Autoantibodies against LKM 1, LC 1 and SLA/LP

Cytochrome P450 2D6 is a member of a complex family of monooxygenases, which localizes to the endoplasmic reticulum (ER) and is involved in the detoxification of xenobiotic compounds. It is the molecular target of autoantibodies against the so-called "liver-kidney microsomal antigen 1" (LKM 1) that has been classically defined by its presence in the microsomal membrane and association with the rough ER in immunofluorescence microscopy. The presence of these autoantibodies has been reported by the International Autoimmune Hepatitis Group to be a characteristic of autoimmune hepatitis (AIH) type 2. Recombinant LKM 1 has enabled the establishment of immunoassays for a better analysis of the autoantibodies, which are reported to be potentially mixed up with anti-mitochondrial autoantibodies (AMA) in indirect immunofluorescence (IIF). In addition, this recombinant antigen allows the differentiation of cytochrome P450 2D6/LKM 1 autoantibodies from autoantibodies against other monooxygenases of the P450 family, which is not possible in IIF.

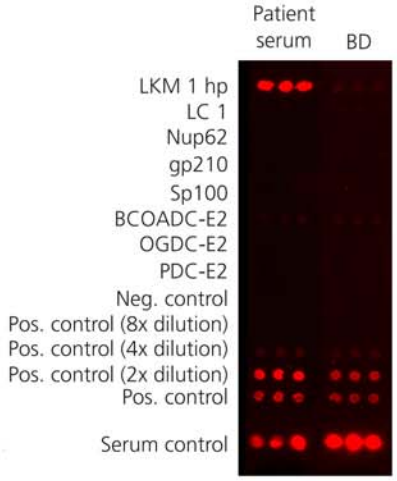

Figure 1: Immunodot analysis of serum from a blood donor (BD) and a patient serum (PS). Besides recombinant LKM 1 hp and LC 1, the following antigens of anti-mitochondrial autoantibodies (AMA) were included in the analysis: Nup62, gp210, Sp100, BCOADC-E2, OGDC-E2, PDC-E2. Controls are displayed in the two bottom lines.

Ordering Information		
19800	Cytochrome P450 2D6 (LKM 1 hp)	0.1 mg
19801		1.0 mg
13700	Formiminotransferase	0.1 mg
13701	Cyclodeaminase (LC1)	1.0 mg
30800	SLA/LP NEW!	0.1 mg
30801		1.0 mg

Formiminotransferase cyclodeaminase is a bifunctional enzyme, which is involved in the metabolism of both histidine and the vitamine folate. Folate and its derivates are required for the synthesis of DNA, RNA, and amino acids. Formiminotransferase cyclodeaminase is the antigen of liver cytosol antigen type 1 (LC 1) autoantibodies which are reported to be present in approximately 30% of AIH type 2 patients and to occur together with LKM 1 autoantibodies. Although LC 1 autoantibodies give rise to a characteristic pattern in IIF, this pattern may be masked by concurrent LKM 1 autoantibodies. Therefore, using recombinant LC 1 in immunological assays may help to solve this limitation. Intriguingly, in approximately 10% of the patients, autoantibodies against LC 1 are reported to represent the only serological marker for AIH type 2.

Cytosolic soluble liver antigen / liver pancreas antigen is (SLA/LP) specifically detected in about 20% of the AIH patients. Target of anti-SLA/LP is an about 50 kDa UGA serine tRNA-associated protein complex ($tRNA^{(Ser)\ Sec}$). A high specificity and frequency (47.5%) of the anti-$tRNP^{(Ser)\ Sec}$ autoantibodies for severe forms of type 1 AIH has been shown.

DIARECT's AIH specific antigens are produced in either *E. coli* or the baculovirus/insect cell expression system.

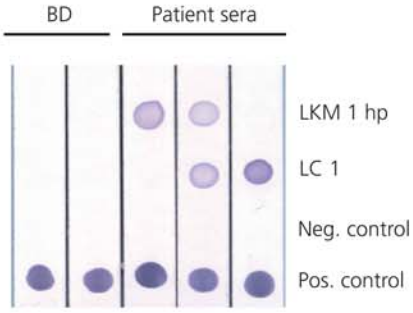

Figure 2: Immunodot analyses of sera from blood donors (BD) and patient sera using recombinant LKM 1 hp and LC 1. Positive and negative controls are spotted in the two bottom lines.

References:
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