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Data article

Dataset on assessment of magnesium isoglycyrrhizinate injection for dairy diet and body weight in fructose-induced metabolic syndrome of rats

Xiao-Juan Zhao^{a,1}, Yan-Zi Yang^{a,1}, Yan-Jing Zheng^a,
Shan-Chun Wang^b, Hong-Mei Gu^b, Ying Pan^a,
Shui-Juan Wang^a, Hong-Jiang Xu^{b,*}, Ling-Dong Kong^{a,**}

^a State Key Laboratory of Pharmaceutical Biotechnology, School of Life Sciences, Nanjing University, Nanjing 210023, PR China

^b Drug Screening and Evaluation Department of R&D Institute, Chia Tai Tianqing Pharmaceutical Group Co., LTD, Nanjing 210023, PR China

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ABSTRACT

The data presented herein are related to the research article entitled "Magnesium isoglycyrrhizinate blocks fructose-induced hepatic NF- κ B/NLRP3 inflammasome activation and lipid metabolism disorder" (Zhao et al., 2017) [1]. This article describes the effects of magnesium isoglycyrrhizinate on 24-h food or water intake in fructose-fed rats at 15-week. In addition, this article expands the effect of magnesium isoglycyrrhizinate on the animal body weight change during 1–17 week. The field dataset is made publicly available to enable critical or extended analyzes.

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* Corresponding author. Fax: +86-025-025-68551536.

** Corresponding author. Fax: +86-025-83594691.

E-mail addresses: 13915987463@163.com (H.-J. Xu), kongld@nju.edu.cn (L.-D. Kong).

¹ These authors contributed equally to this work.

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Specifications Table

Subject area	<i>Biology</i>
More specific sub- ject area	<i>Pharmacological Study on Metabolic Diseases</i>
Type of data	<i>Table</i>
How data was acquired	<i>Raw data are recorded during the animal experiment.</i>
Data format	<i>Raw</i>
Experimental factors	<i>Male Sprague-Dawley rats consumed drinking water or 10% fructose solution in drinking water (weight/volume) for 6 weeks. Fructose-fed rats were treated intraperitoneally with saline injection, or 10, 20 and 40 mg/kg magnesium isoglycyrrhizinate injection, or intragastrically 4 mg/kg pioglitazone for the last 11 weeks (n = 8–10/group), respectively.</i>
Experimental features	<i>For 24-h food and water intake: Rats were housed in metabolic cages with free access to standard chow and water. The 24-h food and water intake was recorded, respectively. For body weight: Animal body weight was detected weekly.</i>
Data source location	<i>State Key Laboratory of Pharmaceutical Biotechnology, Nanjing University, Nanjing, Nanjing 210023, PR China</i>
Data accessibility	<i>The data are available with this article</i>

Value of the data

- The data reported here demonstrate the effects of magnesium isoglycyrrhizinate injection on 24-h food and water intake, and animal body weight in high fructose-fed rats.
- The data provide some reference for researchers who investigate the effects of magnesium isoglycyrrhizinate injection on rat food and water intake, and body weight.
- This data allows other researchers to extend the statistical analyses.

1. Data

This article describes 24-h food and water intake in Control-Vehicle, Fructose-Vehicle, 10, 20 and 40 mg/kg magnesium isoglycyrrhizinate- and 4 mg/kg pioglitazone-treated rats with fructose exposure after 15 weeks. Additionally, animal body weight change was described during 1–17 weeks. [Table 1](#) shows 24-h food and water intake. [Table 2](#) shows animal body weight.

2. Experimental design, materials and methods

2.1. Materials

Fructose was provided from Shandong Xiwang Sager Industry Co., Ltd. (Binzhou, China). Pioglitazone table was got from Jiangsu DeYuan Pharmaceutical Co., Ltd. (Lianyungang, China, Lot number: 150,792). Magnesium isoglycyrrhizinate injection was obtained from Chia Tai Tianqing pharmaceutical group Co., Ltd. (Nanjing, China, Lot number: 150,819,104 and 150,829,204).

2.2. Experimental design and methods

Male Sprague-Dawley rats (180–220 g) were purchased from Experimental Animal Center of Zhejiang province (Hangzhou, China) (Production license: SCXK 2014-0001). These animals were

Table 1

Assessment of magnesium isoglycyrrhizinate injection on 24-h food and water intake in fructose-fed rats.

Group	24-h food intake (g)	24-h water intake (ml)
Control + vehicle	10.7	21
	0.9	15
	2.6	15
	2.7	25
	1.6	14
	9.1	4
	7.9	13
	8.0	21
	3.2	15
	5.8	17
Fructose + vehicle	4.8	19
	0	14
	3.0	4
	1.5	13
	10.0	21
	4.7	14
	5.1	35
	4.5	15
	6.1	21
	1.2	12
Fructose + 10 mg/kg magnesium isoglycyrrhizinate	0	7
	7.2	16
	2.4	8
	0.4	9
	3.2	17
	5.9	16
	0.4	16
	0.3	22
	1.1	12
	0.8	20
Fructose + 20 mg/kg magnesium isoglycyrrhizinate	0	10
	0	7
	0.7	11
	0	13
	7.5	12
	3.8	30
	0.3	13
	0.4	8
	1.3	9
	0.5	40
Fructose + 40 mg/kg magnesium isoglycyrrhizinate	2.7	15
	0	10
	2.5	7
	0.6	8
	1.6	7
	0.8	6
	2.0	6
	6.0	11
	6.0	8
	0	7
Fructose + 4 mg/kg pioglitazone	2.9	17
	0.7	25
	2.8	6
	5.6	10

Table 2 (continued)

Time (week)	Control vehicle	Fructose + Vehicle	Fructose + Magnesium isoglycyrrhizinate Fructose + Pioglitazone (mg/kg)			
			10	20	40	4
7	338.0	361.4	340.4	406.6	367.1	366.3
			422.4	396.5	387.7	
			375.2	392.8	386.6	
	393.7	448.2	412.1	367.4	456.3	399.8
	384.0	403.4	399.2	360.2	408.7	363.8
	379.7	420.6	388.1	384.7	412.3	395.6
	398.1	381.4	403.0	370.6	468.1	360.6
	384.1	398.7	439.8	409.2	380.7	395.4
	395.4	402.8	463.9	368.6	414.7	464.1
	409.2	460.3	447.6	456.7	417.6	404.8
8	356.1	434.3	434.2	438.0	410.3	402.6
			457.6	389.0	387.2	
			353.1	434.0	441.0	
	391.2	445.9	447.0	465.3	389.5	457.4
	401.9	396.3	412.9	419.3	389.5	457.4
	391.1	449.2	428.3	385.3	379.3	416.8
	406.6	468.7	424.8	426.1	356.9	455.9
	406.6	431.8	427.0	449.0	389.1	411.7
	405.2	393.6	443.3	428.8	476.0	405.8
	427.4	422.7	483.9	410.8	418.3	484.9
9	366.1	397.8	438.7	421.1	408.2	354.3
			472.6	417.6	459.3	
			390.2	424.5	409.4	
	434.7	424.5	469.4	486.9	466.1	403.9
	444.3	492.0	455.9	435.4	437.7	521.9
	415.0	470.8	473.4	405.3	438.1	439.9
	418.4	475.4	440.4	449.1	416.0	445.1
	433.4	413.7	459.2	473.1	442.2	416.2
	391.3	420.2	431.7	445.0	437.1	463.2
	455.0	446.3	418.3	406.2	500.0	499.4
10	431.5	466.4	436.7	425.5	413.9	
			497.6	450.8	478.1	
			415.4	468.7	432.1	
	431.0	486.2	448.3	487.2	468.8	449.9
	456.9	437.2	485.6	467.7	444.9	542.8
	433.3	486.3	518.7	419.4	532.8	455.7
	452.8	504.4	497.7	460.6	436.9	520.6
	449.5	470.7	487.0	502.0	399.1	463.9
	442.2	429.1	434.1	467.5	445.7	427.3
	470.5	468.0	475.1	423.5	427.4	477.1
11	400.0	443.5	459.3	455.7	381.3	
			509.7	474.1	491.7	
			433.2	463.7	437.7	
	432.2	436.4	454.4	487.7	473.2	470.8
	465.9	492.1	494.3	462.5	454.4	447.1
	421.8	513.5	523.8	419.0	556.9	543.0
	443.6	514.0	509.8	463.9	451.9	474.8
	453.9	477.3	496.3	521.4	443.1	536.5
	446.4	427.9	464.8	481.8	474.2	424.4
	455.7	474.8	439.8	451.4	457.7	451.2
12	392.6	457.0	467.8	476.3	411.3	
			499.2	465.6	424.7	
			433.9	495.1	454.7	
	455.8	507.1	463.7	526.8	491.2	495.1
	508.5	455.9	492.3	488.6	477.9	473.6
	472.8	523.6	527.6	431.1	579.0	564.3
481.5	527.9	493.6	482.0	464.5	570.2	
476.2	508.1	495.4	513.5	458.9	502.4	
446.0	464.3	455.4	489.4	478.5	469.0	

Table 2 (continued)

Time (week)	Control vehicle	Fructose + Vehicle	Fructose + Magnesium isoglycyrrhizinate Fructsoe + Pioglitazone (mg/kg)			
			10	20	40	4
13	495.0	489.8	471.8	461.1	473.7	536.1
	422.3	463.6	475.2	492.7	454.4	
			560.9	499.9	516.9	
			443.7	461.3	469.8	
	451.7	493.5	463.9	434.7	494.6	
	510.3	472.3	501.1	484.0	471.0	
	463.1	527.6	542.4	516.8	593.6	
	481.3	553.3	515.2	515.0	468.4	
	455.3	499.6	495.1	531.7	473.4	
	480.2	446.4	463.8	502.2	504.2	
	507.6	502.3	474.3	471.0	492.0	
	425.1	465.3	473.8	516.9	472.1	
			557.9	452.5	488.7	
14			510.9	476.3	463.2	506.6
	462.5	535.7	461.4	458.3	502.4	
	529.6	476.9	523.9	508.6	477.5	
	487.3	553.3	544.9	525.6	625.4	
	478.8	576.5	543.8	535.6	492.3	
	469.1	527.0	523.8	546.1	486.3	
	500.5	472.2	482.4	518.8	531.8	
	529.7	501.3	498.9	472.5	496.4	
	437.8	465.6	508.0	532.4	504.8	
			578.5	501.3	549.8	
			519.1	457.1	473.7	
	465.7	550.0	468.8	475.2	519.2	
	15	530.4	493.8	533.9	526.4	
482.1		558.6	555.9	541.2	632.4	500.0
490.4		578.5	541.6	549.0	502.4	625.9
477.6		504.8	534.2	542.1	502.4	584.5
471.2		460.0	480.2	504.8	475.9	513.0
541.0		525.5	492.7	475.8	518.6	482.4
448.0		478.4	508.9	523.6	480.6	525.6
			572.7	452.9	479.2	
			507.4	505.6	560.0	
513.9		531.1	475.6	486.8	487.3	512.5
453.6		481.3	565.2	535.3	535.5	497.3
467.4		556.7	558.3	550.6	483.3	608.7
494.0		588.4	538.2	548.1	636.1	567.9
483.5	512.1	561.2	543.5	522.8	510.1	
465.0	454.5	485.9	531.6	509.1	510.1	
445.2	530.8	503.5	487.1	560.1	525.8	
529.1	472.4	531.0	524.0	500.0	540.2	
		588.0	449.6	502.5		
		530.4	507.6	552.4		
17	460.2	523.6	478.3	491.1	501.2	521.4
	532.4	489.4	545.4	528.0	467.8	485.6
	484.0	568.6	554.0	540.5	606.1	610.3
	509.3	597.3	545.8	536.6	513.8	572.9
	503.3	532.7	548.3	560.1	495.7	526.7
	475.8	473.0	483.2	523.9	551.2	528.8
	537.6	556.3	511.2	496.8	499.3	527.4
	450.7	481.3	519.7	553.5	504.1	
			581.2	452.1	541.5	
			524.6	478.5	478.3	

maintained at a temperature of 22 ± 2 °C and relative humidity ($55 \pm 5\%$) with a 12-h light/dark cycle. Rats were fed a standard chow and water ad libitum for the experiment and one week for acclimatization before the experiment. Each rat was given drinking water or 100 ml drinking water containing 10% fructose (weight/volume) for 6 weeks. Then these fructose-fed rats were further divided into five subgroups, receiving saline injection (by intraperitoneal injection), 10, 20 and 40 mg/kg magnesium isoglycyrrhizinate injection (by intraperitoneal injection) or 4 mg/kg pioglitazone (by intragastric administration) for additional 11 weeks ($n = 8\text{--}10/\text{group}$), respectively. At week 15, rats were removed to metabolic cages (one rat per metabolic cage) with free access to standard chow and water. 24-h food and water intake was recorded, respectively. Animal body weight was detected weekly.

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Transparency document. Supporting information

Transparency data associated with this article can be found in the online version at <https://doi.org/10.1016/j.dib.2018.03.016>.

Reference

- [1] X.J. Zhao, Y.Z. Yang, Y.J. Zheng, S.C. Wang, H.M. Gu, Y. Pan, S.J. Wang, H.J. Xu, L.D. Kong, Magnesium isoglycyrrhizinate blocks fructose-induced hepatic NF- κ B/NLRP3 inflammasome activation and lipid metabolism disorder, *Eur. J Pharmacol.* 809 (2017) 141–150.