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Anti-OJ Antibodies

Firstly reported in 1990, concurrently with anti-EJ autoantibodies, by immunoprecipitation and aminoacylation inhibition experiments.

Family: Part of the **anti-aminoacyl-tRNA synthetases** (anti-ARS) group.

Target antigen: multi-enzyme synthetase complexes (9 synthetases and 3 non-catalytic components) among which

- isoleucyl-tRNA synthetase (IARS) : major target
- lysyl-tRNA synthetase (KARS)

-Prevalence in patients with idiopathic inflammatory myopathies (IIMs) < 5%

-Even though it seems highly specific of **antisynthetase syndrome (ASS)**, it is not included in the last ACR/EULAR 2017 classification criteria.

-**Interstitial lung disease (ILD)** is usually :

- usually present on the onset of the disease
- often appearing as the **sole manifestation** rather than myositis or Raynaud phenomenon (RP).



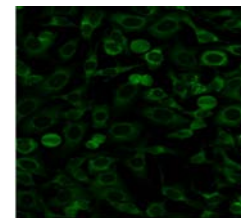
-Anti-OJ myopathy is associated with

- **more severe forms of myositis** compared to other anti-ARS myopathies.
- **good response to glucocorticoid therapy**

-Few cases of malignancies have been reported but due to their rarity it remains difficult to assess a possible association with cancer.

IIF pattern on HEp-2 cells: No specific cytoplasmic staining pattern has yet been defined.

Cytoplasmic or negative staining on IIF does not exclude MSAs such as anti-OJ
⇒ **IIF alone is not adequate for screening patients with possible anti-OJ or other anti-ARSs**



Line/dot blot immunoassays has poor sensitivity although the specificity of the assay (100%) vs IP, which remains the preferred detection method.

-**Cannot be detected by immunoblotting** (false negative rate of 100%).
-Dot immunoblot assays (DIA) and enzyme linked immunosorbent assays (ELISA) are poorly applicable ⇒ **high false negative rate.**

The current **gold-standard** technique for identifying anti-ARS antibodies is **immunoprecipitation (IP)** using **radiolabeled protein or RNA molecule.**

⇒ **IP must be performed if anti-OJ syndrome is highly suspected with negative testing results by ELISA/LIA/DIA.**

