



上机生化实验报告

一、实验器材及试剂

1、实验器材

名称	厂家	型号
立式冷藏陈列柜	星星	LSC-316C
卧式冷冻箱	美菱	BCD-318AT
电子天平	梅特勒-托利多仪器（上海）有限公司	ME203E/02
高速组织研磨仪	Servicebio	KZ-II
台式高速冷冻离心机	大龙	D3024R
电热恒温水槽	精宏	DK-8B
实验室超纯水机	艾肯水精灵	AK-RO-C2
涡旋混合器	Servicebio	MX-F
酶标检测仪	BioTeK	Epoch
全自动生化分析仪	深圳雷杜生命科技	Chemray 240
全自动生化分析仪	深圳雷杜生命科技	Chemray 420
全自动生化分析仪	深圳雷杜生命科技	Chemray 800

2、主要实验耗材

耗材	厂家	货号
1.5ml 离心管	Servicebio	EP-150-M
1000ul 移液器	大龙	KE0037273
200ul 移液器	大龙	YE3K030591
50ul 移液器	大龙	DS35110
10ul 移液器	大龙	KE0012951



二、样本的采集与保存

1. 血清样本(干冰运输)

全血标本请于室温放置 2 小时或 4℃ 过夜后于 2-8℃ 3000 转/分离心 15min, 取上清即可立即检测;或进行分装, 并将标本放于-20℃或-80℃保存, 但应避免反复冻融。解冻后的样本应再次离心, 然后检测。

2. 血浆样本(干冰运输)

可用肝素作为抗凝剂, 标本采集后 30 分钟内于 2-8℃ 3000 转/分离心 15min, 取上清即可立即检测;或进行分装, 并将标本放于-20℃或-80℃保存, 但应避免反复冻融。解冻后的样本应再次离心, 然后检测。

注: 样本应清澈透明, 悬浮物应离心去除;避免使用溶血样本。样本收集后若不立即检测, 冻存于-80℃冰箱, 避免反复冻融。样本检测时不要有气泡, 以免取样针吸到气泡以为吸入了样本。样本溶血对实验有影响。样本量要充足, 检测需要留底量(100ul 左右)。

三、试剂盒组成成分及储存条件

1. 主要组成成分: R1,R2

2. 储存条件及有效期: 原包装试剂盒在 2-8℃ 储存, 12 个月有效

四、试剂配制

单试剂法将 R1, R2 按说明书比例配制混匀或者就是单一试剂直接应用;双试剂法将 R1, R2 分别应用。

五、操作步骤

试剂盒: 雷杜/长春汇力

1. 样本接收: 血清、血浆

2. 实验步骤:

2.1 工作试剂的配制: 单试剂法将 R1, R2 按说明书比例配制混匀;双试剂法将 R1, R2 分别应用。

2.2 在全自动生化仪上设置好相应参数。



2.3 上样。全自动生化仪自动测定。

3. 实验结果：全自动生化仪检测后导出结果，结果由 EXCEL 形式发送。

六、大小鼠正常参考范围

注：血清生化指标参考值由于动物品种、来源、年龄、体重、饲养环境、营养状况、检查方法等条件的不同会存在相当大的差异。以下参考值是实验室正常大小鼠检测计算得出，仅供参考。

大 鼠	指标	肝功能					
		ALT	AST	ALB	ALP	GGT	TBA
	单位	U/L	U/L	g/L	U/L	U/L	umol/L
	范围	21.53-61.75	41.47-195.65	21.16-34.77	12.04-610.97	0.58-6.81	23.92-59.09
大 鼠	指标	肾功能			血糖	其他	
		BUN	CR	UA	GLU	TP	
	单位	mg/dL	umol/L	umol/L	mmol/L	g/L	
	范围	9.75-22.71	10.90-118.07	58.38-122.65	4.98-15.95	44.57-81.43	

小 鼠	指标	肝功能					
		ALT	AST	D-BIL	T-BIL	ALB	ALP
	单位	U/L	U/L	umol/L	umol/L	g/L	U/L
	范围	10.06-96.47	36.31-235.48	0.45-33.89	6.09-53.06	21.22-39.15	22.52-474.35
小 鼠	指标	肾功能			血糖	其他	
		BUN	CR	UA	GLU	TP	
	单位	mg/dL	umol/L	umol/L	mmol/L	g/L	
	范围	10.81-34.74	10.91-85.09	44.42-224.77	4.66-13.42	38.02-75.06	



Biochemical Test Report

1. Apparatus and Reagents

1.1 Apparatus

Equipment	Manufacturers	Model
Vertical refrigerated display cabinet	XingXing	LSC-316C
Horizontal freezer	MeiLing	BCD-318AT
Electronic balance	Mettler Toledo	ME203E/02
High speed tissue grinder	Servicebio	KZ-II
High speed refrigerated centrifuge	Dragon	D3024R
Electrothermal constant temperature water tank	Jinghong	DK-8B
Ultrapure Water Polishing System	Aiken water Elf	AK-RO-C2
Vortex mixer	Servicebio	MX-F
Enzyme label detector	BioTeK	Epoch
Automatic biochemical analyzer	Rayto	Chemray 240
Automatic biochemical analyzer	Rayto	Chemray 420
Automatic biochemical analyzer	Rayto	Chemray 800

1.2 Laboratory consumables

Equipment	Manufacturers	Model
1.5ml eppendorf tubes	Servicebio	EP-150-M
0-1000ul Adjustable-Volume Pipettor	Dragon	KE0037273
0-200ul Adjustable-Volume Pipettor	Dragon	YE3K030591
0-50ul Adjustable-Volume Pipettor	Dragon	DS35110
0-10ul Adjustable-Volume Pipettor	Dragon	KE0012951



2. Collection and preservation of samples

1. Serum samples (dry ice transport)

The blood sample should be placed at room temperature for 2 hours or 4 °C overnight, then turned at 2-8 °C 3000 RPM centrifuged for 15 minutes, and the supernatant can be detected immediately; or it should be repackaged and stored at - 20 °C or - 80 °C, but repeated freezing and thawing should be avoided. The thawed sample should be centrifuged again and tested.

2. Plasma sample (dry ice transport)

Heparin can be used as anticoagulant. Within 30 minutes after collection, the sample can be immediately detected at 2-8 °C for 3000 RPM centrifuged for 15 minutes; or it can be separately packed and stored at - 20 °C or - 80 °C, but repeated freezing and thawing should be avoided. The thawed sample should be centrifuged again and tested.

Note: the sample should be clear and transparent, and the suspension should be removed by centrifugation; hemolytic sample should be avoided. If the sample is not detected immediately after collection, it should be frozen in - 80 °C to avoid repeated freezing and thawing. There should be no bubbles in the sample during the test, so as to prevent the sampling probe from absorbing the bubbles and thinking that the sample has been inhaled. Hemolysis of the sample has an effect on the experiment. The sample size should be sufficient, and the detection needs to reserve a minimum amount (about 100ul).

3. Composition and storage conditions of kit

1. Main components: R1, R2

2. Storage conditions and validity period: the original kit is stored at 2-8 °C, valid for 12 months

4. Reagent preparation

Single reagent method is to mix R1 and R2 according to the proportion in the instruction manual or single reagent is to be used directly; double reagent method is to apply R1 and R2 respectively.

5. Operation steps

Kit: Rayto / Changchun Huili

5.1 Sample receiving: serum, plasma

5.2 Experimental steps:



5.2.1 Preparation of working reagent: prepare and mix R1 and R2 according to the proportion in the instructions by single reagent method; apply R1 and R2 respectively by double reagent method.

5.2.2 Set the corresponding parameters on the automatic biochemical instrument.

5.2.3 Sample Assay. Automatic biochemical analyzer.

5.3 Experimental results: the results are exported after the automatic biochemical analyzer is tested, and the results are sent in the form of Excel.

6. Normal reference range of rats and mice

Note: the reference value of serum biochemical index will be quite different due to the different conditions of animal breed, source, age, weight, feeding environment, nutritional status, inspection method, etc. The following reference values are calculated from the normal rat and mouse detection in the laboratory and are for reference only.

Rat	index	liver function					
		ALT	AST	ALB	ALP	GGT	TBA
	unit	U/L	U/L	g/L	U/L	U/L	umol/L
	Reference range	21.53-61.75	41.47-195.65	21.16-34.77	12.04-610.97	0.58-6.81	23.92-59.09
Rat	index	renal function			blood sugar	Other	
		BUN	CR	UA	GLU	TP	
	unit	mg/dL	umol/L	umol/L	mmol/L	g/L	
	Reference range	9.75-22.71	10.90-118.07	58.38-122.65	4.98-15.95	44.57-81.43	

Mouse	index	liver function					
		ALT	AST	D-BIL	T-BIL	ALB	ALP
	unit	U/L	U/L	umol/L	umol/L	g/L	U/L



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	Reference range	10.06-96.47	36.31-235.48	0.45-33.89	6.09-53.06	21.22-39.15	22.52-474.35
Mouse	index	renal function			blood sugar	Other	
		BUN	CR	UA	GLU	TP	
	unit	mg/dL	umol/L	umol/L	mmol/L	g/L	
	Reference range	10.81-34.74	10.91-85.09	44.42-224.77	4.66-13.42	38.02-75.06	

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