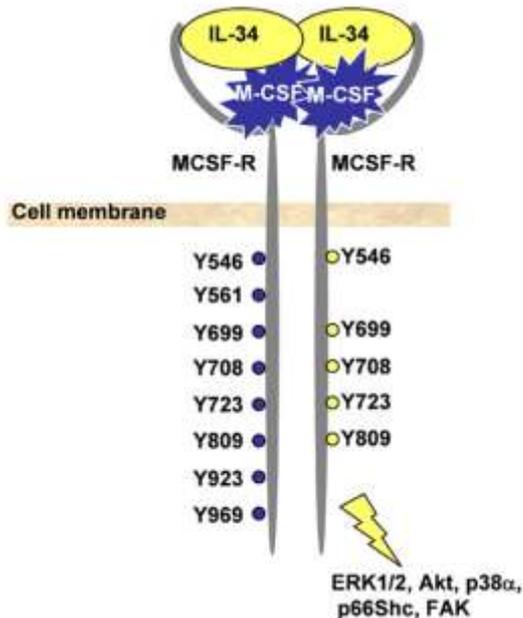


Interleukin IL-34: from Preclinical to Clinical development

A RD Biotech/SynAbs synergetic case study



Interleukin-34 is a cytokine of 213 amino-acid activating macrophages. Our partner wished to develop an anti human IL-34 and evaluate its therapeutic effect in inflammatory processes. In this context, RD Biotech company has been able to develop a specific mouse monoclonal antibody to human IL- 34.

Tested in vitro, some of these antibodies have shown interesting inhibitory effects, but before starting the in vivo human trials, our partner wanted to develop in vivo tests in mice. In this context, SynAbs has used its unique know-how to develop rat monoclonal antibodies anti mouse IL-34. This approach was really tricky as the sequence homology between IL-34 mouse and the one of the rat is more than 96 % !

After three intraperitoneal immunizations with IL-34 recombinant mouse, 100 million splenocytes of LOU rat were merged with SynAbs IR983 F proprietary myeloma. After an appropriate selection in HAT medium, 400 clones were screened by ELISA.

Despite the high sequence homology that existed between the rat and mouse, 11 monoclonal antibodies anti rat anti mouse IL-34 were obtained !

These clones have been evaluated in vitro and one IgG1 kappa « LO-M IL-34 » has demonstrated inhibitory properties similar to mouse anti human IL-34.

To enable its prolonged in vivo use in mice and alleviating the risk to be rapidly neutralized by anti rat mouse antibodies, the variable sequences of the LO-MIL-34 were subcloned by RD Biotech in an expression vector comprising mouse constant regions to obtain a new version of LO-M IL34 chimerized mouse. After production in CHO cells, chimerised LO-MIL-34 was then reassessed by our partner and showed inhibitory property identical to LO-MIL-34.

Mouse anti human IL- 34 antibody will be soon humanized by RD Biotech in order to start evaluation in humans !