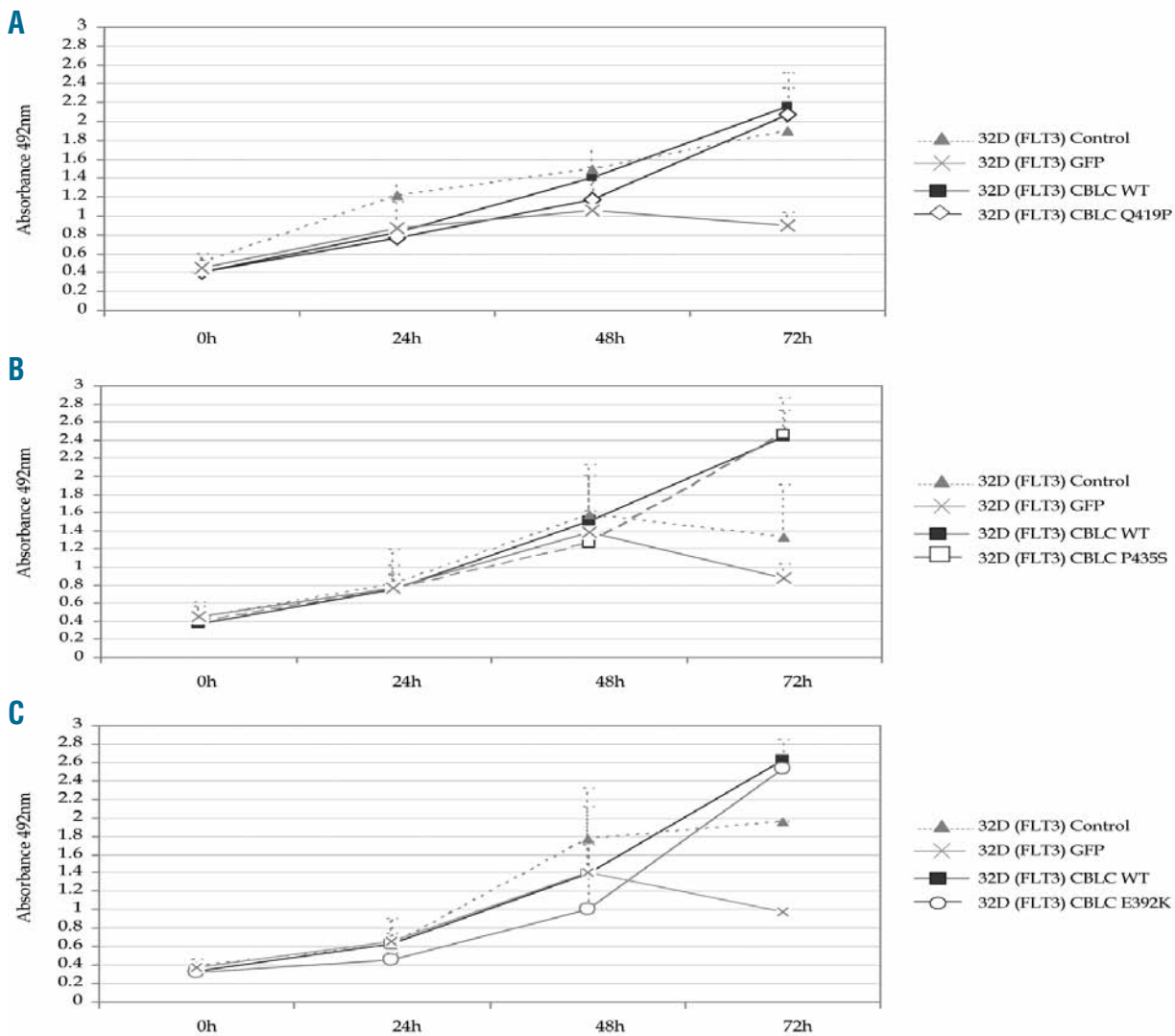


CBL mutations in myeloproliferative neoplasms are also found in the gene's proline-rich domain and in patients with the V617FJAK2

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Online Supplementary Figure S1. MTS cell proliferation assays corresponding to four different transfections for CBLC mutants. Two negative controls (cells mock-transfected and cells transfected with GFP control vector) were included. (A) Assay corresponding to the CBLC mutation p.Q419PfsX81 compared to wild-type (t-test, $P>0.05$). (B) Assay corresponding to CBLC p.P435S mutation (t-test, $P>0.05$). (C) Assay corresponding to CBLC p.E392K mutation (t-test, $P>0.05$).

Online Supplementary Table S1. dHPLC primers and conditions used for the mutational screening of *CBL* genes. Two primers were used to amplify each exon (Fw and Rv). Another primer with a base change was used for every exon (Fwm or Rvm) to amplify a mutated fragment, which was used as a mutant control to validate the dHPLC analyses.

<i>CBL</i>	Exon	Size (bp)	Primers	dHPLC conditions		
				% Buffer A	% Buffer B	Temp. (°C)
	2 (N-adaptor)	319	Fw:GCCCTTCTTTTTCATTGTTG Rv:GGCAGTCACAGACCTGCATA Fwm GCCCTTCTTCTTCATTGTTG	39.0 39.0 46.5	61.1 61.1 53.6	56.7 58.0 60.7
	3 (EF-hand like)	324	Fw:ATGGTGAATTTGGTGCAATT Rv:TTTTTCAGAGTCCCAAATTTA Fwm ATGGTGAATGTTGGTGCATT	41.4 43.9	58.7 56.2	56.5 58.7
	4 (EF-hand like)	290	Fw:GCTCTCCTTCCTTCCTTGA Rv:TCACCGAAGTAGCAGTAACCAG Fwm GCTCTCCTTCCTTCCTTGA	39.9 42.4	60.2 57.7	57.1 60.7
	5 (SH2 adaptor)	291	Fw:TGCCCTCTGAGTTGGTTGTA Rv:AACCTTGGCTATTGCGAAAC Fwm TGCCCTCTGAAATGTTGGTTGTA	39.8	60.3	59.8
	6 (SH2 adaptor)	265	Fw:TATCTTGCCTTGCCTCCAC Rv:AGGTTGGACAGCCCCTAAGT Rvm:AGGTTGGAAAGCCCCTAAGT	40.7	59.4	57.5
	7 (SH2 adaptor)	243	Fw:ACACCACGTTGCCCTTTAG Rv:AAGCTTGTGTCAGTGATATGG Rvm:AAGCTTGTGTACAGTGATATGG	41.5	58.6	58.5
	8 (Ring finger)	386	Fw:GGACCCAGACTAGATGCTTCT Rv:GGCCACCCTTGTATCAGTA Rvm:GGCCACCCTCGTATCAGTA	37.5 40.0 45.0	62.6 60.1 55.1	53.2 55.5 59.5
	9 (Ring finger)	364	Fw:CTGGCTTTGGGGTTAGGTT RV:AATGGATTTGCCAGTCTCC RVM:AATGGATTCGCCAGTCTCC	40.5 40.5 43.0	59.6 59.6 57.1	58.5 59.5 61.5
	10 (proline-rich)	260	Fw:CCATTTCCCAAACGAAAAGT Rv:GCAGGGTAAAAGCAAATCAG Rvm:GCAGGGTGAGAGCAAATCAG	40.9 43.4 45.9	59.2 56.7 54.2	58.0 61.0 63.8
	11 (proline-rich)	452	Fw:CTTTCACCCTGCTCCACAG Rv:CCTGGCCACACATATTTCTT Fwm CTTTCACCCGCTTCCACAG	36.4 36.4 38.9	63.7 63.7 61.2	59.5 60.6 62.4
	12 (proline-rich)	240	Fw:CAGAGGCTCAGCTGTGGTAA Rv:ACACTTTCTGGGTTTCTCAA Fwm CAGAGGCTCCGCTGTGGTAA	41.7 46.7	58.4 53.4	57.5 59.5
	13	263	Fw:GGTGACATGATTTTGCTCTGTC Rv:CCCAAAAAGGGTTGTTGTA Rvm:CCCAAAAAGGGCTGTTGTA	43.3 45.8	56.8 54.3	60.5 61.5
	14	267	Fw:TGGCAAAACGAGAAGATGAA Rv:CAAGCTATCTCAATTGCCAAATA Rvm:CAAGCTATCTCGATTGCCAAATA	43.1 45.6	57.0 54.5	59.0 60.0
	15	272	Fw:GATGAAGTGCGTCAGAAGAAGA Rv:CACACTGCCATTGAGACAA Rvm:CACACTGCCAGTCCAGGACAA	40.5 40.5 48.0	59.6 59.6 52.1	60.0 61.8 66.0
	16 (UBA)	249	Fw:AAATGAGGATTTCCCAGATT Rv:AAGCTTTCTGGATGCTCTGGT Rvm:AAGCTTTCTGTATGCTCTGGT	41.3 43.8 43.8 46.3	58.8 56.3 56.3 53.8	58.1 62.0 63.0 64.5

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CBLB	Exon	Size (pb)	Primers	dHPLC conditions		
				% Buffer A	% Buffer B	Temp. (°C)
	2 (N-adaptor)	316	Fw:CCCCGCCCATGGAGGAAGATGCAGTGGT Rv:CAGGCAACGTGACAGAGAAC Rvm:CAGGCAACGGCAGACAGAAC	39.1 41.6 44.1	61.0 58.5 56.0	56.0 59.0 61.5
	3 (N-adaptor)	385	Fw:TGGAAAAATGAAGAAATAGGACA Rv:TGACCTTTACACAAAAACATCTG Rvm:TGACCTTTACGCCAAAAACATCTG	37.5 40.0	62.6 60.1	55.0 56.0
	4 (N-adaptor)	211	Fw:TTTTTCCTTGTGCCTACAG Rv:CCTTGAAAGATAGATCCACAGC Fwm TTTTTCCCTCGTGCCTACAG	43.0 45.5	57.1 54.6	56.5 58.8
	5 (EF-hand like)	277	Fw:TGCTGCTTCAAAGGGAGGTA Rv:GGGAGAGAGAAGAAGGGAATG Rvm:GGGAGAGAGAGGGAAGGGAATG	40.3 42.8 45.3	59.8 57.3 54.8	55.5 58.0 59.5
	6 (EF-hand like)	353	Fw:TGACCTAAACCACATAAGGTCAGA Rv:ATCAGCGGGTATTGCTGACT Rvm:ATCAGCGGGTCTGCTGACT	40.7	59.4	57.2
	7 (SH2 adaptor)	322	Fw:CCGCCGATGGAGAAGTACATTGTGCTAAA Rv:GCACTCCAACCTCCATTTCTC Rvm:GCACTCCAACCTCCATTTCTC	39.0 44.0	61.1 56.1	55.0 58.6
	8 (SH2 adaptor)	296	Fw:TGAAAAGGAAACATCCAAATGTA Rv:ATTTATTTCAAAGGGCATTATGG Rvm:ATTTATTTCAAAGGGCATTATGG	39.7 42.2	60.4 57.9	53.7 55.0
	9 (Ring finger)	348	Fw:TCTGACAAGGTCAATTGTGAGAT RV:CGCGCGCCAGCATTACTTCCATAACCAT FWM TCTGACAAGGTCAATTGTGAGAT	40.8 43.3	59.3 56.8	56.3 58.4
	10 (Ring finger)	294	Fw:TCCATGCATTTTCTATTGTTTGTAG Rv:GCCGCGCATCATTTCTTTTCATATGGT Fwm TCCATGCATTTTCTATTGTTTGTAG	39.8 42.3	60.3 57.8	58.3 60.5
	11	375	Fw:CAGCGGCATCTTCTCTTTT Rv:CCGCCGAATGTGGGCTCACCATAAA Fwm CAGCGGCATCTTCTCTTTT	40.2 45.2	59.9 54.9	58.4 61.1
	12A	256	Fw:TGTCAGTGCATGGTACAACCT Rv:GGGCACCATGCTTCAAGA Rvm:GGGCACCATGCTTCAAGA	41.0 43.5	59.1 56.6	57.4 61.2
	12B	302	Fw:CACCAATCCCACCAGACAAT Rv:GCCGCCGCTTCTGCTTGTGCTATTCTT Fwm CACCAATCCCACCAGACAAT	39.5 39.5	60.6 60.6	60.3 61.5
	13 (proline-rich)	301	Fw:TTGGGCAGTGGTGAATCAT Rv:CAAGTGATCTCCAAATTAACAA Rvm:CAAGTGATCTCCAGATTCAACAA	39.5 44.5	60.6 55.6	57.1 59.7
	14 (proline-rich)	242	Fw:TGTCACATCAGACTTGCCTGT Rv:GTGGCAAAAATCTGCCATA Rvm:GTGGCAAAAATCTGCCATA	41.6	58.5	58.2
	15 (proline-rich)	400	Fw:TTGTGGCCCTTGTAAATCTTGT Rv:TGCCTTTAAATCTGACCATTAAG Rvm:TGCCTTTAAAGTCTGACCATTAAG	37.3 44.8	62.8 55.3	54.0 56.6
	16 (proline-rich)	248	Fw:TGGTCAGAATTTAAAGGCAAAA Rv:GCCGCCAGGGTGGGTGTTCAAAA Rvm:GGCGGCAGGGTGGGTGTTCAAAA	41.3 43.8	58.8 56.3	57.6 61.0
	17 (proline-rich)	298	Fw:CTGCTGATATCGACCTTCTTT Rv:CACCCAGGGATTTTCTGT Fwm CTGCTGATATCAACCTTCTTT	42.1 44.6	58.0 55.5	58.5 60.8
	18	287	Fw:TCAGCCAATCAACAGAGATCA RV:TCTTGGGTGGACAACATCA Fwm:TCAGCCAATCAACAGAGATCA	40.0 45.0	60.1 55.1	55.5 58.5
	19 (UBA)	357	Fw:TTGCCTTCATTTTATTTCACTG Rv:GGCGGCTTGCCTTCCATTTGGTGTCT Rvm:GGCGGCTTGCCTTCCATTTGGTGTCT	38.1 38.1 40.6	62.0 62.0 59.5	59.5 60.0 62.0

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CBLC	Exon	Size (pb)	Primers	dHPLC conditions		
				% Buffer A	% Buffer B	Temp. (°C)
	1 (N-adaptor)	397	Fw:GAGGCTCCCATGGCTCTG Rv:ACCCAGAGGACTTTGTTCTG Fwm GAGGCTCCATGGCTCTG	37.3 37.3 37.3	62.8 62.8 62.8	65.0 66.8 69.0
	2 (N-adaptor)	294	Fw:CCCAAGGATAGCCAGAGTCC Rv:AGCCTATGATGGGAGGGTCT Fwm CCCAAGGATCGCCAGAGTCC	39.8	60.3	64.2
	3 (EF-hand like)	264	Fw:ACCTCCCATCATAGGCTCT Rv:TCCTCTGGACCCAAGTCTA Fwm ACCTCCCATCATAGGCTCT	40.7 43.2	59.4 56.9	63.0 65.1
	4 (EF-hand like)	250	Fw:AAGGAGGTGGTTGGATCCTC Rv:GCAGCCTTGTCTGCTGAG Rvm:GCAGCCTTGTCTGCTGAG	41.3	58.8	63.5
	5 (SH2 adaptor)	300	Fw:ACAAAAGGGATGGCAGTGAC Rv:GAATGGTTGCACCCTCAAAC Fwm ACAAAGGGCTGGCAGTGAC	39.6 39.6	60.5 60.5	62.0 63.2
	6 (SH2 adaptor)	315	Fw:TGGATTGGGACAGATCCTC Rv:AGAGCCACCAAGCCAACAT Rvm:AGAGCCACCAAGCCAACAT	39.2 44.2	60.9 55.9	62.5 65.0
	7 (Ring finger)	296	Fw:CCGAGTTTGGGATTTTCTT Rv:GAGATCCTTTTGGGGCTTTC Rvm:GAGATCCTTTTGGGGCTTTC	39.7 44.7	60.4 55.4	63.0 65.5
	8 (Ring finger)	307	Fw:CGTCTCCCTTCCTCTGTCTG Rv:AGGAATTTGGATTCCAGCTC Rvm:AGGAATTTGATTCCAGCTC	39.4 41.9	60.7 58.2	64.0 64.5
	9 (proline-rich)	245	Fw:CGAGAAGAAAATGGCAGCTC Rv:ATGGGTGCCAAGGATGAGT Rvm:ATGGGTGCCAAGGATGAGT	41.5	58.6	64.5
	10 (proline-rich)	243	Fw:ACAAAGGGGACAGGAAGAG Rv:GGAGAGAGGGGTGGTTAGA Rvm:GGAGAGAGGAGTGGTTAGA	41.5 46.5	58.6 53.6	61.5 65.0