Supplementary Information

Germline *CBL* mutations cause developmental abnormalities and predispose to juvenile myelomonocytic leukemia

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Supplementary Figure 1

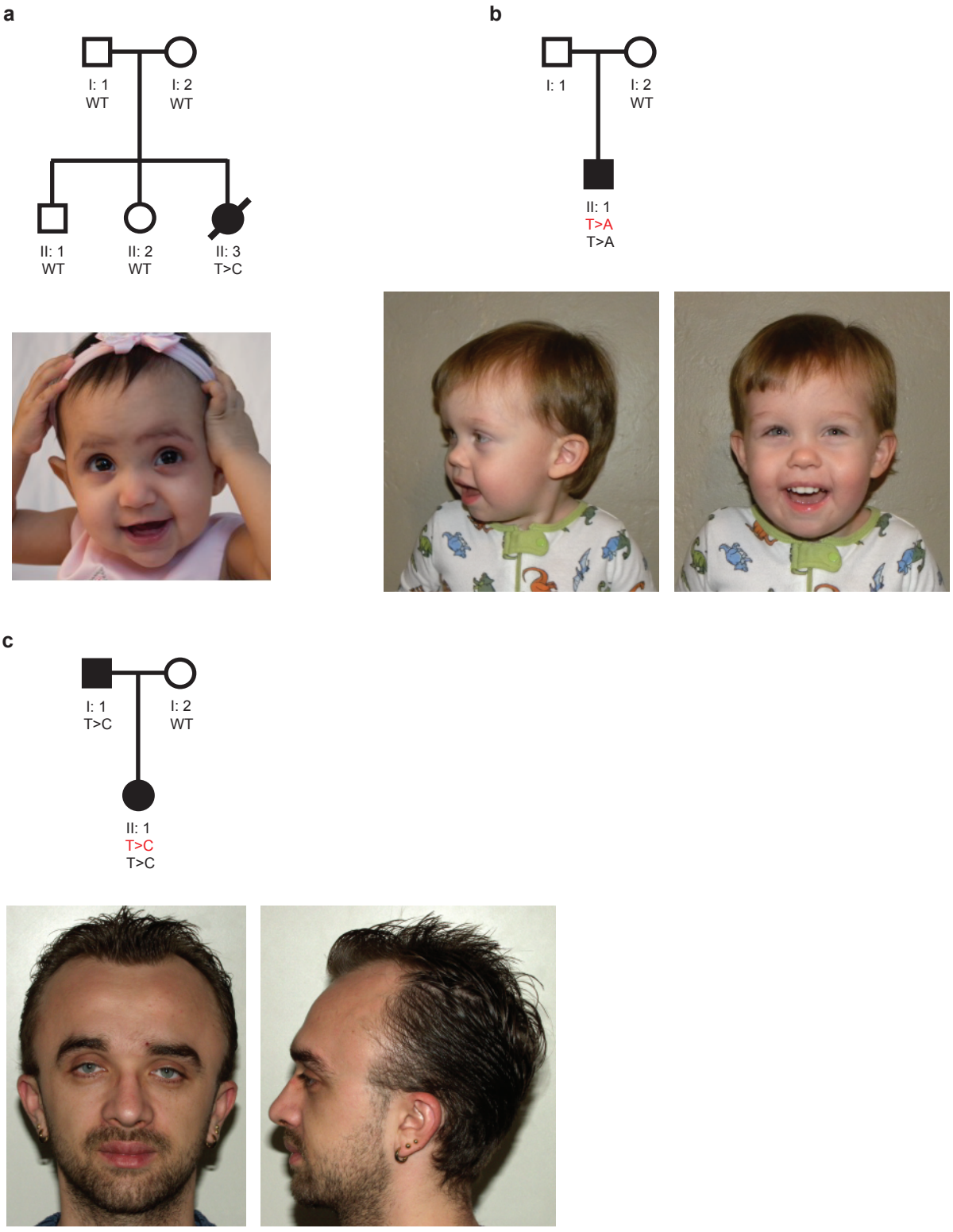

Figure S1. Patients with *CBL* mutations exhibit different facial phenotypes. Panel (a) depicts a child (UPN1241) with a homozygous p.Y371H who demonstrates low set ears, downslanting palpebral fissures and a narrow philtrum. Panel (b) demonstrates a child (UPN1178) with a homozygous p.Y371N who also shows mild frontal bossing as well as mild hypertelorism and a narrow philtrum. Panel (c) is the father of the child in Figure 1d (D703); he is heterozygous for the p.C384R mutation and displays downslanting palpebral fissues, ptosis, and low set ears. Informed consent to publish the pictures of these patients were obtained from their parents (main text, Figure 1, Supplementary information, figure S1a, b) or the father of the child in Figure 1d (Figure S1c).

Supplementary Figure 2

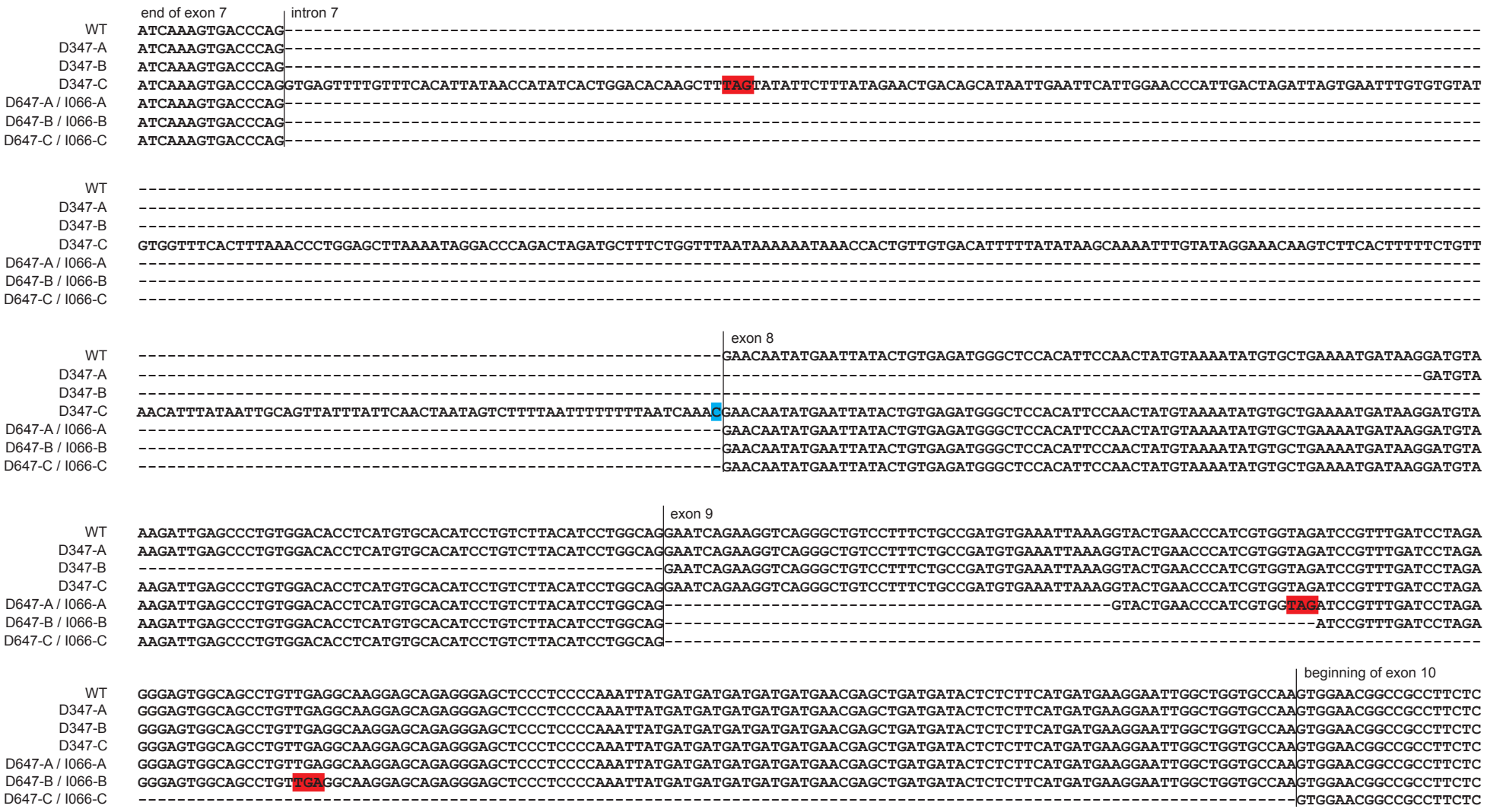

Figure S2. DNA sequences from the patients with splice site variants. The splice site mutation from D347 is highlighted in blue. Premature stop codons are highlighted in red.

Supplementary Note: All of the subjects studied in this project participated in research protocols that have been approved by local institutional review boards. Patients and families were referred to EWOG-MDS and/or UCSF based on the known interest in JMML demonstrated over the years by Drs. Loh and Niemeyer. A large clinical database is maintained by EWOG-MDS.