Comparison between MagZol Reagent and Life Trizol

Experiment: Take tissue sample, grind with liquid nitrogen, take 200-400mg into 5ml centrifuge tube, immediately add 4ml Trizol or 4ml MagZol Reagent for lysis. After sufficient lysis, take 1ml from each tube and proceed with the precipitation process. Take another 1ml from each tube and centrifuge directly (without chloroform). After centrifugation, take 0.5ml of the supernatant and transfer it to a column with 0.5 times the volume of anhydrous ethanol.

From the experiment, it can be seen that there is no difference between MagZol Reagent and Trizol (Invitogen) as well as between direct precipitation or column method. In this experiment, more than ten formulations were compared and studied, some of which had stronger lysing ability. Although they could increase yield, genomic DNA contamination was more severe. When reducing the lysing capacity, good yield can also be obtained, but there may be some deviation. When optimizing the formula, it was found that MagZol Reagent was the closest to Trizol. During muscle extraction, we found that Trizol and MagZol Reagent were unable to completely dissolve the muscle sample, which still had a large amount of precipitates. Adding guanidine salt can completely dissolve muscles, but it will increase DNA contamination. In this experiment, we had tested over 200 cases of data and spent 3 weeks for repeatedly comparing. The final conclusion is that MagZol Reagent is comparable to Trizol.

Frog (amphibian)						
A260/230	A260/280	Conc. (ng/μl)		Yield	Sample	
1.89	1.80	844.39	Trizol	253.32	Frog liver	Precipitation method
1.90	1.79	840.67		252.20		
1.88	1.81	866.95	Magzol	260.09		
1.70	1.81	779.28		233.78		
1.42	1.81	451.45	Trizol	135.43	Frog lung	
1.48	1.81	459.45		138.00		
0.65	1.80	351.72	Magzol	105.52		
0.89	1.82	365.23		109.57		
0.60	1.72	127.21	Trizol	38.16	Frog heart	
0.72	1.72	105.55		31.66		
1.63	1.78	222.61	Magzol	66.78		
0.68	1.69	189.86		56.96		
2.17	1.84	1441.75	Trizol	144.18	Frog liver	Column method (without chloroform extraction) R4130
2.23	1.87	1503.06	Magzol	150.31		
1.98	1.82	970.73	Trizol	97.07	Frog lung	
2.26	1.81	1016.81	Magzol	101.68		
1.65	1.75	203.08	Trizol	20.31	Frog heart	
2.17	1.85	260.96	Magzol	26.10		

Fish						
A260/230	A260/280	Conc. (ng/μl)		Yield	Sample	
1.08	1.90	828.98	Trizol	248.70	Fish liver 60mg	Precipitation method
1.30	1.87	861.46		258.44		
1.15	1.92	886.93	Magzol	266.08		
1.22	1.94	867.38		260.22		
0.47	1.47	681.19	Trizol	34.06	Fish meat 90mg	
0.81	1.72	632.47		31.62		
1.01	1.82	622.85	Magzol	31.14		
0.72	1.65	639.55		31.98		
1.64	1.90	536.58	Trizol	160.97	Fish gill 75mg	
1.45	1.92	549.89		164.97		
1.41	1.91	570.80	Magzol	171.24		
1.74	1.91	578.02		173.41		

1.58	1.92	98.95	Trizol	29.69	Fish liver 60mg	Column method (without chloroform extraction) R4130
1.91	1.95	150.84		45.25		
2.17	1.95	170.58	Magzol	51.17		
2.14	1.93	256.35		76.91		
1.25	1.83	41.65	Trizol	12.49	Fish meat 90mg	
1.46	1.92	40.45		12.13		
1.04	1.83	32.43	Magzol	9.73		
1.21	1.86	39.85		11.96		
1.94	1.98	288.61	Trizol	86.58	Fish gill 75mg	
2.05	2.01	306.36		91.91		
2.01	1.99	371.35	Magzol	111.41		
1.69	1.97	311.59		93.48		

Birds (chickens)						
A260/230	A260/280	Conc. (ng/μl)		Yield	Sample	
1.65	1.77	68.20	Trizol	13.64	Chicken meat	Column method (without chloroform extraction) R4130
1.77	1.79	69.92		13.98		
1.25	1.72	69.16	Magzol	13.83		
1.13	1.73	69.74		13.95		
1.24	1.79	589.25	Trizol	117.85	Liver	
1.41	1.85	606.92		121.38		
1.12	1.79	567.80	Magzol	113.56		
1.12	1.81	569.02		113.80		
0.81	1.85	230.64	Trizol	23.06	Chicken meat	Precipitation method
0.73	1.86	236.50		23.65		
0.66	1.85	264.02	Magzol	26.40		
1.22	1.86	264.12		26.41		
1.09	1.86	561.46	Trizol	224.58	Liver	
1.12	1.87	566.21		226.48		
0.82	1.88	535.69	Magzol	214.27		
0.86	1.88	529.54		211.82		

Differences in physical and chemical indicators

Take 10ml of MagZol Reagent/Trizol and add 1ml of Buffer BCP. Shake vigorously for 20 seconds, place for 10 minutes. Centrifuge at 3,000 x g for 5 minutes. Take the supernatant. Add twice the volume of pure water and measure the pH and conductivity values. Check the pH and conductivity values between different batches.

Life Trizol Reagent	pH 4.42	Conductivity 69.0			
MagZol Reagent Batch 1	pH 4.40	Conductivity 67.0			
MagZol Reagent Batch 2	pH 4.45	Conductivity 68.0			
MagZol Reagent Batch 3	pH 4.40	Conductivity 66.8			
MagZol Reagent Batch 4	pH 4.42	Conductivity 67.5			