

Procathepsin K, Rat Recombinant

CATALOG #:	1029-10	10 µg
	1029-50	50 µg
	1029-1000	1 mg
ALTERNATE NAMES:	CTSK, CTSO, CTSO3	
SOURCE:	E.Coli	
PURITY:	≥95% by SDS-PAGE and gel-filtration analyses	
MOL. WEIGHT:	35.4 kDa (16-329 aa)	
FORMULATION:	1 mg/ml solution in 25 mM Na ₂ HPO ₄ and 500 mM NaCl (pH 7.0).	

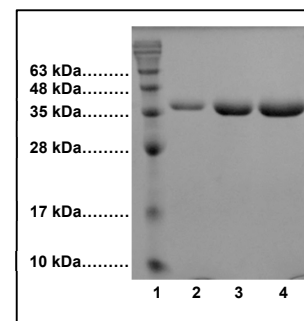
SPECIFIC ACTIVITY: The specific activity is >400 mU/mg (1U = 1 µmole/min/mg) as measured by Cathepsin K Activity Assay Kit (Catalog # K141-100)

STORAGE CONDITIONS: Stable for 1 year at -80°C. After dilution to 0.2 mg/ml, aliquot and store at -80°C. Avoid repeated freezing and thawing cycles

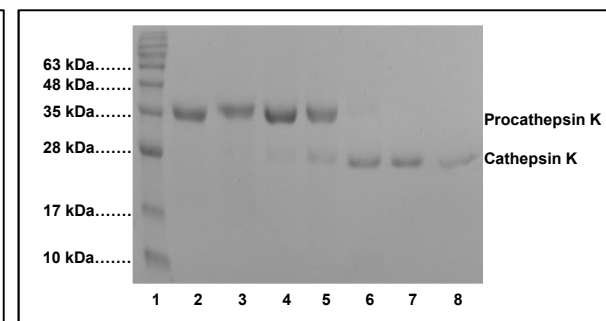
ACTIVITY ASSAY: Rat Procathepsin K can be auto-catalytically activated by adjusting the pH to 4.0 by adding an equal volume of 0.2 M NaOAc, 5 mM EDTA pH 4.0 containing fresh 25 mM DTT at room temperature (RT). The enzyme is fully activated within 12-16 h of incubation at RT. After activation mature Cathepsin K is highly auto-proteolytic at pH 4.0, and care must be taken to avoid self-proteolysis. If the activated enzyme is not used immediately, methyl methanthsulfonate (1 mM final concentration; MeS-SO₂Me; MMTS) could be added and sample should be frozen at -80°C. The activity can be restored by adding L-cysteine (3 M excess over MMTS) to the enzyme solution.

DESCRIPTION: Cathepsin K, a member of the papain cysteine proteinase family, is the predominant proteinase responsible for the resorption of the bone matrix. Cathepsin cleaves proteins such as collagen type I, collagen type II and osteonectin, thereby playing a role in bone remodeling and resorption in osteoporosis, osteolytic bone metastasis and rheumatoid arthritis (Bromme and Okamoto, 1995; Drake, F. et al 1996; Bossard et al, 1996). Cathepsin K is produced as an inactive proenzyme (35.4 kDa) that is converted to its mature active form (23.5 kDa) by proteolytic cleavage of its 99-amino-acid propeptide domain. The in-vitro processing of procathepsin K to mature cathepsin K is autocatalytic.

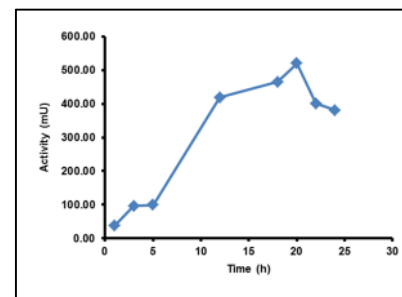
FOR RESEARCH USE ONLY! Not to be used in humans.



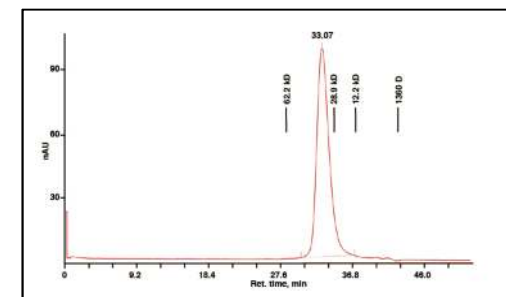
SDS-PAGE (15%) of Rat Procathepsin K:
 1: Protein Marker
 2: Rat Procathepsin K (4 µg)
 3: Rat Procathepsin K (8 µg)
 4: Rat Procathepsin K (12 µg)



SDS-PAGE (15%) of activation of Rat Procathepsin K
 1: Protein Marker
 2: Rat Procathepsin K (8 µg)
 3 to 8: Rat Procathepsin K (8 µg) after 1 h, 3 h, 5 h, 12 h, 16 h and 20 h of activation



Activation of Rat Procathepsin K as monitored by BioVision's Cathepsin K activity assay kit, Cat # K141-100.



SEC analysis of Rat Procathepsin K using a Superdex 200 HR 10/30 column at 0.5 ml/min in 50 mM Tris and 0.25 M NaCl pH 7.5.

RELATED PRODUCTS:

- Procathepsin K, mouse recombinant (Cat. No. 1027-10, 50, -1000)
- Procathepsin K, human recombinant (Cat. No. 1026-10, 50, -1000)
- Cathepsin K activity assay kit (Cat. No. K141-100)
- Cathepsin K Antibody (Cat. No. 3368-100, 3588-100)
- Cathepsin K Antibody (Cat. No. 3368BP-50, 3588BP-50)
- Cathepsin K Antibody (Cat # 3368-100)
- Cathepsin K Blocking Peptide (Cat # 3368BP-50)
- Cathepsin K Antibody (Cat # 3588-100)
- Cathepsin K Blocking Peptide (Cat # 3588BP-50)