



Figure S1 Left panel: MetHb spot-test for methemoglobin for the affected cat (1) and an unaffected cat (2). The blood of the affected cat keeps the brown discoloration even after being exposed to air. Right panel: cyanosis in the affected cat.

XP_044918404.1_CYB5R3_wt	MGAQLSTLGHVVLSPVWFVLYNLFMKLFHRSTPAITLESPIKYLRLIDKEVINHDTRRF	60
CYB5R3_mut#1	MGAQLSTLGHVVLSPVWFVLYNLFMKLFHRSTPAITLESPIKYLRLIDKEVINHDTRRF	60
CYB5R3_mut#2	MGAQLSTLGHVVLSPVWFVLYNLFMKLFHRSTPAITLESPIKYLRLIDKEASTSTRLE	60
XP_044918404.1_CYB5R3_wt	RFALPSPQHILGLPVG-----QHIYLSARIDGNLVIRPYTPVSSDDDKGFVDL	108
CYB5R3_mut#1	RFALPSPQHILGLPVGERSPDPARVEPGQHIYLSARIDGNLVIRPYTPVSSDDDKGFVDL	120
CYB5R3_mut#2	SMETWSSGPTLPSAMTTRVLWTWSSRFTSKTPIPSFLLGARCPSTWKA-----	109
XP_044918404.1_CYB5R3_wt	VIKVFYKDTHPKFPAGGKMSQYLES MKIGDTIEFRGPNGLLVYQGKGFKAIRPDKKS NPV	168
CYB5R3_mut#1	VIKVFYKDTHPKFPAGGKMSQYLES MKIGDTIEFRGPNGLLVYQGKGFKAIRPDKKS NPV	180
CYB5R3_mut#2	-----	109
XP_044918404.1_CYB5R3_wt	IKTAKSVGMIAGGTGITPMLQVIRAIMKDPDDHTVCHLLFANQTEKDILLRPELEELRNE	228
CYB5R3_mut#1	IKTAKSVGMIAGGTGITPMLQVIRAIMKDPDDHTVCHLLFANQTEKDILLRPELEELRNE	240
CYB5R3_mut#2	-----	109
XP_044918404.1_CYB5R3_wt	HSARFKLWYTVDKAPEAWDYSQGFVNEEMIRDHLPPPEEEPLILMCGPPPMIQYACL PNL	288
CYB5R3_mut#1	HSARFKLWYTVDKAPEAWDYSQGFVNEEMIRDHLPPPEEEPLILMCGPPPMIQYACL PNL	300
CYB5R3_mut#2	-----	109
XP_044918404.1_CYB5R3_wt	DRVGHPKERCFTF	301
CYB5R3_mut#1	DRVGHPKERCFTF	313
CYB5R3_mut#2	-----	109

Figure S2 Amino acid alignment of the CYB5R3 wildtype protein (XP_044918404.1) and the two predicted mutant proteins, mut#1, XP_044918404.1:p.(G76_Q77insERSPDPARVEPG) and mut#2, XP_044918404.1:p.(V52Afs*58). The insertion of 12 additional amino acids in mut#1 is shown in blue. In mut#2, 58 amino acids that are altered by the frameshift are marked in red.

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