Product Information Sheet

Product Name:	Human MMP-14, Recombinant
Catalog Number:	72068
Size:	1 μg
Concentration:	10μg/ml
Activity (Unit/μg):	Provided on the label
Unit definition:	One unit of protease hydrolyzes 1 picomole of Mca-Pro-Leu-Gly-Leu-Dap(Dnp)-Ala-Arg-NH_2 (AnaSpec, Cat#27076) per minute at pH 7.5 at 25°C.
Storage:	Store at -80°C. Avoid multiple thaw-freeze cycles.

Instruction:

Matrix metalloproteinases (MMPs) belong to a family of secreted or membrane-associated zinc endopeptidases capable of digesting extracellular matrix components.[1,2] MMP-14 (MT1-MMP), membrane-type MMP, plays an important role in tumor invasion. MMP-14 is expressed on the surface of invasive tumor cells,[3] in stromal cells of human colon, breast, and head and neck carcinomas.[4] MMP-14 is secreted as zymogen with a prodomain, a catalytic domain, a hinge region, a hemopexin-like domain, and a transmembrane domain. It can activate pro-MMP-2[3] and degrade a variety of substrates, including fibrillar collagens I, II, III, fibronectin, vitronectin and laminin-1.[5,6]

A truncated human MMP-14 with His-tag was expressed in *E. coli*. The *Mr* on SDS-PAGE is 31-kDa. Incubation with 1 mM APMA at 37°C for 2 hr will activate MMP-14. Its activity can be measured by FRET peptides (AnaSpec Cat#72025). 10-20 ng of enzyme is sufficient for FRET-based assay.

MMP-14 is stored in 50 mM Tris-HCl, pH 7.5, 150 mM NaCl, 10 mM $CaCl_2$, 1 mg/mL BSA. The purity is >95% as estimated on SDS PAGE.

References

1. Woessner, JF.Jr. and CJ. Taplin, *J. Biol. Chem.* **263**, 16918 (1988).
2. Woessner, JF.Jr. *FASEB J.* **5**, 2145 (1991).
3. Sato, H. et al. *Nature* **370**, 61 (1994).
4. A. Okada, A. et al., *PNAS* **92**, 2730 (1995).
5. Pei, D. and SJ. Weiss *J. Biol. Chem.* **271**, 9135 (1996).
6. Knight, CG. et al. *FEBS Lett.* **296**, 263 (1992).