

## Progress in chemokine-like factor 1, a novel cytokine, research over the past 10 years

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Chemokine-like factor 1 (CKLF1) is a novel cytokine and recombinant CKLF1 has chemotactic activity on leukocytes, and stimulates the proliferation of murine skeletal muscle cells. Administration of CKLF1 in mice caused dramatic pathological changes in the lungs, including peribronchial leukocyte infiltration, epithelial shedding, collagen deposition, and proliferation of bronchial smooth muscle cells. Expression of CKLF1 immunoreactivity in bronchial mucosa was found to be higher in an asthmatic group than in control. A CKLF1-specific monoclonal antibody was generated using an intramuscular injection of pCDI-CKLF1 followed by electroporation *in vivo*. CCR4 is a functional receptor for CKLF1, which was confirmed using a calcium flux assays, and receptor internalization. Two peptides from secreted CKLF1 in cell supernatants were obtained when recombinant CKLF1 was stably expressed in *Drosophila* S2 cells, termed CKLF1-C27 (C27) and CKLF1-C19 (C19). C27 and C19 had the same effect through CCR4 as the recombinant CKLF1 protein. Chemically synthesized C19 peptide was injected intraperitoneally to inhibit allergic inflammation associated with asthma in mice, resulting in a significant reduction in AHR, airway eosinophilia, and the number of lymphocytes in BALF.

In 2001, CKLF1 was the first chemotactic cytokine to be cloned by Chinese researchers in Chinese laboratories. In 2011, the CKLF1-C19 peptide's effects against allergic inflammation were reported. During the 10 years, researchers in the fields of immunology, respiratory disease, and pharmacy collaborated with one another and successfully carried out a series of experiments, from the cloning of CKLF1 to intervention against allergic airway inflammation.

### Biography

Yaxia Tan has completed her Ph.D. from Peking University Health Science Center in China and postdoctoral studies from UT Southwestern medical center at Dallas in the USA. As a Professor of The State Key Laboratory of Respiratory Disease, First Affiliated Hospital, Guangzhou medical College in China, she specializes in research, teaching and clinical care of the respiratory diseases. She has published many papers and is serving as an editorial board member of reputed journals in China.

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