# OYC IVD News vol. 4 – Biochemicals for CK-MB assay-

# OYC Biochemicals


## for CK-MB assay

OYC's Biochemicals are the most suitable materials for the development and manufacture of IVD reagents. All products have passed through stringent product specifications.
In addition to the raw materials (listed in published Vol. 3) for total CK reagent, here both of anti CK-M inhibiting antibody and r6PGDH are highlighted particularly for CK-MB assays. r6PGDH is an additional enzyme useful to amplify absorbance change as to meet the lowest detection limit.
Would you like to try the excellent CK-MB reagents in combination with these materials?

### Assay Principle

**CK-MB** Creatine Kinase-MB; CK MB; CPK MB — Cardiac tests

Eliminating CK-M activity by CK-M Antibody for CK-MB assay.

$$CP + ADP \xrightarrow{\text{CK-MB}} Creatine + ATP$$

$$ATP + Glucose \xrightarrow{\text{HK}} ADP + G\text{-}6\text{-}P$$

$$G\text{-}6\text{-}P + NADP^{+} \xrightarrow{\text{G6PDH}} 6\text{-phosphogluconate} + NADPH + H^{+}$$

- Eliminating AK interference from sample by adding AP5A and AMP.
- Stabilizing linearity for the assay by adding 6PGL.
- Improving sensitivity for the assay by adding 6PGDH.

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

## OYC can supply the following products in bulk size!

### OYC's PRODUCTS for CK-MB assay

Please contact us for the detailed product features.

CHECK!

Please refer to "OYC IVD News Vol. 3" for detailed information on the main raw materials of CK reagents.

- **Enzymes : rHK, rG6PDH, r6PGL**
- **Coenzymes : $NADP^{+}$**
- **Substrates : ADP, CP**

### Special Products for CK/CK-MB assays

#### r6PGDH

Properties

| Product Item | Catalog No. | pH stability (25℃, 1 week) | Thermal stability (pH 7.0, 10 min) | Optimum pH | Optimum temp. | Km value (6PG) | Km value ($NADP^{+}$) |
|---|---|---|---|---|---|---|---|
| r6PGDH(Y) | 46861903 | 5.5-6.5 | ≦ 50℃ | 6.8-7.3 | 50℃ | $7.8 \times 10^{-5}$ mol/L | $1.9 \times 10^{-5}$ mol/L |

#### AK Inhibitor

| Product Item | Catalog No. |
|---|---|
| AMP-Na | 45110900 |
| AP5A-3Li | 45305000 |

#### Antibody to CK-M subunit

| Product Item | Catalog No. |
|---|---|
| CK-MM-MCAmL(MX1)-12S | 47097900 |

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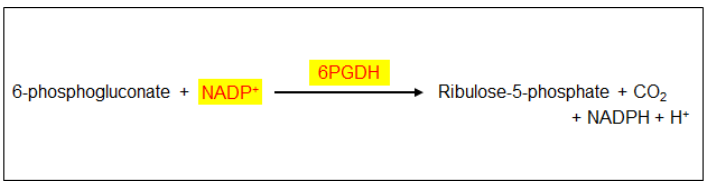
## REFERENCE DATA –r6PGDH

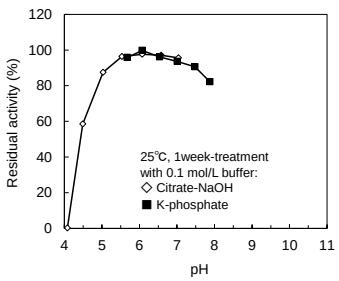
### *Reaction that improve sensitivity*

In samples with low CK-MB concentrations, the measuring signals are lower due to CK-M activity inhibition.
The addition of 6PGDH improves the sensitivity as amplifying resulted signal by two.

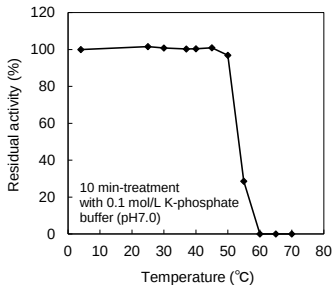



**r6PGDH (Y)**

**pH stability**



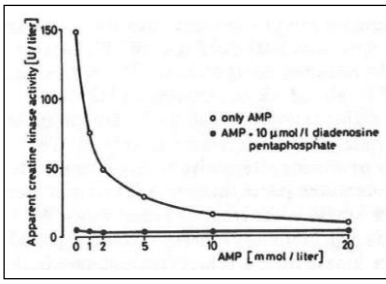

**Thermal stability**




## REFERENCE DATA –AK inhibitor

### *Eliminate AK interference*

AMP is a well-known AK inhibitor but not sufficient enough by itself. Combining AMP with AP5A together is highly recommended as described below.

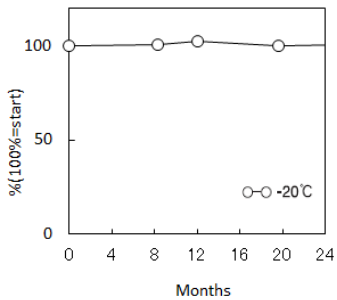



Reduction of the sample blank of a hemolyzed serum by AMP as single inhibitor (○) and by AMP with additional AP5A (10 μmol/L)(●)

CLINICAL CHEISTRY, Vol. 22, No. 11, 1806-1811(1976)

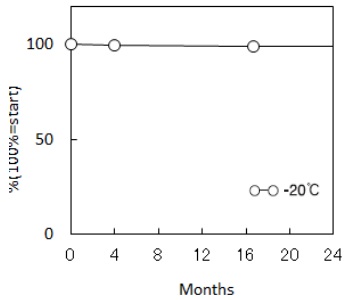
**AMP-Na**

**Long term stability**




**AP5A-3Li**

**Long term stability**




## REFERENCE DATA –Antibody to CK-M subunit

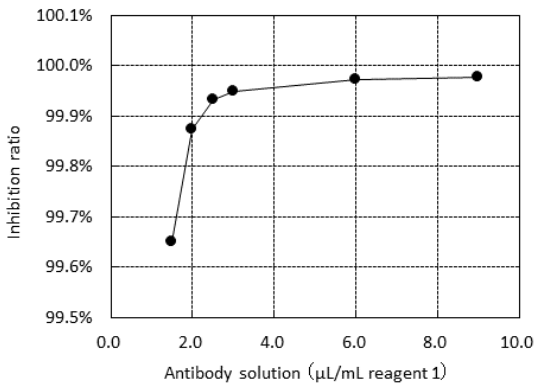
### *Eliminate CK-M activity*

CK-MM-MCA (monoclonal antibody) binds to the CK-M subunit in serum, which inhibits the activity of the M subunit.

**CK-MM-MCA**

**Inhibition ratio**

Sample:
5000 U/L rCK-MM




**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.
http://www.oyc-bio.jp/pages/info/english