC vs. miR-Sec22b	61.512	1.534	0.135	No

Comparisons for factor: **miR within S-A**

Comparison	Diff of Means	t	P	P<0.050
miR-Sec22b vs. miR-NC	125.300	3.125	0.004	Yes

Fig. 4l serum urea

Comparisons for factor: **cDNA within miR-NC**

Comparison	Diff of Means	t	P	P<0.050
WT vs. S-A	5.682	1.253	0.525	No
WT vs. GFP	5.178	1.142	0.456	No
GFP vs. S-A	0.503	0.111	0.912	No

Comparisons for factor: **cDNA within miR-Sec22b**

Comparison	Diff of Means	t	P	P<0.050
S-A vs. WT	11.153	2.460	0.058	No
GFP vs. WT	10.910	2.406	0.044	Yes
S-A vs. GFP	0.243	0.0537	0.958	No

Comparisons for factor: **miR within GFP**

Comparison	Diff of Means	t	P	P<0.050
miR-Sec22b vs. miR-NC	16.037	3.537	0.001	Yes

Comparisons for factor: **miR within WT**

Comparison	Diff of Means	t	P	P<0.050
miR-NC vs. miR-Sec22b	0.0517	0.0114	0.991	No

Comparisons for factor: **miR within S-A**

Comparison	Diff of Means	t	P	P<0.050
miR-Sec22b vs. miR-NC	16.783	3.702	<0.001	Yes

Fig. 4n serum Ala

Comparisons for factor: **cDNA within miR-NC**

Comparison	Diff of Means	t	P	P<0.050
S-A vs. WT	6.538	0.131	0.999	No
S-A vs. GFP	5.607	0.112	0.999	No
GFP vs. WT	0.931	0.0187	0.999	No

Comparisons for factor: **cDNA within miR-Sec22b**

Comparison	Diff of Means	t	P	P<0.050
GFP vs. WT	152.931	3.066	0.014	Yes
GFP vs. S-A	85.168	1.707	0.187	No
S-A vs. WT	67.763	1.358	0.187	No

Comparisons for factor: **miR within GFP**

Comparison	Diff of Means	t	P	P<0.050
miR-Sec22b vs. miR-NC	202.267	4.055	<0.001	Yes

Comparisons for factor: **miR within WT**

Comparison	Diff of Means	t	P	P<0.050
miR-Sec22b vs. miR-NC	50.267	1.008	0.322	No

Comparisons for factor: **miR within S-A**

Comparison	Diff of Means	t	P	P<0.050
miR-Sec22b vs. miR-NC	111.492	2.235	0.033	Yes

Fig. 4o serum Gly

Comparisons for factor: **cDNA within miR-NC**

Comparison	Diff of Means	t	P	P<0.050
WT vs. GFP	33.454	1.081	0.639	No
WT vs. S-A	19.552	0.632	0.781	No
S-A vs. GFP	13.902	0.449	0.781	No

Comparisons for factor: **cDNA within miR-Sec22b**

Comparison	Diff of Means	t	P	P<0.050
GFP vs. WT	84.784	2.741	0.030	Yes
GFP vs. S-A	48.448	1.566	0.239	No
S-A vs. WT	36.336	1.175	0.249	No

Comparisons for factor: **miR within GFP**

Comparison	Diff of Means	t	P	P<0.050
miR-Sec22b vs. miR-NC	165.710	5.356	<0.001	Yes

Comparisons for factor: **miR within WT**

Comparison	Diff of Means	t	P	P<0.050
miR-Sec22b vs. miR-NC	47.472	1.534	0.135	No

Comparisons for factor: **miR within S-A**

Comparison	Diff of Means	t	P	P<0.050
miR-Sec22b vs. miR-NC	103.360	3.341	0.002	Yes

Fig. 4p serum Orn

Comparisons for factor: **cDNA within miR-NC**

Comparison	Diff of Means	t	P	P<0.050
GFP vs. WT	20.823	0.645	0.892	No
GFP vs. S-A	11.333	0.351	0.926	No
S-A vs. WT	9.490	0.294	0.926	No

Comparisons for factor: **cDNA within miR-Sec22b**

Comparison	Diff of Means	t	P	P<0.050
GFP vs. WT	133.521	4.139	<0.001	Yes
GFP vs. S-A	100.863	3.127	0.008	Yes
S-A vs. WT	32.658	1.012	0.319	No

Comparisons for factor: **miR within GFP**

Comparison	Diff of Means	t	P	P<0.050
miR-Sec22b vs. miR-NC	155.746	4.828	<0.001	Yes

Comparisons for factor: **miR within WT**

Comparison	Diff of Means	t	P	P<0.050
miR-Sec22b vs. miR-NC	43.048	1.334	0.192	No

Comparisons for factor: **miR within S-A**

Comparison	Diff of Means	t	P	P<0.050
miR-Sec22b vs. miR-NC	66.215	2.053	0.049	Yes

Fig. 4q serum Cit

Comparisons for factor: **cDNA within miR-NC**

Comparison	Diff of Means	t	P	P<0.050
WT vs. GFP	4.732	0.691	0.871	No
WT vs. S-A	3.592	0.524	0.871	No
S-A vs. GFP	1.140	0.166	0.871	No

Comparisons for factor: **cDNA within miR-Sec22b**

Comparison	Diff of Means	t	P	P<0.050
GFP vs. WT	30.765	4.490	<0.001	Yes
S-A vs. WT	16.850	2.459	0.039	Yes
GFP vs. S-A	13.916	2.031	0.051	No

Comparisons for factor: **miR within GFP**

Comparison	Diff of Means	t	P	P<0.050
miR-Sec22b vs. miR-NC	43.141	6.297	<0.001	Yes

Comparisons for factor: **miR within WT**

Comparison	Diff of Means	t	P	P<0.050
miR-Sec22b vs. miR-NC	7.643	1.116	0.273	No

Comparisons for factor: **miR within S-A**

Comparison	Diff of Means	t	P	P<0.050
miR-Sec22b vs. miR-NC	28.085	4.099	<0.001	Yes

Fig. 4r serum Val

Comparisons for factor: **cDNA within miR-NC**

Comparison	Diff of Means	t	P	P<0.050
WT vs. S-A	3.808	0.159	0.998	No
GFP vs. S-A	3.554	0.148	0.998	No
WT vs. GFP	0.254	0.0106	0.998	No

Comparisons for factor: **cDNA within miR-Sec22b**

Comparison	Diff of Means	t	P	P<0.050
GFP vs. WT	100.299	4.184	<0.001	Yes
S-A vs. WT	63.765	2.660	0.025	Yes
GFP vs. S-A	36.533	1.524	0.138	No

Comparisons for factor: **miR within GFP**

Comparison	Diff of Means	t	P	P<0.050
miR-Sec22b vs. miR-NC	128.324	5.353	<0.001	Yes

Comparisons for factor: **miR within WT**

Comparison	Diff of Means	t	P	P<0.050
miR-Sec22b vs. miR-NC	27.771	1.158	0.256	No

Comparisons for factor: **miR within S-A**

Comparison	Diff of Means	t	P	P<0.050
miR-Sec22b vs. miR-NC	95.344	3.977	<0.001	Yes

Fig. 4s serum Leu/Ile

Comparisons for factor: **cDNA within miR-NC**

Comparison	Diff of Means	t	P	P<0.050
GFP vs. WT	4.464	0.130	0.999	No
S-A vs. WT	2.512	0.0732	0.999	No
GFP vs. S-A	1.952	0.0569	0.999	No

Comparisons for factor: **cDNA within miR-Sec22b**

Comparison	Diff of Means	t	P	P<0.050
GFP vs. WT	130.000	3.791	0.002	Yes
S-A vs. WT	89.152	2.600	0.028	Yes

GFP vs. S-A	40.848	1.191	0.243	No
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Comparisons for factor: **miR within GFP**

Comparison	Diff of Means	t	P	P<0.050
miR-Sec22b vs. miR-NC	155.888	4.546	<0.001	Yes

Comparisons for factor: **miR within WT**

Comparison	Diff of Means	t	P	P<0.050
miR-Sec22b vs. miR-NC	30.352	0.885	0.383	No

Comparisons for factor: **miR within S-A**

Comparison	Diff of Means	t	P	P<0.050
miR-Sec22b vs. miR-NC	116.992	3.411	0.002	Yes

Fig. 4t liver TG

Comparisons for factor: **cDNA within miR-NC**

Comparison	Diff of Means	t	P	P<0.050
GFP vs. WT	5.091	2.262	0.091	No
GFP vs. S-A	3.172	1.409	0.310	No
S-A vs. WT	1.919	0.853	0.401	No

Comparisons for factor: **cDNA within miR-Sec22b**

Comparison	Diff of Means	t	P	P<0.050
GFP vs. S-A	29.173	12.960	<0.001	Yes
GFP vs. WT	27.469	12.203	<0.001	Yes
WT vs. S-A	1.704	0.757	0.455	No

Comparisons for factor: **miR within GFP**

Comparison	Diff of Means	t	P	P<0.050
miR-Sec22b vs. miR-NC	26.933	11.964	<0.001	Yes

Comparisons for factor: **miR within WT**

Comparison	Diff of Means	t	P	P<0.050
miR-Sec22b vs. miR-NC	4.554	2.023	0.052	No

Comparisons for factor: **miR within S-A**

Comparison	Diff of Means	t	P	P<0.050
miR-Sec22b vs. miR-NC	0.931 0.413	0.682	No	No

Fig. 4u serum TG

Comparisons for factor: **cDNA within miR-NC**

Comparison	Diff of Means	t	P	P<0.050
WT vs. GFP	0.452	1.505	0.370	No
S-A vs. GFP	0.276	0.921	0.596	No
WT vs. S-A	0.175	0.585	0.563	No

Comparisons for factor: **cDNA within miR-Sec22b**

Comparison	Diff of Means	t	P	P<0.050
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S-A vs. GFP	1.916	6.387	<0.001	Yes
S-A vs. WT	1.144	3.815	0.001	Yes
WT vs. GFP	0.771	2.572	0.015	Yes

Comparisons for factor: **miR within GFP**

Comparison	Diff of Means	t	P	P<0.050
miR-NC vs. miR-Sec22b	0.125	0.418	0.679	No

Comparisons for factor: **miR within WT**

Comparison	Diff of Means	t	P	P<0.050
miR-Sec22b vs. miR-NC	0.194	0.648	0.522	No

Comparisons for factor: **miR within S-A**

Comparison	Diff of Means	t	P	P<0.050
miR-Sec22b vs. miR-NC	1.514	5.048	<0.001	Yes