

# p62 and phospho-p62 ELISA Kit

## CycLex<sup>®</sup> Total p62 ELISA Kit CycLex<sup>®</sup> Phospho-p62 Ser349 ELISA Kit CycLex<sup>®</sup> Phospho-p62 Ser403 ELISA Kit

### Features

- Comes with lysis buffer. Easy to prepare cell lysate!
- Useful for drug screening!
- Human and mouse cell lysate can be used.

### What is Selective autophagy?

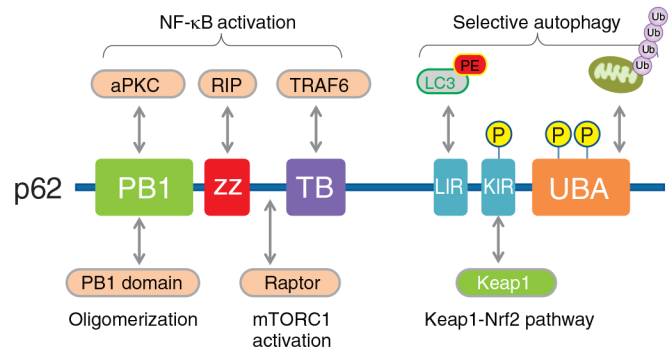
Autophagy was initially thought to be a non-selective degradation mechanism, because the entire vesicle contents were digested. However, recent findings have revealed the selective degradation of mitochondria and other specific organelles, bacteria, and aggregates of proteins with attached ubiquitin chains (polyubiquitinated proteins). This mechanism is called "selective autophagy."

### p62/SQSTM1

"Adaptor proteins" are necessary to link autophagosomes to proteins destined for selective degradation. One of these adaptor proteins is p62/SQSTM1. p62 is a scaffolding protein that interacts with various signaling molecules. p62 contains an LC3-interacting region and is believed to be a substrate for selective autophagy. In addition, p62 contains a domain that binds ubiquitin chains, and mediates the recruitment of poly ubiquitinated protein aggregates and depolarized mitochondria to the autophagic machinery.

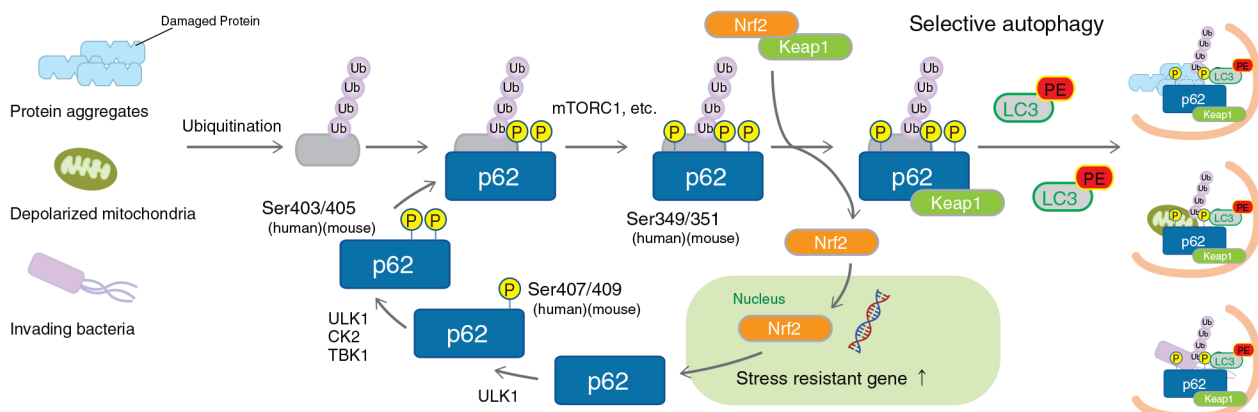
There is increasing interest about impairment of autophagic degradation in neurodegenerative diseases (such as Alzheimer's disease, Parkinson's disease, and amyotrophic lateral sclerosis), alcoholic hepatitis, hepatic steatosis, and liver cancer.

### ■ Domain structure of p62/SQSTM1



This illustration was made with the supervision of Dr. Masaaki Komatsu and Dr. Yoshinobu Ichimura (Niigata University).

### ■ p62-Keap1-Nrf2 pathway



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## Phospho-p62

p62 has several phosphorylation sites. Two biophylaxis systems described below are effectively activated by the continuous phosphorylation on these sites.

- Selective autophagy

### Removing misfolded or aggregated proteins and eliminating intracellular pathogens.

Phosphorylation of p62 at Ser407 (Human) /Ser409 (Mouse)  
Phosphorylation of p62 at Ser403 (Human) /Ser405 (Mouse)

Increases the affinity of p62 for poly ubiquitin chains.

- Nuclear translocation of Nrf2

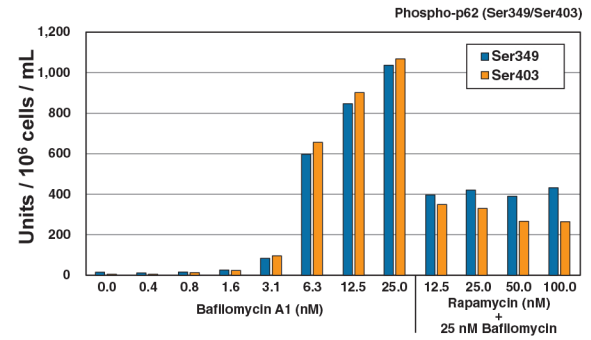
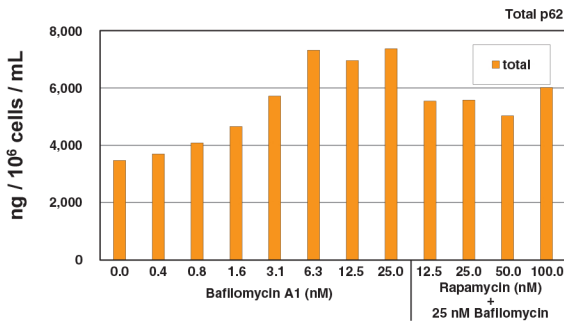
### Exacerbate the expression of stress tolerance gene.

Phosphorylation of p62 at Ser349 (Human) /Ser351 (Mouse)

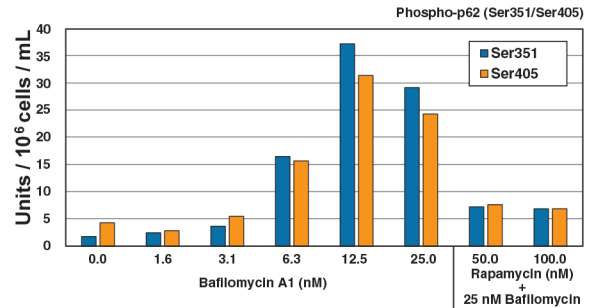
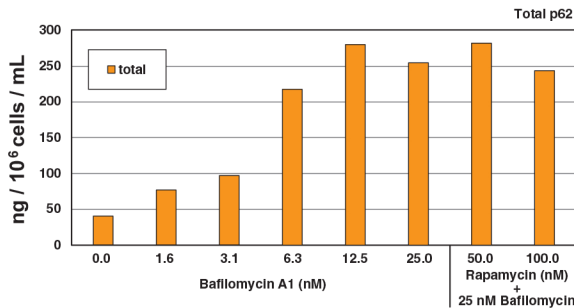
Increases the affinity of p62 for Keap1.

■ Example data of HeLa and MEF cells.

HeLa cells



MEF cells



### Related product list <Kits>

| Code No.            | Product                              | Size     |
|---------------------|--------------------------------------|----------|
| <b>NEW!</b> CY-7055 | CycLex® Total p62 ELISA Kit          | 96 Assay |
| <b>NEW!</b> CY-7056 | CycLex® Phospho-p62 Ser349 ELISA Kit | 96 Assay |
| <b>NEW!</b> CY-7057 | CycLex® Phospho-p62 Ser403 ELISA Kit | 96 Assay |

### <Antibodies>

| Code No. | Product                                       | Clone      | Isotype              | Size          | Application             | Reactivity                   |
|----------|---|------------|----------------------|---------------|-------------------------|------------------------------|
| PM045    | Anti-p62 (SQSTM1) pAb                         | Polyclonal | Rabbit Ig (aff.)     | 100 µL        | WB / IP / IC / IH       | Hu / Mo / Rat / Ham          |
| PM066    | Anti-p62 C-terminal pAb                       | Polyclonal | Guinea pig Ig (aff.) | 100 µL        | WB / IP / IC / IH       | Hu / Mo / Rat / Ham          |
| PM066-7  | Anti-p62 C-terminal pAb-HRP-Direct            | Polyclonal | Guinea pig Ig (aff.) | 50 µL         | WB                      | Hu / Mo / Rat / Ham          |
| M162-3   | Anti-p62 (SQSTM1) (Human) mAb                 | 5F2        | Mouse IgG1 κ         | 100 µg/100 µL | WB / IP / FCM / IC / IH | Hu                           |
| M162-A48 | Anti-p62 (SQSTM1) (Human) mAb-Alexa Fluor®488 | 5F2        | Mouse IgG1 κ         | 100 µg/100 µL | FCM / IC                | Hu                           |
| M162-A59 | Anti-p62 (SQSTM1) (Human) mAb-Alexa Fluor®594 | 5F2        | Mouse IgG1 κ         | 100 µg/100 µL | FCM / IC                | Hu                           |
| M162-A64 | Anti-p62 (SQSTM1) (Human) mAb-Alexa Fluor®647 | 5F2        | Mouse IgG1 κ         | 100 µg/100 µL | FCM / IC                | Hu                           |
| PM074    | Anti-Phospho-p62 (SQSTM1) (Ser351) pAb        | Polyclonal | Rabbit Ig (aff.)     | 100 µL        | WB / IP / IC / IH       | Hu / Mo                      |
| M217-3   | Anti-Phospho-p62 (SQSTM1) (Ser351) mAb        | 5D5        | Mouse IgG1 κ         | 100 µg/100 µL | WB / IC / IH            | Hu / Mo                      |
| D343-3   | Anti-Phospho-p62 (SQSTM1) (Ser403) mAb        | 4F6        | Rat IgG2a κ          | 100 µg/100 µL | WB / IH                 | Hu / Mo                      |
| D344-3   | Anti-Phospho-p62 (SQSTM1) (Ser403) mAb        | 4C8        | Rat IgG2a κ          | 100 µg/100 µL | WB / IH                 | Hu / Mo                      |
| PM069    | Anti-NRF2 pAb                                 | Polyclonal | Rabbit Ig (aff.)     | 100 µL        | WB / IP / IC / IH       | Hu / Mo(w) / Rat(w) / Ham(w) |
| M200-3   | Anti-NRF2 mAb                                 | 1F2        | Mouse IgG1 κ         | 100 µg/100 µL | WB / IP / IC / IH       | Hu / Mo / Rat / Ham          |
| M224-3   | Anti-KEAP1 mAb                                | KP1        | Mouse IgG2a κ        | 100 µg/100 µL | WB                      | Hu / Mo / Rat / Ham          |
| MK-11-3  | Anti-Ubiquitin mAb                            | 1B3        | Mouse IgG1           | 100 µg/100 µL | WB / IC* / IH* / Other* | Hu / Mo* / Bov*              |
| MK-12-3  | Anti-Ubiquitin mAb                            | 2C5        | Mouse IgG1           | 100 µg/100 µL | WB / IP* / IC*          | Hu / Mo / Rat / Bov          |
| D058-3   | Anti-Multi Ubiquitin mAb                      | FK2        | Mouse IgG1 κ         | 100 µg/100 µL | WB / IC* / ELISA*       | Hu / Mo* / Mky* / Yeast*     |

\*Application : WB: Western Blotting, IP: Immunoprecipitation, IH: Immunohistochemistry, IC: Immunocytochemistry, FCM: Flow Cytometry  
Reactivity : Hu: Human, Mo: Mouse, Ham: Hamster, Bov: Bovine, Mky: Monkey, (w): (weak)  
(aff.): affinity purified \* : The use is reported in a research article (Not tested by MBL). Please check the data sheet for detailed information.

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