1: J Nephrol. 2009 Jan-Feb;22(1):152-9.

Genetic variant of C1GalT1 contributes to the susceptibility to IgA nephropathy.

Pirulli D, Crovella S, Ulivi S, Zadro C, Bertok S, Rendine S, Scolari F, Foramitti M, Ravani P, Roccatello D, Savoldi S, Cerullo G, Lanzilotta SG, Bisceglia L, Zelante L, Floege J, Alexopoulos E, Kirmizis D, Ghiggeri GM, Frascà G, Schena FP, Amoroso A; European IgAN Consortium.

Genetics Service, IRCCS Burlo Garofolo and Department of Reproductive and Developmental Sciences, University of Trieste, Trieste, Italy.

BACKGROUND:
IgA nephropathy (IgAN) is a common form of primary glomerulonephritis characterized by diffuse glomerular mesangial IgA1 deposition that leads to mesangial proliferation and chronic glomerular inflammation. Analyses of serum IgA1 from IgAN patients revealed an abnormal galactosylation of the O-linked carbohydrate moieties of IgA that may be a result of altered activity of core 1 beta1,3-galactosyltransferase (C1GalT1). To evaluate the association between C1GalT1 single nucleotide polymorphisms (SNPs) and IgAN, we performed a case control study on cohorts from the Italian population.

METHODS:
We sequenced C1GalT1 coding and promoter regions in 284 IgAN patients and 210 healthy controls. The functional role of 3' untranslated region (3'UTR) SNPs was studied using electrophoretic mobility shift assays and real-time quantitative PCR.

RESULTS:
We analyzed 8 SNPs in the C1GalT1 gene: 5 SNPs were in the promoter region and 3 SNPs in the 3'UTR. The allele 1365G in the 3'UTR was significantly more frequent in IgAN patients than in healthy controls.

CONCLUSION:
The 1365G allele and 1365G/G genotype seem to confer susceptibility to IgAN.