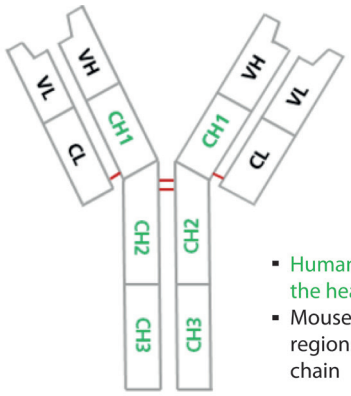
Human Chimeric Antibodies - Liver Diseases

The detection of antibodies in patient samples requires reference material to determine cut-off values and test assay integrity. Most often this reference material consists of pools of disease state serum or plasma, but main drawbacks of these standards are their limited availability and variability, and there are also safety and ethical issues. What is required is a virtually unlimited supply of antibodies with a consistent concentration, specificity and avidity.

Chimeric monoclonal antibodies are produced in transgenic mouse strains in which the sequence for the mouse IgG1 Fc region is substituted with the human sequence. After mouse immunization and hybridoma technology, antibodies are generated that retain a human constant region required for recognition by the anti-human conjugate (Cogné *et al.* 2013). These monoclonal antibodies can then be produced using standard cell culture technologies.



- Human constant region of the heavy chain
- Mouse constant and variable regions of heavy and light chain

Two types of autoimmune hepatitis (AIH) have been classified, type 1 and type 2. Detection of cytochrome P450 2D6 autoantibodies against the so-called "liver-kidney microsomal antigen 1" (LKM 1) have been reported to be a characteristic for diagnosis of AIH type 2. Formiminotransferase cyclodeaminase or liver cytosol antigen type 1 (LC 1) autoantibodies were shown to represent the only serological marker for AIH type 2 in approximately 10% of the patients (Bogdanos *et al.* 2008).

Ordering Information

36400	LKM1 humAb IgG		0.1 mg
36401			1.0 mg
37100	LC1 humAb IgG		0.1 mg
37101			1.0 mg
36200	SLA/LP humAb IgG	NEW!	0.1 mg
36201			1.0 mg
37200	PDC-E2 humAb IgG		0.1 mg
37201			1.0 mg
37000	Sp100 humAb IgG		0.1 mg
37001			1.0 mg

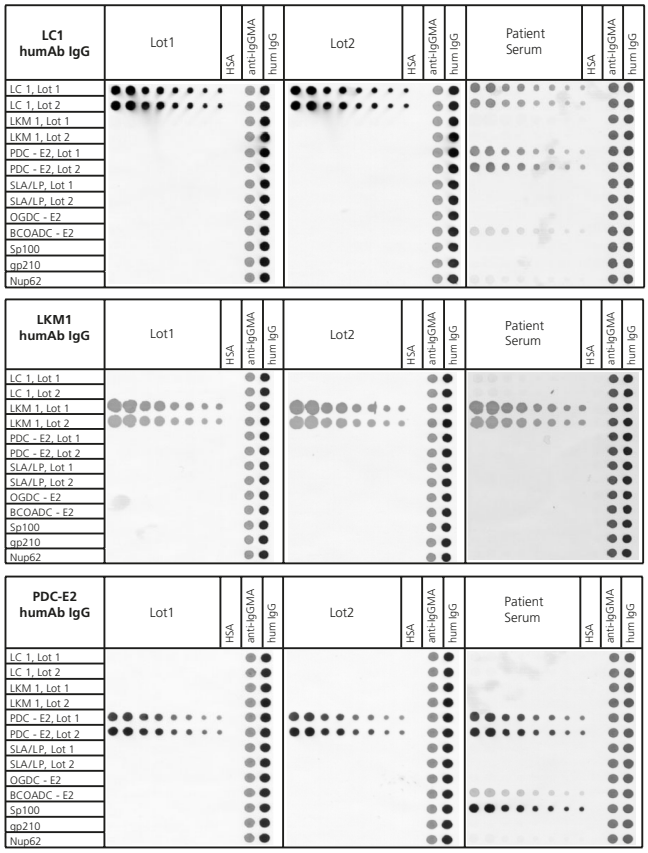


Figure: Immunodot analysis using anti-SLA/LP, anti-LKM1 and anti-PDC-E2 human chimeric IgG antibodies and patient samples, showing reactivity with the recombinant liver antigens SLA/LP, LKM1 and PDC-E2. Proteins and controls were printed on nitrocellulose membranes as indicated.

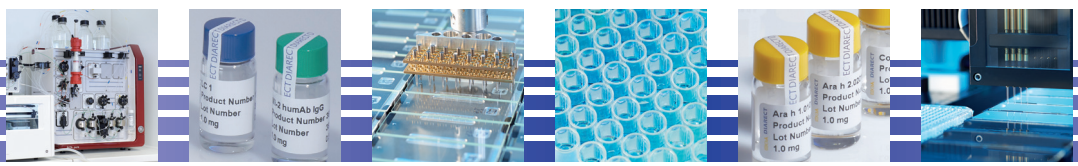
Detection of SLA/LP autoantibodies indicate a more severe progression of both types of the disease (Costa *et al.* 2000).

Serological diagnosis of primary biliary cirrhosis (PBC) involves detection of M2 autoantibodies, found in approximately 95% of the patients. Apart from subunits of other mitochondrial complexes the M2 antigen contains mainly the E2-subunit of pyruvate dehydrogenase complex: PDC-E2. It has been shown that up to 98% of M2 positive patient samples react with PDC-E2. Additional PBC specific antibodies are directed against Sp100 and found in approximately 25% of the patients (Oertelt *et al.* 2007).

DIARECT provides human chimeric monoclonal antibodies as standards or positive control reagents in IVD kits for the antigens described.

References:
Bogdanos *et al.* (2008) World J Gastroenterol. 14 (21): 3374-3387
Cogné *et al.* (2013) European Patent. N°13305964.2
Costa *et al.* (2000) Clin Exp Immunol. 121 (2): 364-374
Invernizzi *et al.* (2008) World J Gastroenterol. 14 (21): 3290-3291
Oertelt *et al.* (2007) Hepatology. 45 (3): 659-665

191115_Rev07



DIARECT AG · Bötzinger Str. 29 B · 79111 Freiburg · Germany
Tel. +49 761 47979-0 · Fax +49 761 47979-29 · orders@diarect.com · www.diarect.com