

**(For scientific research use only, not for clinical diagnosis!)**

**Human Adenosine Kinase (ADK)**

**Quantitative Detection Kit (ELISA)**

**Instructions for Use Specification:**

**96T/48T Catalog Number: SYP-H2409**

**Purpose: Used to detect human adenosine kinase (ADK) in serum, plasma, cell culture supernatant and other samples**

**concentration.**



Please read the instructions carefully before use. If you have any questions, please contact us via:

**Official hotline: 400-999-8863**

**Technical phone number: 18358180525**

**Email: UpingBio@163.com**

**Company website: [www.upingbio.com](http://www.upingbio.com) For specific shelf life, please refer to the outer packaging label of the kit. Please use the kit within the shelf life. When contacting us, please provide the product number and production date (see box label) so that we can serve you more efficiently.**



## **[Kit performance]**

**Physical properties:** Each liquid component is clear and transparent, with no sediment or floc. Microplate aluminum foil bags should be vacuum packed without damage or leakage.

**Calibration curve linearity:** The correlation coefficient  $r$  value of the calibrator dose-response curve is greater than or equal to 0.9900.

**Precision:** intra-batch variation coefficient CV% is less than 10%; inter-batch variation coefficient CV% is less than 15%. **Sensitivity:** The lowest detectable dose is less than 0.781 ng/ml.

**Recovery rate:** The recovery rate is between 85%-115%.

**Sensitivity:** This kit recognizes natural human adenosine kinase (ADK) and has no overlap with structural analogs. **Stability:** Stored at 2°C-8°C, validity period is 6 months.

**Detection range:** 3.125 ng/ml – 100 ng/ml.



## 【Experimental principle】

This kit uses a double-antibody sandwich enzyme-linked immunosorbent assay (ELISA). In the microwell enzyme plate pre-coated with anti-human adenosine kinase (ADK) antibody (solid-phase antibody), add human adenosine kinase (ADK) calibrator and sample to be tested, then add biotin-labeled antibody, and warm After incubation and sufficient washing, HRP-coupled avidin is added. After incubation and sufficient washing, unbound components are removed, and a solid-phase antibody-antigen-biotin-labeled antibody-avidin is formed on the solid surface of the microplate. Sandwich complexes of enzymes. Add TMB chromogenic solution to produce a blue product. Under the action of the stop solution, it is finally converted into yellow. The absorbance (OD value) is measured on a microplate reader at a wavelength of 450nm. The absorbance (OD value) is related to the human adenosine kinase in the sample to be tested. (ADK) concentration is positively related. By fitting the calibrator curve, the concentration of human adenosine kinase (ADK) in the sample can be calculated.





## [Kit components and storage]

Components		quantity	Main
Calibrator	High Standard	2 vial	Calibrator freeze-
Calibration solution	Reconstitution	2 vial	PBS
Calibrators & Sample Diluents	Standard & Sample Diluent	25mL	PBSTN
coated microplate	Microelisa Stripplate	96T/48T	Pre-coated solid phase
biotin antibody	Bio-Antibody	10mL	biotin antibody
HRP labeled avidin	HRP-Conjugate	10mL	HRP labeled avidin
TMB chromogenic	TMB	10mL	TMB
stop solution	Stop Solution	6mL	acidic solution
20×concentrated	20X Wash Solution	25mL	0.05%Tween20
manual	manual	1 serving	--
Ziplock bag	Ziplock bag	1	--
self-adhesive	self-adhesive	4 pieces	--

**Note: 1. Before use, please check whether the label and quantity of the reagents in the kit are consistent with the table.**

2. The test kit should be stored at 2-8°C. Expired test kits must not be used.
3. If the coated microplate is not used up in a single time, remember to seal it and store it at 2-8°C.
4. The reconstituted calibrator can only be used on the same day.

5. If the components of the kit need to be used again, please ensure that they have not been contaminated since the last use.

Website: [www.upingbio.com](http://www.upingbio.com)

Official hotline: 400-999-8863

监督电话: 18158115141

**试验所需自备试验器材 (不提供, 但可协助购买)**

- 1、标准规格酶标仪。
- 2、自动洗板机。
- 3、振荡器。
- 4、系列可调节移液器及吸头, 一次检测样品较多时, 最好用多通道移液器。

**【试剂盒限制性】**

- 1、仅供科研使用, 不得用于临床诊断。
- 2、在试剂盒标示的有效期内使用, 过期产品不得使用。
- 3、跟其他厂家的试剂盒或者组分不能混用。
- 4、使用试剂盒配套的样品稀释液。
- 5、如果样本值高于最高校准品浓度值, 请将样本适当稀释后, 再重新测定。
- 6、待测样本中存在的人抗鼠等异嗜抗体会干扰检测结果, 检测前, 请排除该因素。
- 7、通过其他方法得到的检测结果, 与本试剂盒测定结果不具有直接的可比性。



## 【注意事项】

- 1、本试剂盒仅供体外研究使用，不用于临床诊断。
- 2、试验中请穿着实验服并戴乳胶手套做好防护工作。特别是检测血液或者其他体液样品时，请按国家生物试验室安全防护条例执行。
- 3、严格按照规定的时间和温度进行温育以保证准确结果。所有试剂都必须在使用前达到室温 20-25°C。使用后立即冷藏保存试剂。
- 4、洗板不正确可能导致不准确的结果。在加入底物前确保尽量吸干孔内液体。温育过程中不要让微孔干燥掉。
- 5、消除板底残留的液体和手指印，否则影响 OD 值。
- 6、底物显色液应呈无色或很浅的颜色。
- 7、避免试剂和标本的交叉污染以免造成错误结果。
- 8、在储存和温育时避免强光直接照射。
- 9、平衡至室温后再打开密封袋以防水滴凝聚在冷板条上。
- 10、任何反应试剂不能接触漂白溶剂或漂白溶剂所散发的强烈气体。任何漂白成分都会破坏试剂盒中反应试剂的生物活性。
- 11、检测使用的酶标仪需要安装能检测 450±10nm 波长的滤光片，

光密度范围在 0-3.5 之间。建议使用时提前 15 分钟预热。

12、请勿使用其他批号或其他来源的试剂混合或替代本试剂盒中的试剂。

13、试验中所用的 EP 管和吸头均为一次性使用，严禁混用。

14、请勿使用过期的试剂。

## 【样品的准备和保存】

以下只是列出样品采集和保存的一般指南。所有样本采集保存过程中，不得使用叠氮钠做为防腐剂。样品如果不立即分析，应分装后冷冻保存，且避免反复冻融。

**细胞培养上清：**离心去除沉淀，立即分析或分装后-20℃冷冻保存。

**血清：**用干净试管收集血液，室温凝固 30 分钟，离心 2000×g 20 分钟，收集血清。立即分析或分装后-20℃冷冻保存。

**血浆：**采用肝素、柠檬酸盐或 EDTA 抗凝，抽血后 30 分钟内在 2-8℃离心 2000×g 20 分钟。为消除血小板的影响，建议在 2-8℃进一步离心 10000×g 10 分钟。立即分析或分装后-20℃冷冻保存。

**细胞裂解液：**对于贴壁细胞，去除培养液，用 PBS、生理盐水或无血

清培养液洗一遍。加入适量裂解液，用移液器吹打数下，使裂解液和细胞充分接触。通常 10 秒后，细胞就会被裂解。对于悬浮细胞，离心收集细胞，用 PBS、生理盐水或无血清培养液洗一遍。加入适量裂解液，用移液器吹打把细胞吹散，用手指轻弹以充分裂解细胞。充分裂解后，10000—14000×g 离心 3-5 分钟，取上清。立即分析或分装后-20℃冷冻保存。

**尿液：**用无菌管收集，离心 2000×g 20 分钟。仔细收集上清。如有沉淀形成，应再次离心。

## 【试剂准备】

- 1、使用前，所有的组分都要至少复温 120min，确保充分复温到室温。
- 2、浓缩洗涤液：从冰箱取出的浓缩洗涤液，会有结晶产生，这属于正常现象，水浴加热使结晶完全溶解。浓缩洗涤液与蒸馏水，按 1:20 稀释，即 1 份的浓缩洗涤液，添加 19 份的蒸馏水。

## 【校准品稀释方法】

**Steps for redissolving the calibrator:** Redissolve the calibrator with the calibrator reconstituted solution. Add all the liquid in one bottle of the calibrator reconstituted solution to the bottle of calibrator freeze-dried powder. Vortex gently to ensure thorough mixing. , the mother solution concentration of the calibrator after redissolution is 200 ng/ml , mix thoroughly before dilution.

**Calibrator mother solution dilution steps:** Let the calibrator working solution stand for 1-2 minutes before dilution, and dilute the calibrator mother solution with the calibrator & sample universal diluent. Double dilution method: Take 7 EP tubes, and Add 500  $\mu$ L calibrator & sample diluent, pipet 500  $\mu$ L from the 200 ng/ml calibrator mother solution into the first EP tube and mix to prepare a 100 ng/ml calibrator working solution. Follow this step in sequence. Pipette and mix. As shown on the following page.



Standard



200ng/ml

**Recommended dilution concentration of calibrator: It is recommended to prepare the following concentrations: 100, 50, 25, 12.5,**

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Supervision phone number:  
10150115141

6.25, 3.125, 0 ng/ml, and used as the calibrator concentration value of the fitting standard curve.

**Tip: Add the calibrator & sample universal diluent directly to the last tube as the 0 value. There is no need to draw liquid from the penultimate tube. The diluted calibrator working solution needs to be prepared and used immediately.**

## **【Operating Procedure】**

**Recommended sample dilution scheme: It is recommended that teachers conduct preliminary experiments to explore the optimal dilution ratio of samples before conducting formal experiments.**

All reagents and components should be returned to room temperature first. It is recommended to perform duplicate wells for calibrators, quality control materials and samples.

1. Prepare the working solution of various components of the kit according to the method described in the previous instructions.
2. Take out the required slats from the aluminum foil bag, seal the remaining slats in a ziplock bag and return it to the refrigerator.

3. Set up the calibrator hole, sample diluent hole, blank hole and sample hole. Add 50  $\mu$ L of calibrator of different concentrations to each of the calibrator holes. Add 50  $\mu$ L of sample diluent to the sample diluent hole. Do not add any to the blank hole. Add the test well to the sample hole. Sample 50 $\mu$ L. Except for the blank wells, add 100uL of biotin antibody to each well, cover the reaction plate with a sealing film, and incubate in a 37°C water bath or incubator in the dark for 60 minutes.

4. Uncover the sealing film, discard the liquid, pat dry on absorbent paper, fill each well with washing solution, and let it sit.

1min，甩去洗涤液，吸水纸上拍干，如此重复 5 次。若使用自动洗板机，请按洗板机操作程序进行洗板，添加浸泡 30s 的程序，可以提高检测的精度。洗板结束，加底物前，要在干净不掉屑的纸上，充分拍干反应板。

5、除空白孔外，每孔加入 HRP 标记亲和素 100uL，用封板膜盖住反应板，37°C水浴锅或恒温箱避光温育 20min。

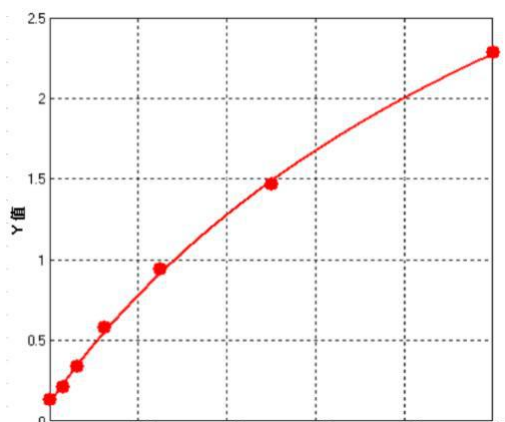
6、重复步骤 4。

7、所有孔中加入 TMB 显色液 100μL。用封板膜盖住反应板，37°C水浴锅或恒温箱避光温育 15min。

8、所有孔加入终止液 50μL，在 450nm 波长酶标仪上读取各孔吸光度（OD 值）。

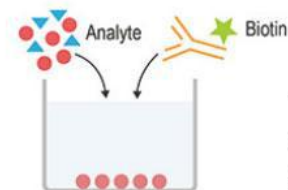
## 【结果计算】

1、以校准品浓度做为横坐标，对应的吸光度（OD 值）作为纵坐标，利用计算机软件，采用四参数 Logistic 曲线拟合（4-pl），创建标准曲线方程，通过样本的吸光度（OD 值），利用方程计算样品的浓度值。【用 ELISA Calc 软件计算】2、如果样品被稀释，通过上述方法测得的浓度值，要乘以稀释倍数，才是样品的最终浓度。



（示意图，仅供参考）

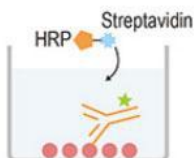
## 【操作概要】



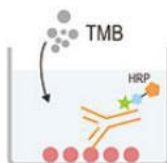
1、反应板孔中加入50uL校准品工作液或样本后,立即每孔加入100uL生物素化抗体工作液, 37°C孵育60分钟。



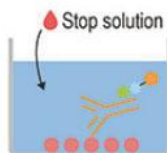
2、弃掉板内液体, 洗板5次。



3、每孔加入100uL HRP酶结合物工作液 37°C孵育20分钟, 弃掉板内液体, 洗板5次。



4、每孔加入100uL TMB显色液, 37°C孵育 15分钟。



5、每孔加入 50uL 终止液。



6、立即在 450nm波长下读数, 处理数据。

【问题分析】

问题描述	可能原因	相应对策相应对策
阴阳性对照 结果不稳定	吸液或加液不准	检查移液器及吸头
	平衡时间太短	保证充足的平衡时间
	洗涤不完全	保证洗涤时间和洗涤次数 及每孔的加液量
显色很弱或 无色	孵育时间太短	保证充足的孵育时间
	实验温度不正确	使用推荐的实验温度
	试剂体积不够或漏加	检查吸液及加液过程， 保证 所有试剂按顺序
	稀释不正确	
	酶标记物失活或底物失效	混合酶结合物和底物， 通过 迅速显色来检查
读数数值低	酶标仪设置不正确	Check the wavelength and filter settings on the
		Turn on the microplate
Large coefficient of	Adding fluid incorrectly	Check the filling
High background value	The working	Use the recommended
	Incomplete washing of enzyme plate	Ensure that each step of cleaning is complete; if using an automatic plate washer, please check
	The lotion is	Prepare new lotion
Low sensitivity	Improper storage of ELISA kits	Store relevant reagents according to instructions
	Not terminated before reading	Stop solution should be added to each well

## UpingBio technology Co.,Ltd

If the experimental results are not good, please take pictures of the color development results in time, save the experimental data, keep the strips used and unused reagents, and then contact our company's technical support to solve the problem for you.

### **【statement】**

1. Due to existing conditions and scientific and technological level, it is not possible to conduct comprehensive identification and analysis of all raw materials. This product may have certain quality and technical risks.

2. This kit removes/reduces some endogenous interfering factors in biological samples during the development process. Not all possible influencing factors have been removed.

3. The final experimental results are closely related to factors such as the effectiveness of the reagents, the relevant operations of the experimenter, and the experimental environment at the time. Our company is only responsible for the kit itself and is not responsible for the sample consumption caused by the



use of the kit. Please use The user should fully consider the possible usage of the sample and reserve sufficient samples before use.

4. In order to achieve good experimental results, please only use the reagents provided in our company's kits, do not mix products from other manufacturers, and operate in strict accordance with the instructions.

5. Due to incorrect reagent preparation and microplate reader parameter settings during the operation, abnormal results may result. Please read the instructions carefully and adjust the instrument before the experiment.

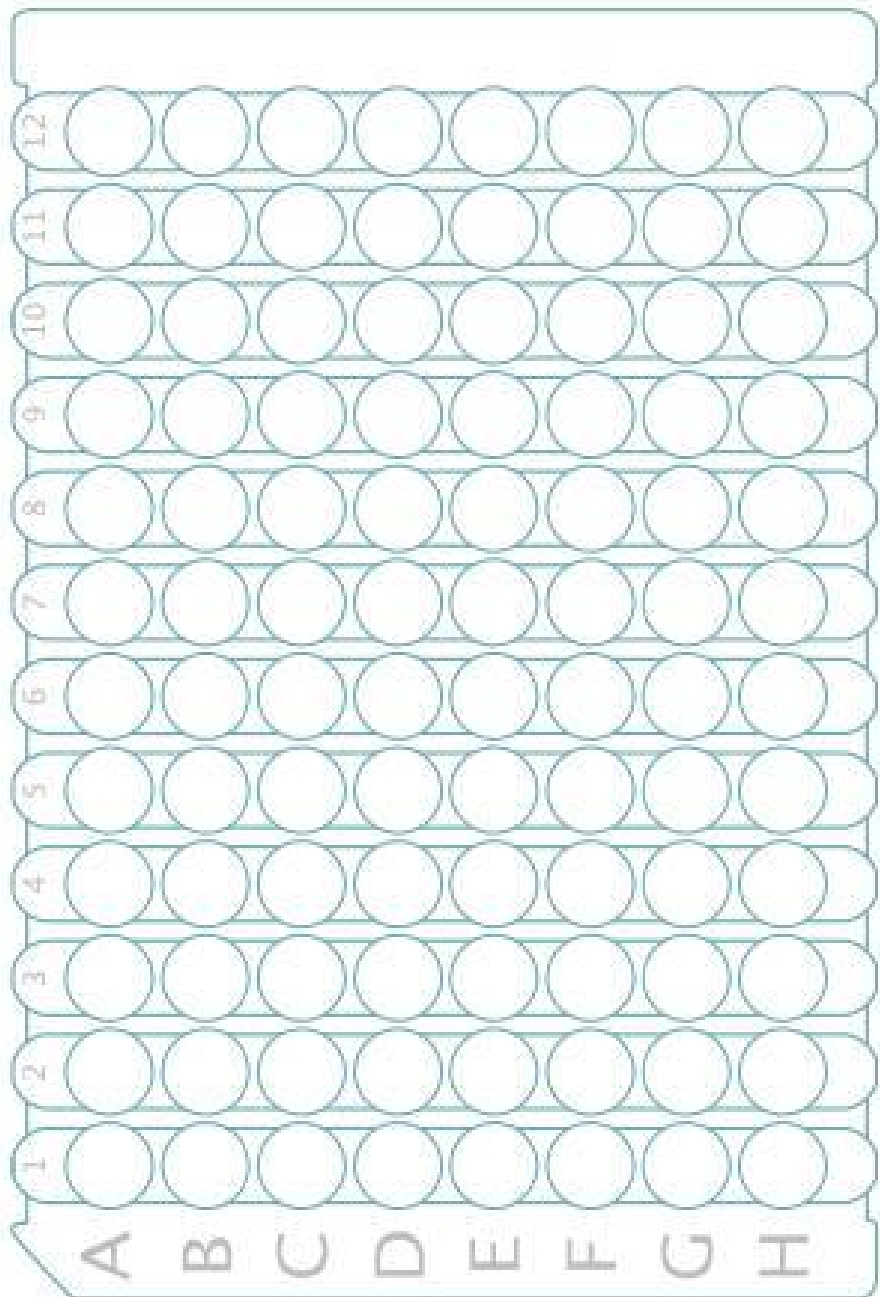
6. Even if operated by the same personnel, different results may be obtained in two independent experiments. In order to ensure the reproducibility of the results, it is necessary to control every step of the experimental process.

7. The kits will undergo strict quality inspection before shipment. However, due to factors such as transportation conditions, differences in experimental equipment, etc., user test results may be inconsistent with factory data.

8. This kit has not been compared with similar kits from other manufacturers or products using different methods to detect the same target, so inconsistent test results cannot be ruled out.

9. The kit is for research use only. If it is used for clinical diagnosis or any other purpose, our company will not be responsible for any problems arising therefrom, nor will we assume any legal liability.





## 【Experimental experience】

## 【Experimental experience】