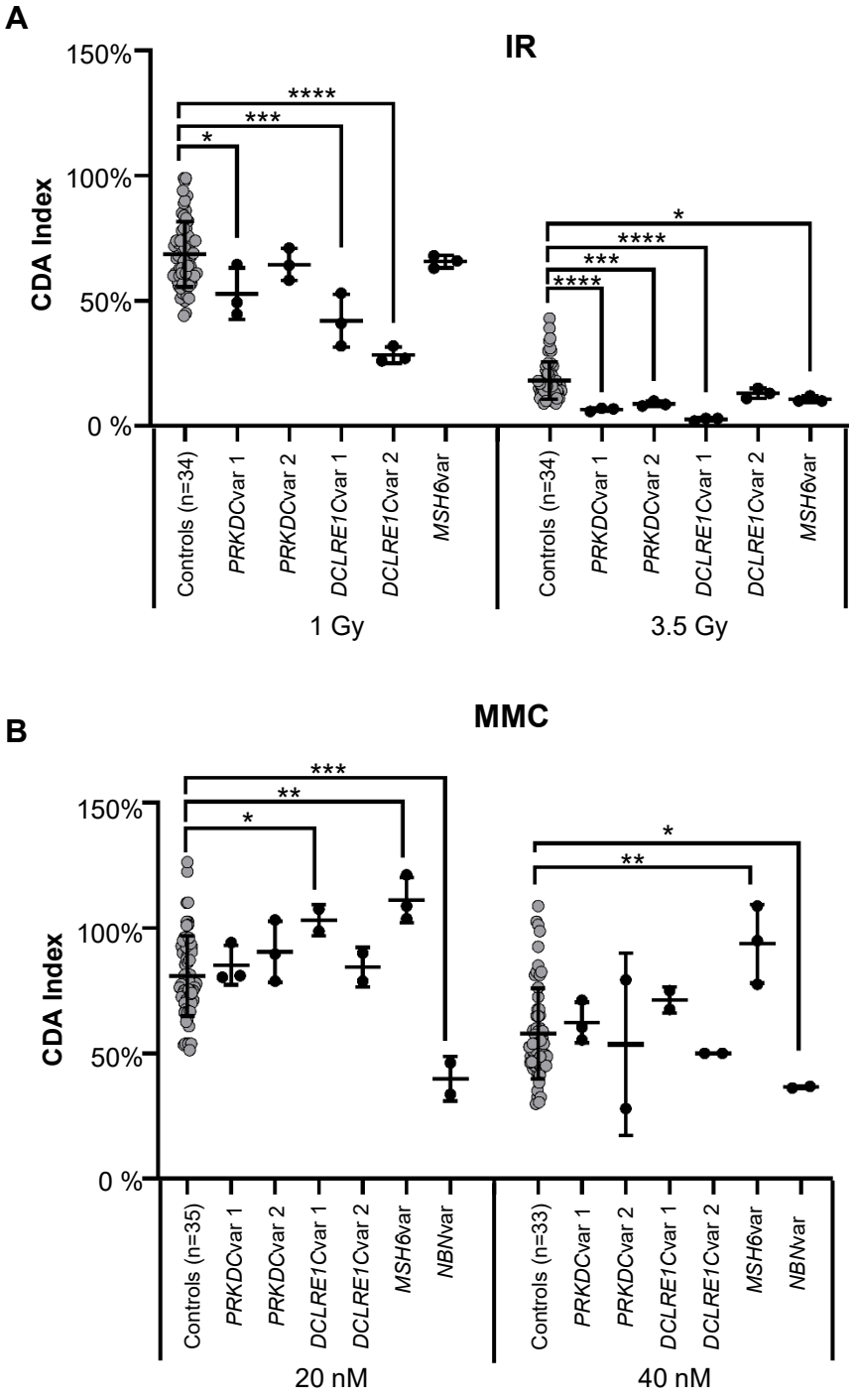
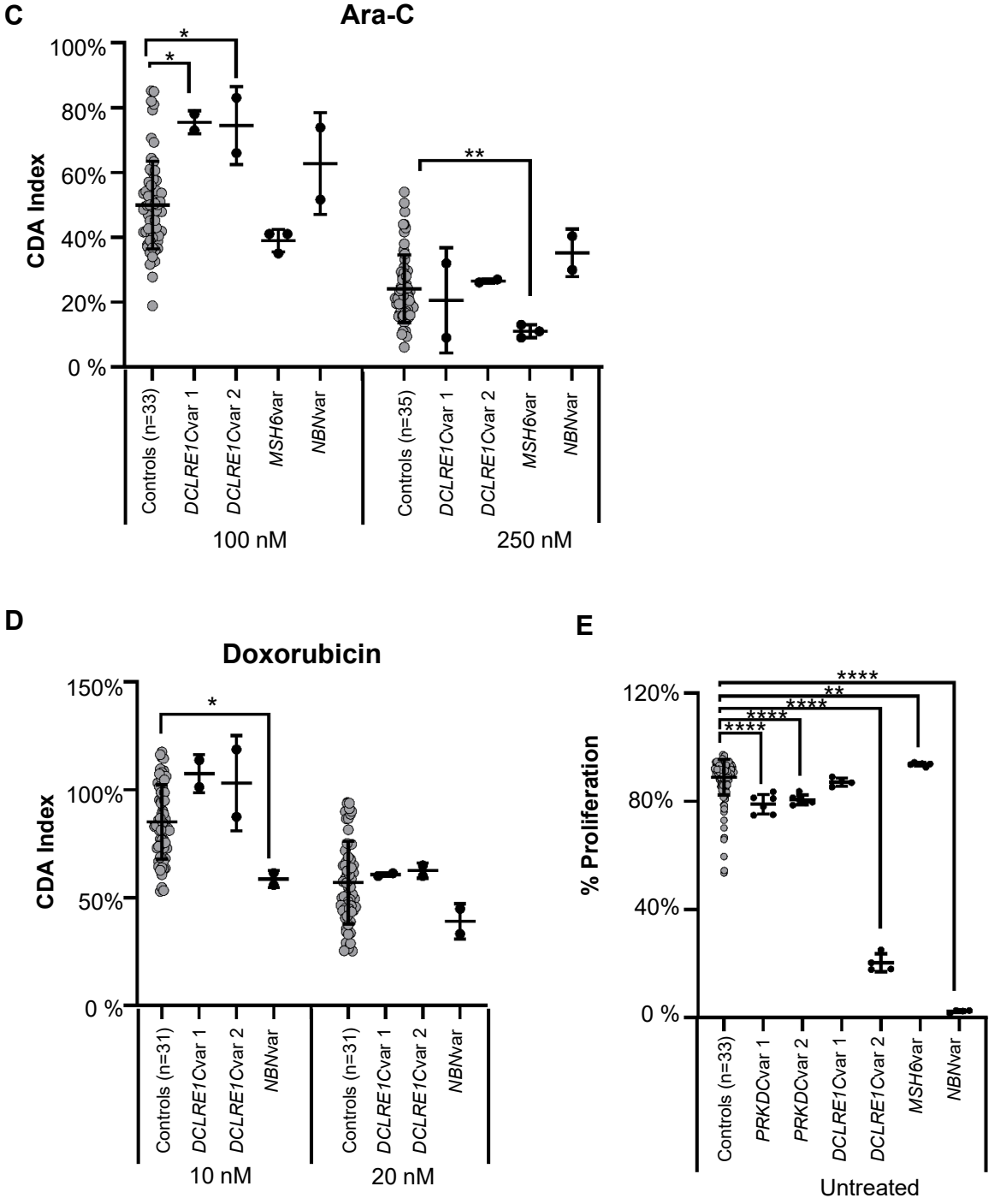
Supplementary Table 1. Patients included in the study

Pat ID/gene variant	Diagnosis	Variant description	Phenotype
*PRKDC*var 1	CID	compound heterozygous variants (an in frame deletion and a missense variant)	Mild combined immunodeficiency presenting with, IgA deficiency, recurrent infections, vitiligo and atypical intestinal disease resembling celiac.
*PRKDC*var 2	CID		
*DCLRE1C*var 1	SCID	compound heterozygous variants (a large deletion and a missense variant)	Immunodeficiency, no B cells, recurrent respiratory tract infections and emphysema/bronchiectasis
*DCLRE1C*var 2	SCID		
*NBN*var	NBS	homozygous truncating variant	Microcephaly, growth retardation and developmental delay. An immunological defect affecting mainly the T cells, and recurrent infections.
*MSH6*var	CMMRD	compound heterozygous truncating variants	Atypical neurofibromatosis and multiple intracerebral abnormalities as well as multiple polyps and adenomas in the colon.

Abbreviations:
CID Combined immunodeficiency
SCID Severe combined immunodeficiency
NBS Nijmegen breakage syndrome
CMMRD Constitutional Mismatch Repair Deficiency Syndrome


A
IR
150%
100%
50%
0 %
CDA Index
****
***
*
*
****
***
****
Controls (n=34)
PRKDCvar 1
PRKDCvar 2
DCLRE1Cvar 1
DCLRE1Cvar 2
MSH6var
Controls (n=34)
PRKDCvar 1
PRKDCvar 2
DCLRE1Cvar 1
DCLRE1Cvar 2
MSH6var
1 Gy
3.5 Gy
B
MMC
150%
100%
50%
0 %
CDA Index
***
**
*
*
**
Controls (n=35)
PRKDCvar 1
PRKDCvar 2
DCLRE1Cvar 1
DCLRE1Cvar 2
MSH6var
NBNvar
Controls (n=33)
PRKDCvar 1
PRKDCvar 2
DCLRE1Cvar 1
DCLRE1Cvar 2
MSH6var
NBNvar
20 nM
40 nM



Supplmentary Figure 1. *In vitro* sensitivity of blood T cells from patients compared to heathy controls using the CDA treated with indicated doses of; **A.** IR, **B.** MMC, **C.** Ara-C, and **D.** Doxorubicin. **E.** The proliferation rate of untreated T cells for each patient and 33 control individuals. Patient proliferation was assayed as four to six replicates. The number of controls is indicated for each dose and ranged from 18 to 75 years old. The line and error bars indicate the mean and standard deviation of the mean. Distribution of controls was not normal, and the patients were compared to the controls using the nonparametric two-tailed Mann-Whitney test.