

## **YK081 Rat PYY EIA Kit**

### **I. Introduction**

This enzyme immunoassay (EIA) kit is a stable and convenient assay system for peptide YY (PYY). PYY was isolated initially by Tatemoto et al. (1980) from the extract of pig duodenum and shown to be a polypeptide consisting of 36 amino acid residues. PYY is homologous to pancreatic polypeptide (PP) and neuropeptide Y (NPY). PYY is localized mainly in endocrine cells in the intestine (ileum, colon, and rectum). PYY shows an inhibitory action on contraction of the gastrointestinal tract and on secretion of pancreatic and gastric juice. PYY is released by taking diet. The PYY level decreases after resection of the intestine possibly due to the decrease in number of the endocrine cells secreting PYY.

The EIA kit is prepared by using synthetic rat PYY as standard antigen and biotinylated rat PYY as labeled antigen. The kit contains specific polyclonal antibody recognized to the amino acid sequence of rat PYY.

<b>YK081 Rat PYY EIA Kit</b>	<b>Contents</b>
The assay kit can measure rat PYY in the range of 0.14-100 ng/mL	1) Antibody coated plate
The assay completes within 16-20 hr. + 2.5 hr.	2) Rat PYY standard
With one assay kit, 40 samples can be measured in duplicate	3) Labeled antigen
Test sample: rat plasma	4) PYY antibody
Sample volume: 25 $\mu$ L	5) SA-HRP solution
The 96-well plate in kit was consisted by 8-wells strips. The kit can be used separately.	6) Substrate buffer
Precision and reproducibility	7) OPD tablet
Intra-assay CV(%) 7.95 - 12.81	8) Stopping solution
Inter-assay CV(%) 11.95 - 13.61	9) Buffer solution (concentrated)
Stability and Storage	10) Washing solution (concentrated)
Store all of the components at 2-8 .	11) Adhesive foil
6 months from the date of manufacturing.	
The expiry date is described on the label of kit.	

## II. Characteristics

This EIA kit is used for quantitative determination of rat PYY in rat plasma sample. The kit is characterized for sensitive quantification, high specificity and no influence with other components in plasma and needlessness of sample pre-treatment. PYY standard used in the kit is highly purified synthetic product (purity: higher than 98%).

### < Specificity >

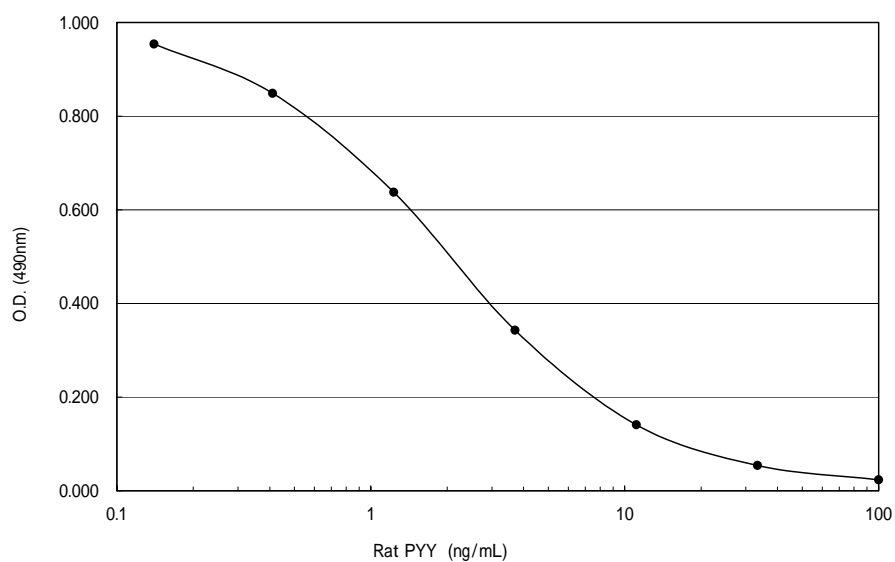
The EIA kit shows 10% cross reactivity to human PYY and less than 0.01% cross reactivity to human and rat NPY that has similar amino acid sequence with rat PYY.

### < Test Principle >

This EIA kit for determination of rat PYY in plasma sample is based on the competitive enzyme immunoassay using combination of highly specific antibody to rat PYY and biotin-avidin affinity system. The 96 wells plate is coated with goat anti rabbit IgG. PYY standard or samples, labeled antigen and anti rat PYY antibody are added to the wells for competitive immunoreaction. After incubation and plate washing, HRP labeled streptoavidin are added to form HRP labeled streptoavidin-biotinylated rat PYY-antibody complex on the surface on the wells. Finally, HRP enzyme activity is determined by o-phenylenediamine dihydrochloride (OPD) and the concentration of rat PYY is calculated.

### III. Performance Characteristics

Typical standard curve



#### Analytical recovery

< Rat plasma >

Rat PYY added (ng/mL)	Observed (ng/mL)	Expected (ng/mL)	Recovery (%)
0.00	1.09	-	-
0.25	1.30	1.34	97.01
1.00	2.42	2.09	115.79
4.00	5.51	5.09	108.25

#### Precision and reproducibility

- Intra-assay CV(%) 7.95 ~ 12.81
- Inter-assay CV(%) 11.95 ~ 13.61

#### Assay range

0.14 – 100 ng / mL

## . Stability and Storage

- < Storage >            Store all of the components at 2-8°C.
- < Shelf life >         6 months from the date of manufacturing  
                              The expiry date is described on the label of kit.
- < Package >            For 96 tests per one kit including standards

## . References

1. Adrin, T.E., Smith, H.A, Calvert, S.A., Aynsley-Green, A.and Bloom, S.R. (1986): Elevated plasma peptide YY in human neonates and infants. *Pediatric Res.*,**20**: 1225 -1227.
2. Adrian T.E., Ferri, G.L., Bacarese-Hamilton, A.J., Fuessl, H.S., Polak, J.M. and Bloom, S.R. (1995): Human distribution and release of a putative new gut hormone, peptide YY. *Gastroenterology*,**89**: 1070-1077.
3. El-Salhy, M., Grimelius, L ., Wilander, E ., Ryberg B., Terenius, L., Lundburg, J.M.and Tatemoto, K. (1983): Immunocytochemical identification of polypeptide YY(PYY) cells in the human gastrointestinal tract. *Histochemistry*, **77**:15-23.
4. Greeley, G.H.Jr., Hashimoto, T., Izukawa, M., Gomez, G., Jeng, J. Hill, F.L.C., Liuis, F.,and Tompson, J/C. (1989): A comparison of intraduodenally and intracolonicly administered nutrients on the release of peptide YY in the dog. *Endocrinology*, **125**:1761-1765.
5. Greeley, G.H.Jr., Hill, F. L. C., Spannagel, A.and Tompson, J.C. (1987): Distribution of peptide YY in gastrointestinal tract of the rat dog, and monkey. *Regul.Pept.*, **19**, 365-372.
6. Gomez, G., Zhang, T., Rajaraman, S., Thakore, K.N., Yanaihara, N., Townsendand C.M.Jr., Tompson, J.C. and Greeley, G.H.Jr. (1995): Intestinal peptide YY : ontogeny of gene expression in rat bowel and trophic action on rat and mouse bowel. *Am J.Physiol.* **268**, G71-G81.
7. Larhammar, D. (1996): Evolution of neuropeptide Y, peptide YY and pancreatic polypeptide: *Regul.Pept.*, **62**, 1-11.

### <Manufacturer>

Yanaihara Institute Inc.  
2480-1 Awakura, Fujinomiya-shi  
Shizuoka, Japan 418-0011  
TEL: +81-544-22-2771 FAX: +81-544-22-2770  
Website: <http://www.yanaihara.co.jp> E-mail: [ask@yanaihara.co.jp](mailto:ask@yanaihara.co.jp)  
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