

# OYC Biochemicals

Special issue

## HK(Y)

### Comparison of Enzymatic Properties between Native and Recombinant

OYC's recombinant HK(Y) is designed the same as native HK from yeast, which is useful as a raw material for CK/CK-MB and Glucose(Blood Sugar) assay kit for worldwide IVD manufacturers. In addition, we confirmed through our history that the recombinant features of enzymes provide more stable quality and supply according to our customers' requirements. We do hope you try our recombinant HK(Y) at this opportunity for your solution.

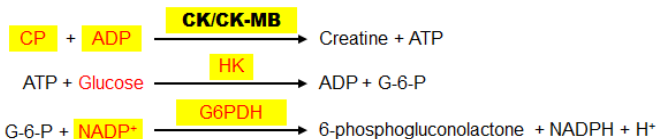


#### Application for HK

#### CK/CK-MB

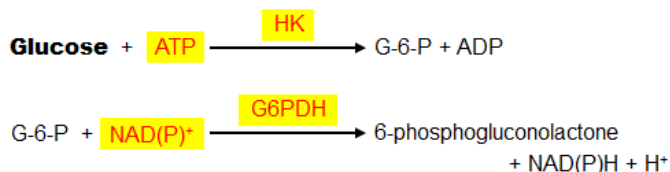
Cardiac tests  
Creatine Kinase/ Creatine Kinase-MB

(For CK-MB assay, eliminating CK-M activity by **CK-M Antibody**)



#### Glucose

Diabetes tests  
Blood Sugar



Major ingredients in the reagent are colored **red**. OYC's available product is highlighted in **yellow**.

## PRODUCT INFORMATION

**rHK(Y)** from Yeast

Product Item	Catalog No.
rHK(Y)	46763900

#### Reaction Equation



#### Product Form and Storage

Lyophilized powder  
Store below -20°C

Note: Unit definition is different for each enzyme supplier. Therefore, customers cannot handle the labeled activity values (e.g., U/mg powder) of our products and other companies' products in the same way.

- We are able to determine unit using other companies' activity measurement methods according to customers' requests and supply them.

#### Specification

Specific activity	> 180 units
Contaminants	
Phosphoglucose isomerase	< 0.003%
Glutathione reductase	< 0.005%
Myokinase	< 0.001%
Phosphogluconate dehydrogenase	< 0.001%
Phosphoglucomutase	< 0.001%
Glucose 6-phosphate dehydrogenase	< 0.005%
Creatine kinase	< 0.005%
ATPase	< 0.003%

## ENZYMATIC PROPERTIES

	Native	Recombinant
Optimum pH	pH 7.5-9.0	pH 7.5-9.0
Optimum temp.	50° C	50° C
pH stability	pH 5.0-8.0 (25° C, 1 week)	pH 5.0-8.0 (25° C, 1 week)
Thermal stability	≤40° C (pH 7.5, 10 min)	≤40° C (pH 7.5, 10 min)
Km value	1.8×10 <sup>-4</sup> mol/L (Glucose) 2.0×10 <sup>-4</sup> mol/L (ATP)	2.9×10 <sup>-4</sup> mol/L (Glucose) 1.8×10 <sup>-4</sup> mol/L (ATP)
Molecular weight	54 kDa (SDS-PAGE)	54 kDa (SDS-PAGE)

### rHK(Y)

- Enzymatic properties equivalent to native enzyme.
- Available in the same way as native enzyme.

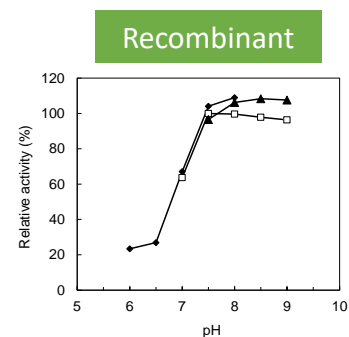
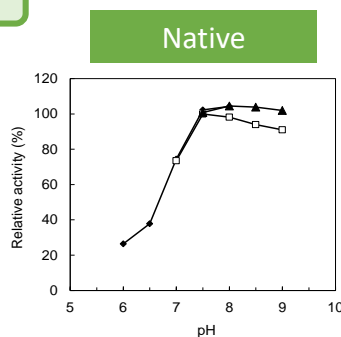


## COMPARISON DATA -HK(Y)

### pH activity

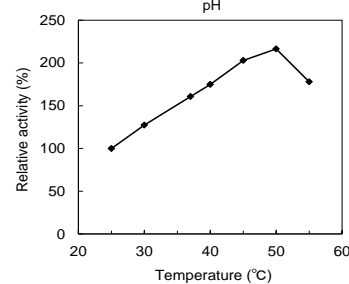
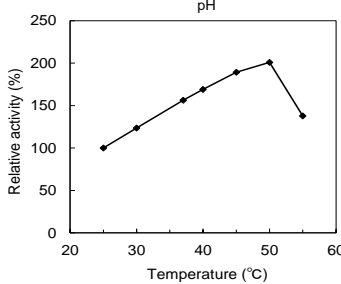
Reaction in 0.1 mol/L buffer :

- ◆ Imidazole-HCl
- TEA-HCl
- ▲ Tris-HCl



### Thermal activity

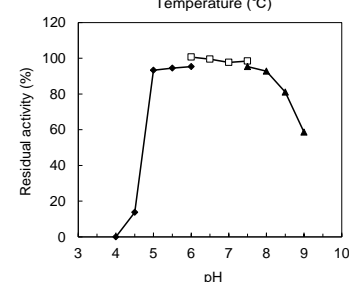
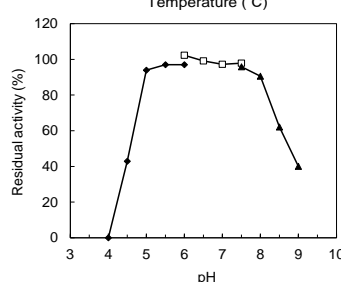
Reaction in 0.1 mol/L TEA-HCl buffer (pH7.5)



### pH stability

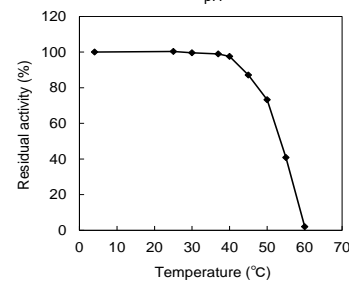
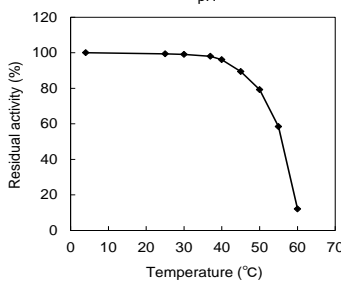
25°C, 1 week-treatment with 0.1 mol/L buffer :

- ◆ Citrate-NaOH
- Na-phosphate
- ▲ Tris-HCl



### Thermal stability

10 min-treatment with 0.1 mol/L Tris-HCl buffer (pH7.5)



OYC supports the development and manufacture of IVD reagents for our customers.



**ORIENTAL YEAST CO.,LTD.**

Please contact our sales representative or visit the following website.

<https://www.oyc.co.jp/en/inquiry/index.html>