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Development of IMU-838, an orally available and selective small molecule inhibitor for the treatment of chronic inflammatory and autoimmune diseases

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IMU-838 is an orally available small molecule inhibitor of Dihydroorotate Dehydrogenase (DHODH). It is currently in placebo-controlled phase 2 clinical testing in patients suffering from ulcerative colitis. Further clinical trials are planned in Crohn's disease and Multiple Sclerosis. DHODH is the key enzyme for de novo pyrimidine synthesis. Activation of DHODH ensures immediate and increased nucleotide supply for RNA and DNA synthesis, when the salvage pathway for pyrimidine synthesis is not sufficient. Pyrimidine de novo synthesis and DHODH activity is only important in metabolically activated cells, e.g. autoreactive immune cells. Therefore, this small molecule inhibitor targeting DHODH is per se selective on overreacting immune cells but is not immunosuppressive in general. This is a huge advantage for the long-term treatment of chronic inflammatory diseases like Multiple Sclerosis and inflammatory bowel diseases. Treatment with immunosuppressive drugs often causes reactivation of latent viruses leading to serious infections and with sometimes even lethal outcome. With IMU-838, Immunic Therapeutics develops a potent and safe oral drug with a unique mode of action for the treatment of chronic inflammatory diseases.

Biography

Hella Kohlhof is the CSO and Co-founder of Immunic AG. She studied biology in Aachen, Gothenborg (Sweden) and Munich and received her Doctorate in Biology from the LMU in Munich (Germany). During her Ph.D. and PostDoc at the Helmholtz Centre in Munich, she worked in the field of immunology and oncology. In 2008 she joined 4SC AG as group leader for translational pharmacology. From 2011 on, Hella was responsible for the management and development of one epigenetic clinical stage small molecule inhibitor and from 2015 on, as Director Development Projects, responsible for the complete development portfolio of 4SC AG.

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