



## **HIV-1 Gag p55, active as substrate of HIV-1 protease**

### **BACKGROUND**

**HIV-1 Gag p55** is a precursor protein of several proteins that form the core structure of AIDS virus, which are indispensable to their reproduction. This protein is digested by HIV-1 protease, first into intermediate products p41 and p15. Then p41 is digested into matrix protein p17 and capsid protein p24. Protein p15 is further digested into nucleocapsid protein p7, and to p6 and p1 whose functions are unknown (1).

**HIV-1 Gag p55** was over-expressed as a recombinant protein in *E. coli* with a plasmid carrying the Gag p55 coding region of HIV-1 virus, subtype B (2), and highly purified by several steps of chromatography (3). Its molecular weight is 55 kD, same as that of p55 purified from AIDS virus particles (Fig 1). The protein bands at lower positions are degradation products of p55 which could not be separated during purification steps.

### **Applications**

- 1) It is most suitable to be used as substrate for the HIV-1 protease activity assay.
- 2) It can be used in detection of anti-HIV-1 Gag antibody in Western blotting or ELISA. All the anti-HIV-1 Gag antibodies such as anti-p17 antibody, anti-p24 antibody and anti-p15 antibody can be measured at the same time.

### **Specification**

**Purity:** Over 90% by SDS-PAGE (CBB staining)

**Protein concentration:** 0.44 mg/ml as determined by BCA method.

**Form:** 20% glycerol, 20mM Tris-HCl (pH7.5), 50mM NaCl, 10mM mercaptoethanol

**Size:** 100 ug

**Storage:** -20°C (longer period,-70°C)

**Data Link** GenBank: [AAA44988.1](https://www.ncbi.nlm.nih.gov/nuccore/AAA44988.1)

### **References**

1. Freed EO "HIV-1 gag proteins: diverse functions in the virus life cycle." *Virology* **251**:1-15 (1998) PMID: [9813197](https://pubmed.ncbi.nlm.nih.gov/9813197/)
2. Adachi A *et al* "Production of acquired immunodeficiency syndrome-associated retrovirus in human and nonhuman cells transfected with an infectious molecular clone." *J Virol* **59**: 284 -291(1986) PMID: [3016298](https://pubmed.ncbi.nlm.nih.gov/3016298/)
3. Saito A *et al* "Overproduction, purification, and diagnostic use of the recombinant HIV-1 Gag proteins, the precursor protein p55 and the processed products p17, p24, and p15." *Microbiol Immunol* **39**:473-483 (1995) PMID: [8569532](https://pubmed.ncbi.nlm.nih.gov/8569532/)

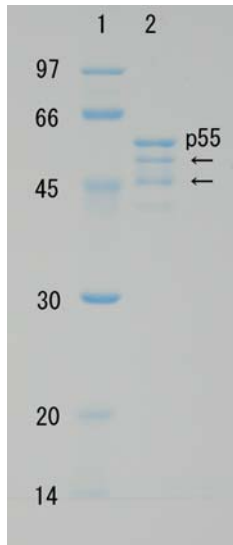


Fig.1 Polyacrylamide gel electrophoresis of HIV-1 p55 protein (The arrows show degradation products)

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Phone : +81-3-5632-9617 FAX : +81-3-5632-9618