

## Product datasheet



AKA01  
**LKM-1**  
**Recombinant Antigen**

<b>Product name</b>	LKM-1
<b>Description</b>	Purified truncated human protein
<b>Source material</b>	Sf21 insect cells
<b>Purity</b>	>90% pure (by Coomassie SDS-PAGE)

### Antigen overview

Liver/kidney microsomal antigen type 1 (LKM-1) is an important diagnostic marker for autoimmune hepatitis, specifically for autoimmune hepatitis type 2 (AIH2) [1, 2]. AIH2 is an autoimmune disease that mostly affects young people and children. It is rarer than type 1 autoimmune hepatitis (AIH1) and regarded as the more severe form of AIH [3].

While AIH1 is characterized by anti-nuclear (ANA) and anti-smooth muscle (ASMA) antibodies, AIH2 is defined by the presence of LKM-1 as well as anti-liver cytosol type 1 (LC1) autoantibodies or in some cases only anti-LC-1 autoantibodies [4]. LKM-1 antibodies may also be present occasionally in patients with chronic hepatitis C, but evidence suggests they target different epitopes on the antigen [5].

The antigenic target of anti-LKM-1 autoantibodies has been identified as Cytochrome P450 2D6 (CYP2D6), a mono oxygenase and member of the cytochrome P450 superfamily of enzymes [6]. This enzyme plays another significant role in the medical field

due to its involvement in the metabolism of about 25% of frequently prescribed pharmaceuticals, as well as steroids and other xenobiotic substances [7].

CYP2D6 is a membrane anchored, heme containing enzyme with a characteristic P450 fold. The membrane spanning region is located on the N-terminus, the epitopes and the immunodominant region are located in the C-terminal region of the protein [5, 6, 8-10].

AROTEC LKM-1 is a truncated, soluble form of the human Cytochrome P450 2D6 enzyme, lacking the short 22-amino-acid N-terminal transmembrane domain. The large soluble P450 domain contains a heme cofactor and gives the antigen its characteristic pale pink color. LKM-1 is produced in insect cells using the Baculovirus expression system.

### Storage conditions & handling

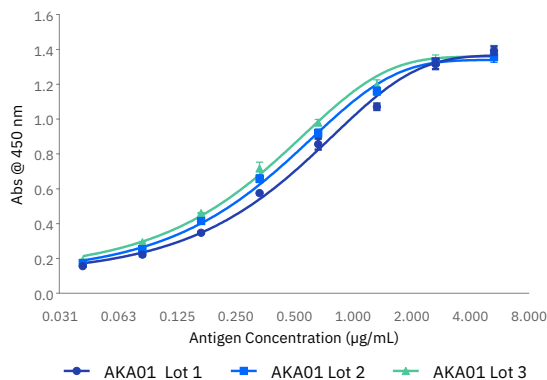
- Store at -65°C or below
- Avoid repeated freezing and thawing
- Storage buffer contains 20% Glycerol as cryoprotectant
- Mix gently before use and keep on ice

### Ordering information

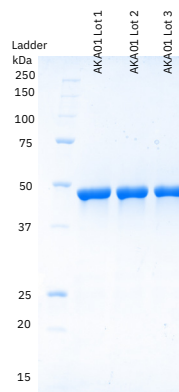
AKA01-02 - LKM-1 antigen (recombinant) - 0.20 mg  
AKA01-10 - LKM-1 antigen (recombinant) - 1.0 mg  
Custom vial sizes available on request

### Product profile

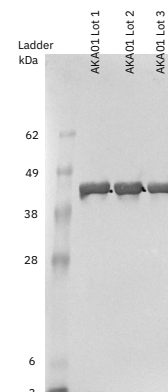
**Fig 1** AROTEC LKM-1 Antigen Titration



**Fig 2**



**Fig 3**



**Fig.1.** ELISA titration assay of AKA01 LKM-1 antigen using patient serum (1:100 dilution)

**Fig.2.** SDS-PAGE of AKA01 LKM-1 antigen; All lanes loaded with 2 µg protein; Coomassie stained

**Fig.3.** Western Blot of AKA01 LKM-1 antigen using anti-LKM-1 patient serum as primary antibody (1:300); All lanes loaded with 2 µg protein

### References

1. Czaja AJ, Manns MP, Homburger HA. Gastroenterology. Oct 1992;103(4):1290-5. doi:10.1016/0016-5085(92)91518-9
2. Alvarez F, Berg PA, Bianchi FB, et al. Journal of Hepatology. 1999;31(5):929-938. doi:10.1016/S0168-8278(99)80297-9
3. Himoto T, Nishioka M. Auto Immun Highlights. Aug 2013;4(2):39-53. doi:10.1007/s13317-013-0046-7
4. Czaja AJ, Homburger HA. Gastroenterology. Jan 2001;120(1):239-49. doi:10.1053/gast.2001.20223
5. Ma Y, Thomas MG, Okamoto M, et al. The Journal of Immunology. 2002;169(1):277-285. doi:10.4049/jimmunol.169.1.277
6. Manns MP, Griffin KJ, Sullivan KF, Johnson EF. J Clin Invest. Oct 1991;88(4):1370-8. doi:10.1172/jci115443
7. Bertz RJ, Granneman GR. Clinical Pharmacokinetics. 1997/03/01 1997;32(3):210-258. doi:10.2165/00003088-199732030-00004
8. Gueguen M, Boniface O, Bernard O, Clerc F, Cartwright T, Alvarez F. J. Autoimmun. Aug 1991;4(4):607-15. doi:10.1016/0896-8411(91)90180-k
9. Guengerich FP. Chem Res Toxicol. Jun 2001;14(6):611-50. doi:10.1021/tx0002583
10. Rowland P, Blaney FE, Smyth MG, et al. 2D6. J Biol Chem. Mar 17 2006;281(11):7614-22. doi:10.1074/jbc.M511232200