

# DMBT-1 for the treatment of Crohn's disease

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## Challenge

Tiredness, abdominal pain and diarrhea are the most common first symptoms of Crohn's disease. Crohn's disease is a chronic inflammatory bowel disease (CIBD) and occurs most often in people between the ages of 16 and 35. Any area of the gastrointestinal tract, from the mouth to the anus, can be affected by inflammation, but it most commonly affects the mucous lining of the large intestine (colon) and the small intestine.

## Technology

The DMBT1 gene helps to fight off pathogenic agents that affect the intestines. If this gene is absent or defective, the affected individual has an increased risk of developing Crohn's disease, a chronic inflammation of the digestive tract. DMBT1 is a dual-specific "pattern recognition receptor" for non-self and self structures, which interacts with accessible sulphate and/or phosphate groups which are present on numerous compounds, compositions and organisms.

## Commercial Opportunity

Commercialization of DMBT1-related reagents for research, such as antibodies, is immediately possible. DKFZ is currently seeking a partner to license and/or collaborate with on the DMBT1 research that is ongoing at DKFZ.

## Developmental Status

In order to show that a defect in DMBT1 has a direct influence on disease risk, Mollenhauer and colleagues deactivated the gene for DMBT1 in mice. The researchers irritated the intestines of the mice with a chemical. Mice whose DMBT1 gene was switched off showed stronger inflammatory reactions than animals with an intact copy of the gene. The scientists deduced that DMBT1 counteracts chronic bowel inflammations. If this gene is absent or defective, the risk of developing Crohn's disease is increased. Other diseases found to be associated with DMBT1 by the DKFZ scientists are cancers of the breast, lung, brain and the gastrointestinal tract.

## Patent Situation

U.S. Patent 6,346,606 issued February 12, 2004. German patent (DE 197 30 997) issued March 11, 1998. PCT (WO 98/30 687), European Patent 1 015 583 issued October 2005, JP 2001-509667 application pending; furthermore EP05732131.7 and corresponding US application are pending.

## Further Reading

Renner et al.: DMBT1 Confers Mucosal Protection In Vivo and a Deletion Variant Is Associated With Crohn's Disease. *Gastroenterology*, vol. 133, p. 1499, November 2007.

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