

## **Affected genes**

TNFRSF13C (BAFR)

BTK

CARD11

ADA2

CSF2RA

CTLA-4

Del 22q11.2

TNFRSF6 (FAS) germline

ICOS

IKZF1

IRF2BP2

LRBA

NFKB1

NFKB2

NFKBIA

PIK3CD

PIK3R1

CARMIL2

SOCS1

STAT1

STAT1 (GOF)

STAT3-GOF

TNFRSF13B (TACI)

TNFAIP3