



Anti-Leucyl-tRNA synthetase autoantibodies

Indications

- ▶ Academic issues, at the moment there do not exist medical indications.

See also

- ▶ [Anti-Isoleucyl-tRNA synthetase autoantibodies](#)

Prevalence

Aminoacyl-tRNA synthetases can assemble with each other and with other proteins forming macromolecular complexes. In mammalian cells nine of these tRNA synthetases (arginyl-, asparaginyl-, glutaminy-, α -glutaminy-, isoleucyl-, leucyl-, lysyl-, methionyl- and prolyl-tRNA synthetase) associate with three protein factors (AIMP/p18, AIMP2/p38, and AIMP1/p43) to form a large multi-aminoacyl-tRNA synthetase complex (Quevillon und Mirande 1996; Ibba and Soll 2000; Kim et al. 2013). In four of 11 patients harboring precipitating antibodies against isoleucyl-tRNA synthetase also antibodies against leucyl-tRNA synthetase (EC 6.1.1.4; M_r 134,5 kDa; chromosome 5q32) were detected, which were able to inhibit the catalytic activity of the enzyme but did not precipitate the tRNA (Targoff et al. 1993). Up to now there exist no additional references pertaining these antibodies, their solitary existence in patients with idiopathic inflammatory myopathy was not recorded.

Literature

Ibba M, Soll D: Aminoacyl-tRNA synthesis. *Annu Rev Biochem* (2000); 69:617 - 650 (PMID: [10966471](#)).

Kim JH, Han JM, Kim S: Protein-Protein Interactions and Multi-component Complexes of Aminoacyl-tRNA Synthetases. *Top Curr Chem* (2013); 479 (PMID: [24072587](#)).

Quevillon S, Mirande M: The p18 component of the multisynthetase complex shares a protein motif with the beta and gamma subunits of eukaryotic elongation factor 1. *FEBS Lett* (1996); 395:63 - 67 (PMID: [8849690](#)).

Targoff IN, Trieu EP, Miller FW: Reaction of anti-OJ autoantibodies with components of the multi-enzyme complex of aminoacyl-tRNA synthetases in addition to isoleucyl-tRNA synthetase. *J Clin Invest* (1993); 91(6): 2.556 - 2.564 (PMID: [8514867](#)).