The development of a novel SNP genotyping assay to differentiate cacao clones

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Appendix 2: DMAS-qPCR Difference plots

One difference plot per SNP assay

Two dimensional plot created by plotting the ΔCq ($Cq_{ref} - Cq_{alt}$) against the clones analyzed. In these plots heterozygous samples will show Cq differences around zero, while homozygous samples show either negative or positive differences. The plots below display the results of each DMAS-qPCR SNP assay used for genotyping different cacao accessions.

X/ Y values

X-axis : cacao accessions analyzed

1	LCTEEN37/A
2	IFC5[CIV]
3	PA137[PER]
4	ICS1
5	ICS43
6	APA4
7	MA12[BRA]
8	LCTEEN62/S-4
9	POUND16/B
10	MAN15/2[BRA]
11	IMC67
12	PA88[PER]
13	PA156[PER]
14	PA70[PER]
15	PA120[PER]
16	SCA6
17	SCA9
18	NA32
19	NA33
20	MO81
21	IMC53
22	AMAZ15/15
23	PA127
24	NA149
25	SIAL339
26	SPEC41/6-18
27	FSC13
28	LCTEEN302
29	GU114/P
30	KER6
31	KER3
32	GU133/C

33	GU261/P
34	PA121[PER]
35	PA13[PER]
36	NA26
37	NA232
38	NA399
39	SCA11
40	SCA9
41	U45[PER]
42	U70[PER]
43	IMC60
44	IMC103
45	COCA3370/5[CHA]
46	POUND12/A
47	LCTEEN163/A
48	LCTEEN401
49	LCTEEN261/S-4
50	NAPO25[CHA]
51	RB47[BRA]
52	LCTEEN412
53	EBC148
54	RB46[BRA]
55	ICS1
56	UF676
57	ICS95
58	UF613
59	MO20
60	U26[PER]
61	EET183[ECU]
62	EET19[ECU]
63	EET95[ECU]
64	CRIOLLO21[CRI]
65	CRIOLLO11[CRI]

Y –axis: ΔCq ($Cq_{ref} - Cq_{alt}$)

Set Thresholds:

---------------- (black, striped line) = Manual upper and lower boundary

.... (blue, pointed line) = Calculated upper and lower boundary ($\mu \pm 3 \times SD(H)$[1])
⇔ Boundaries were set at 0 for certain SNP markers, as they could not be calculated.

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[1] with μ and   SD(H) representing the average and standard deviation for all ΔCq values from the validated heterozygous samples

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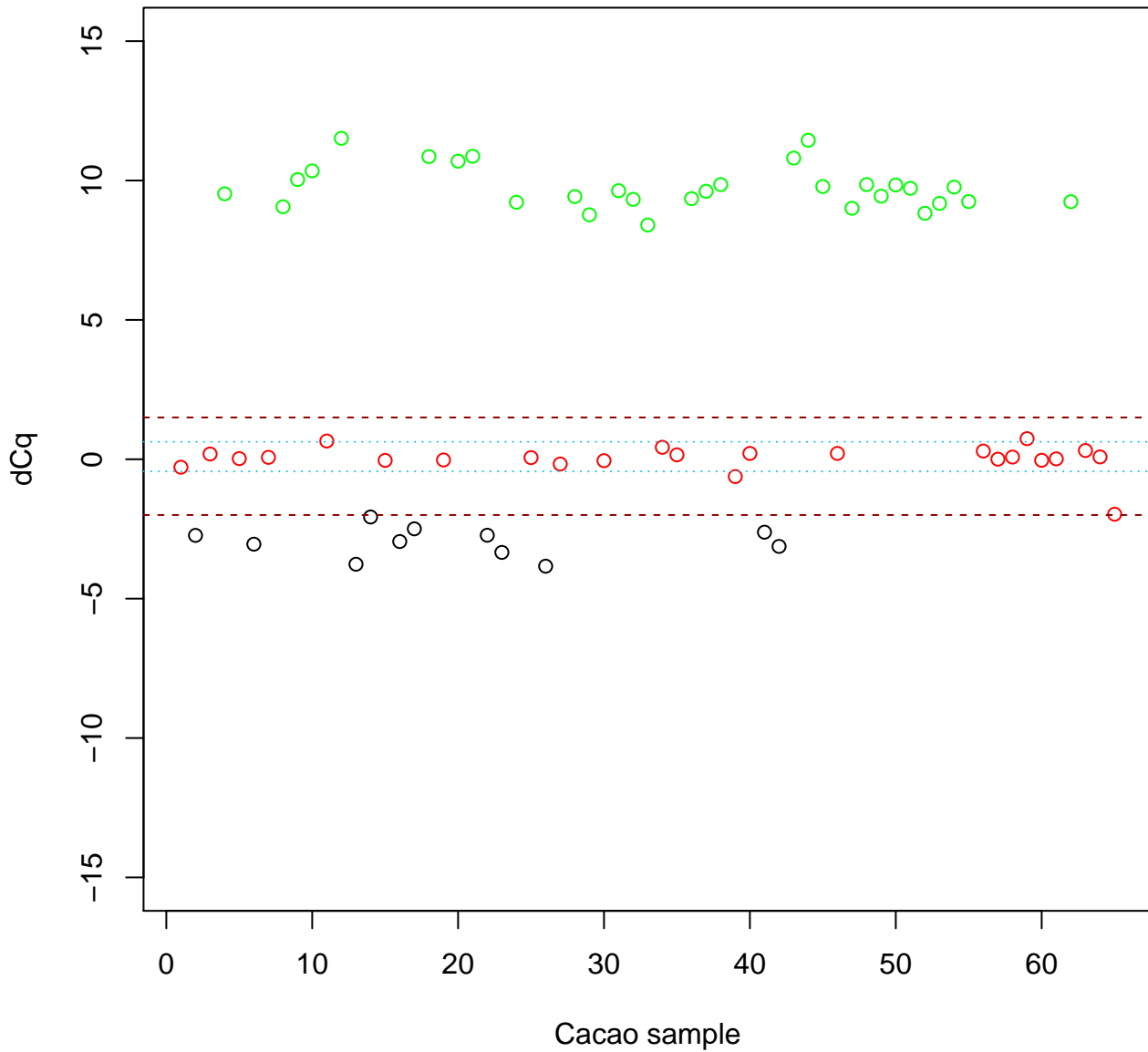
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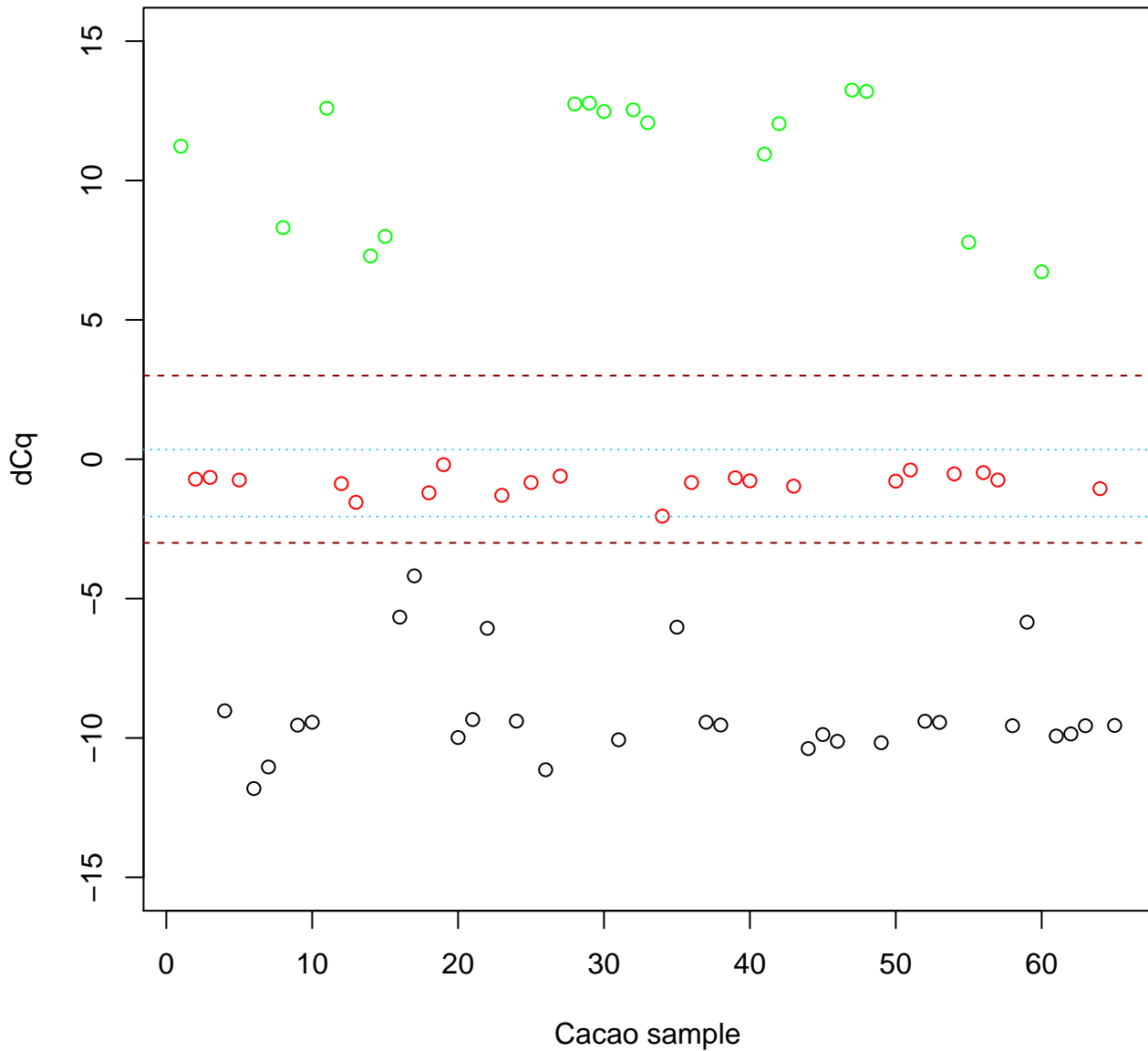
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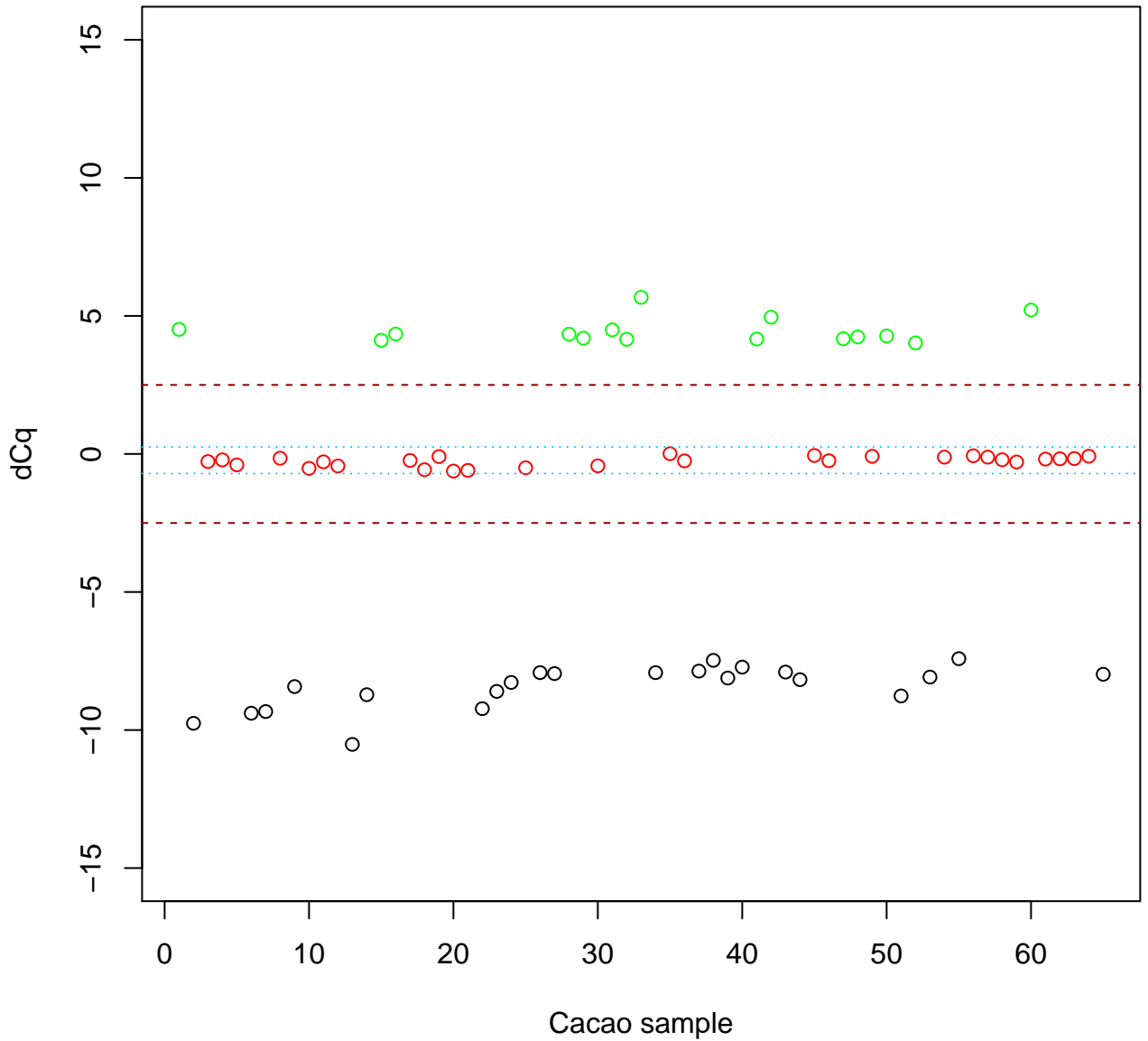
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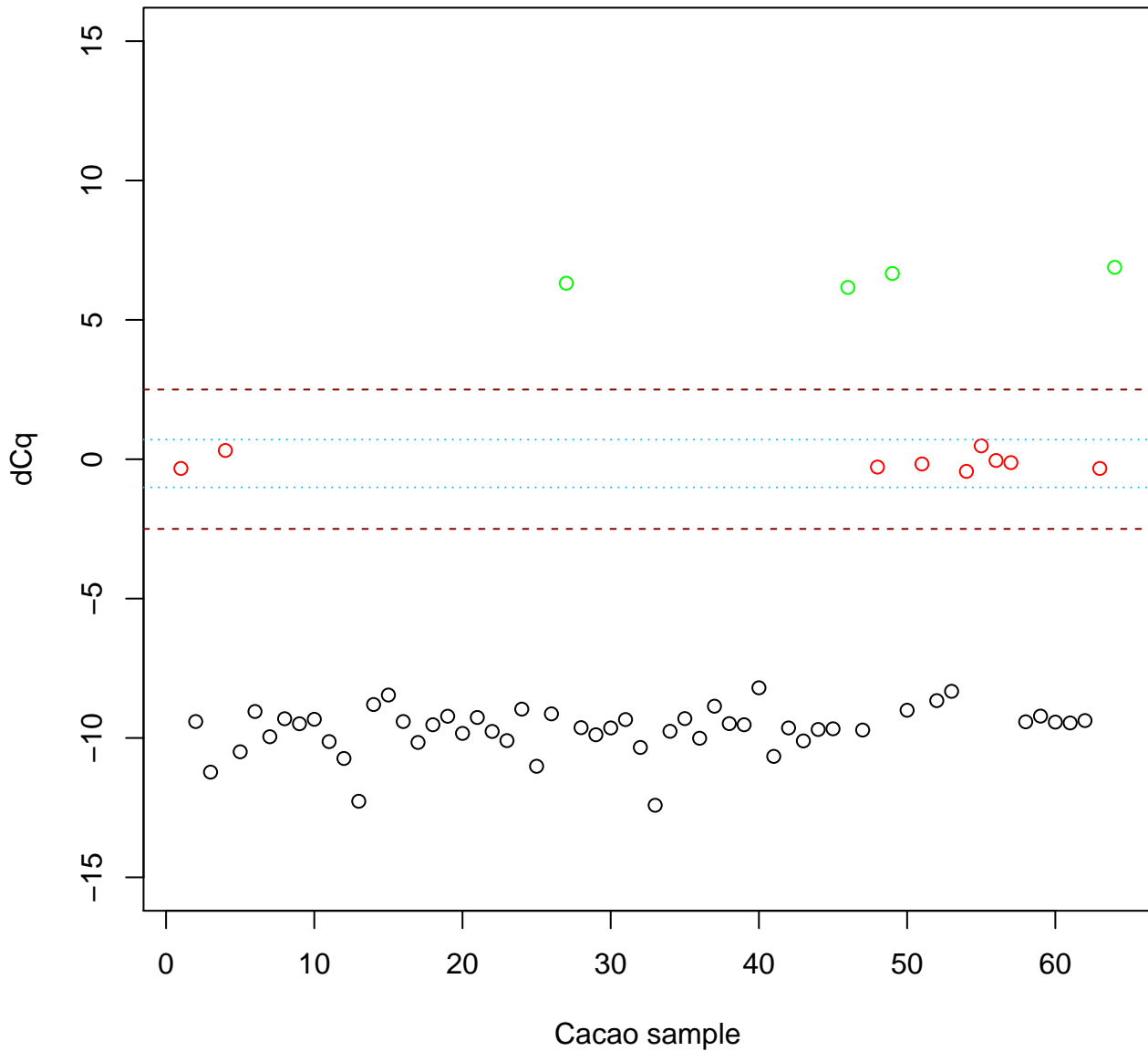
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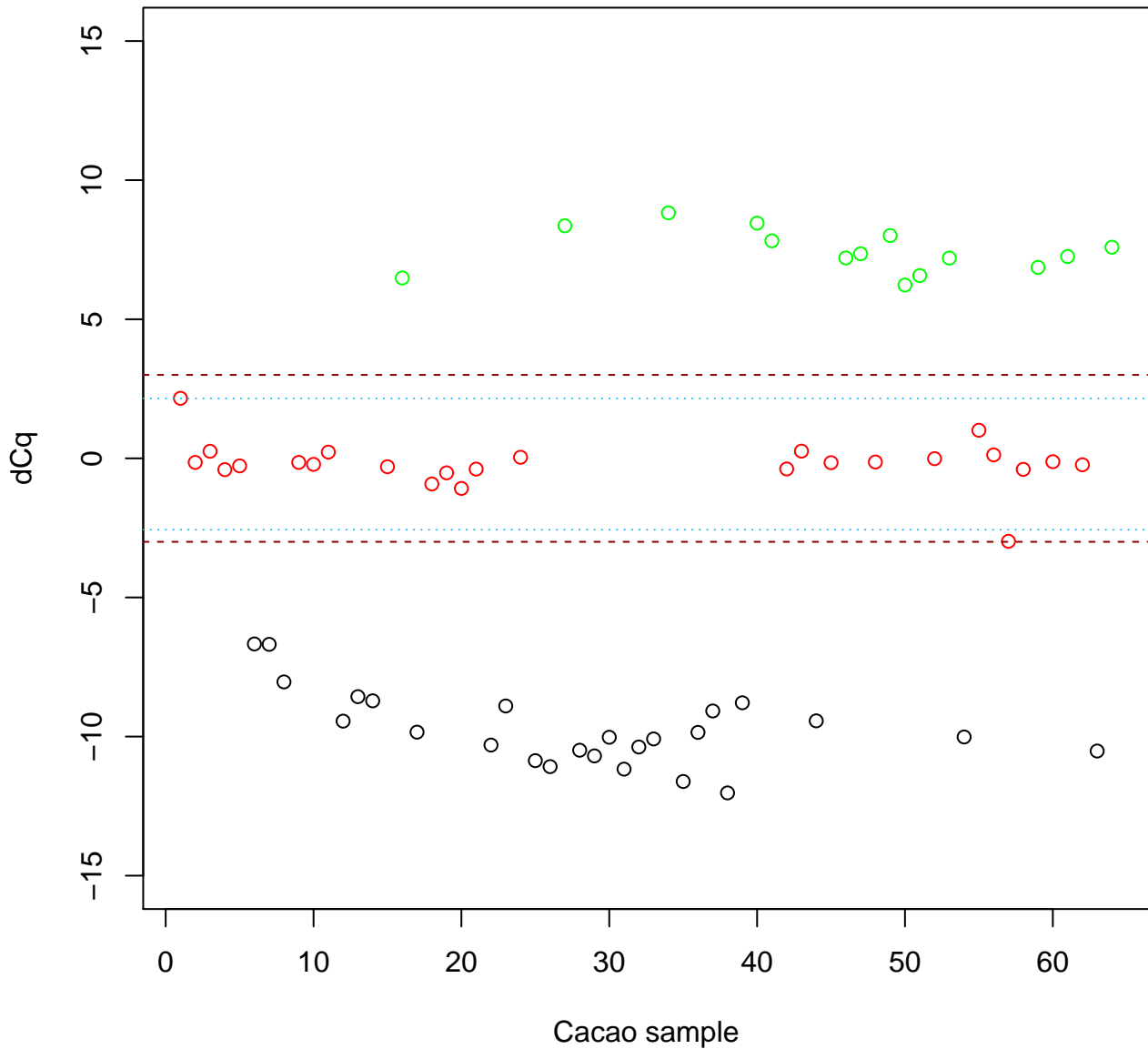
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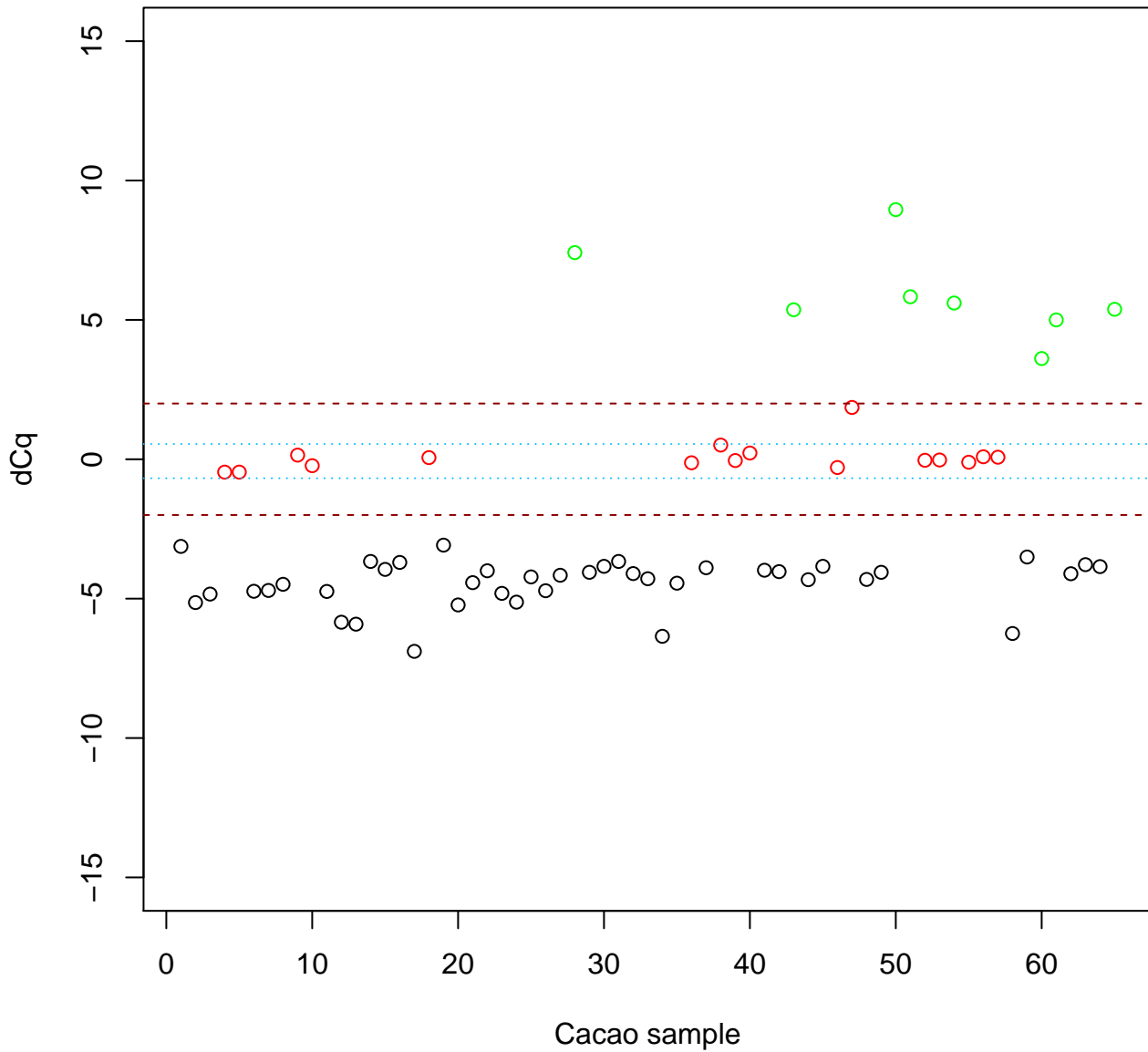
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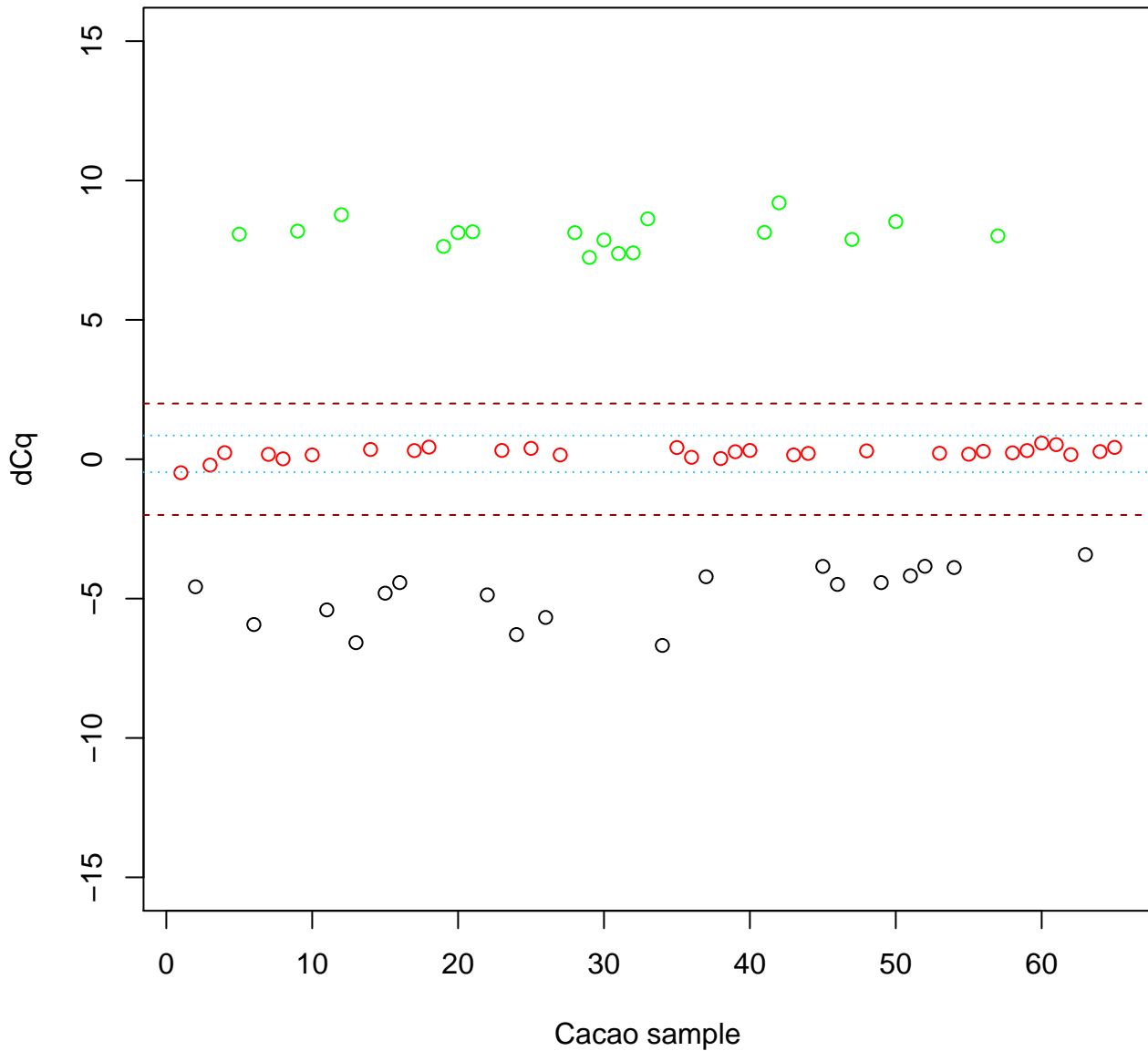
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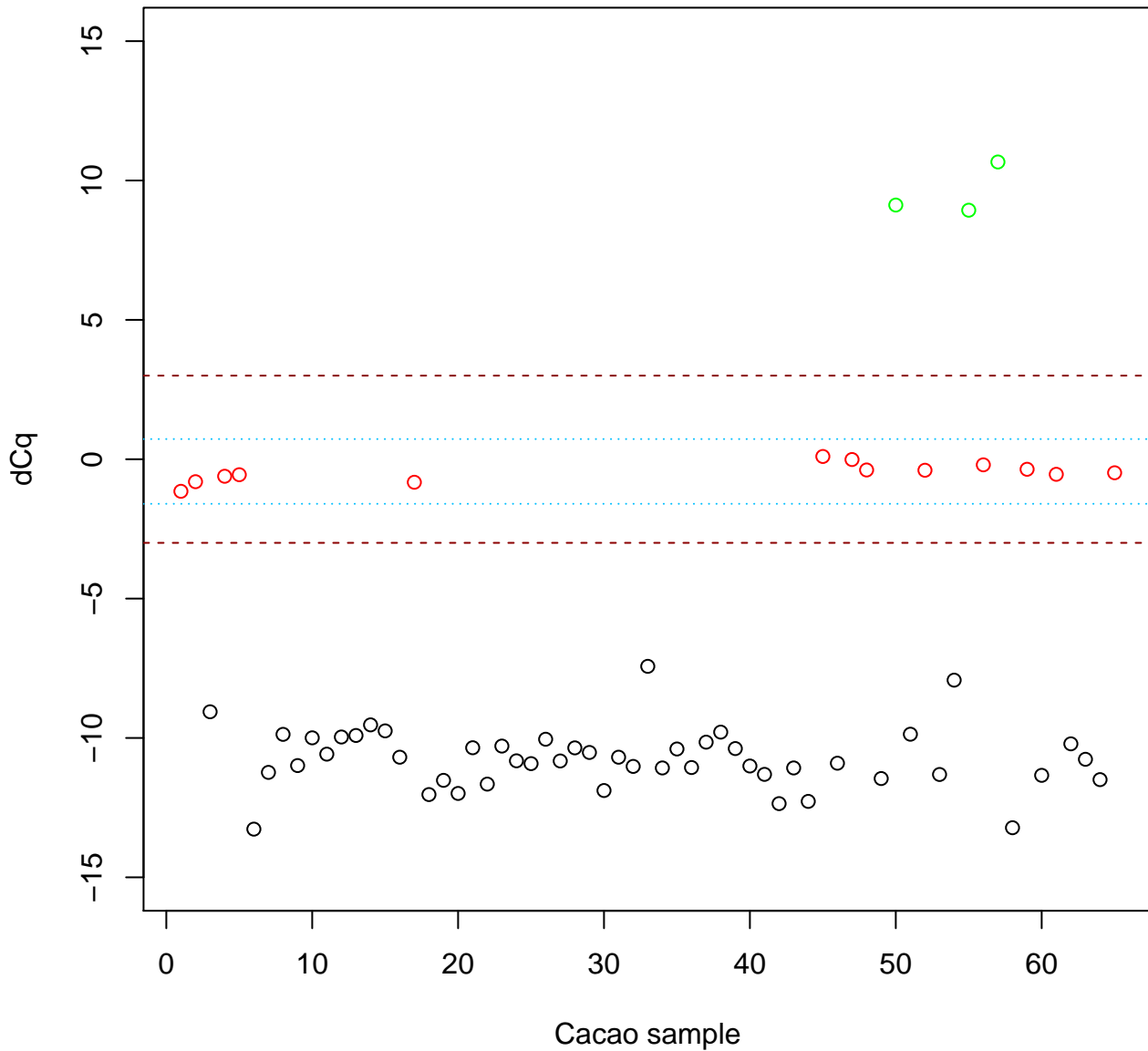
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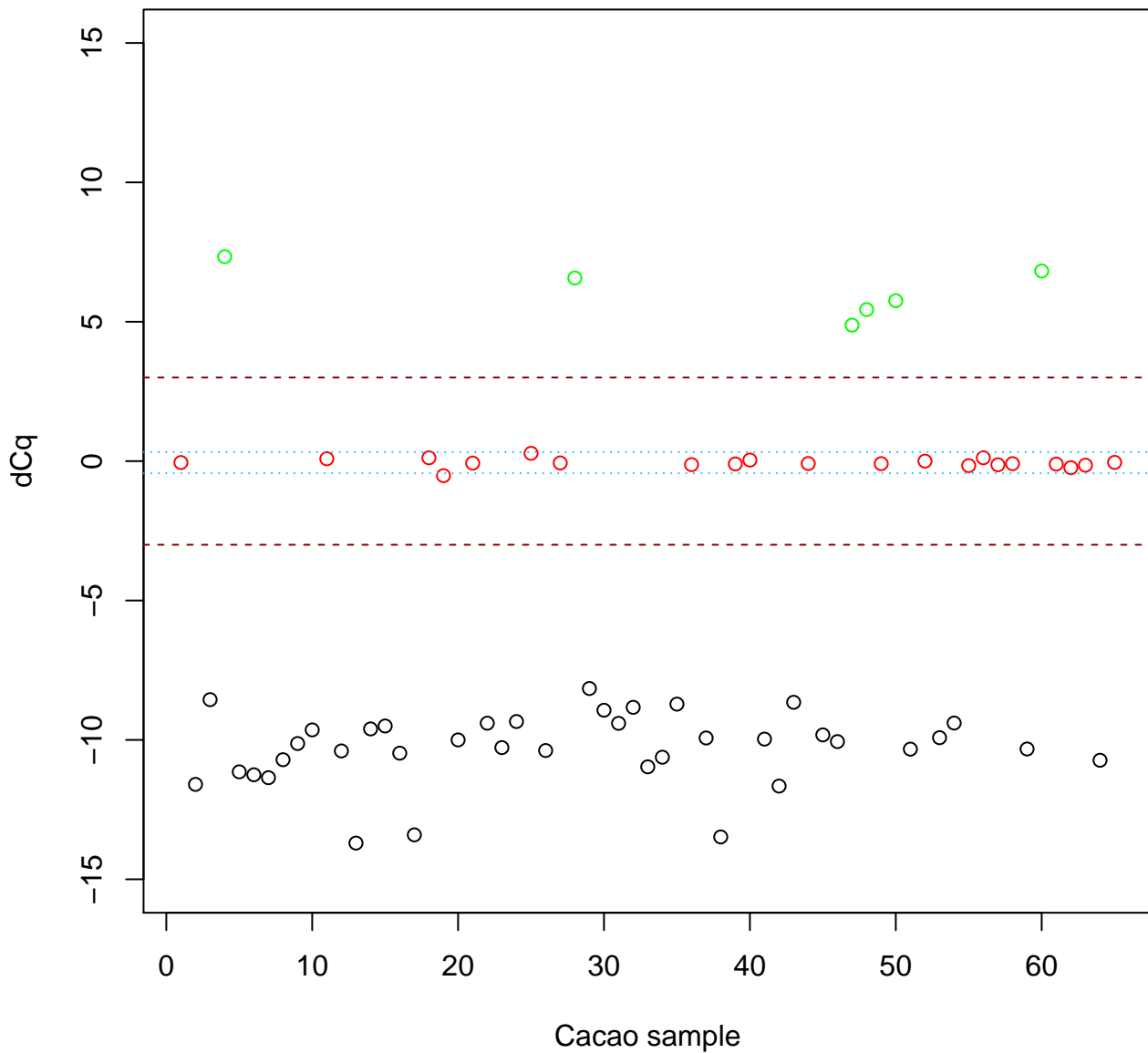
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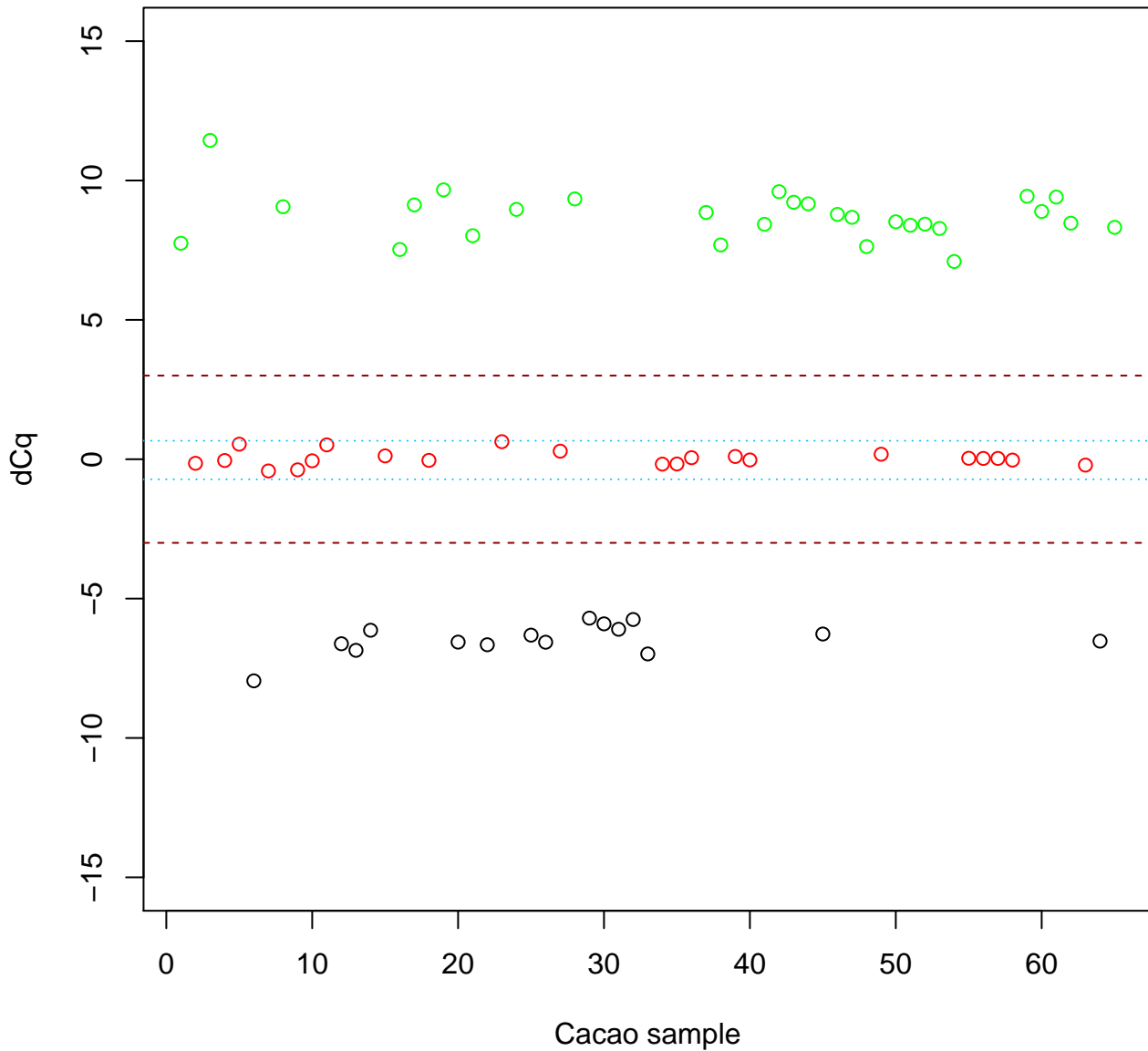
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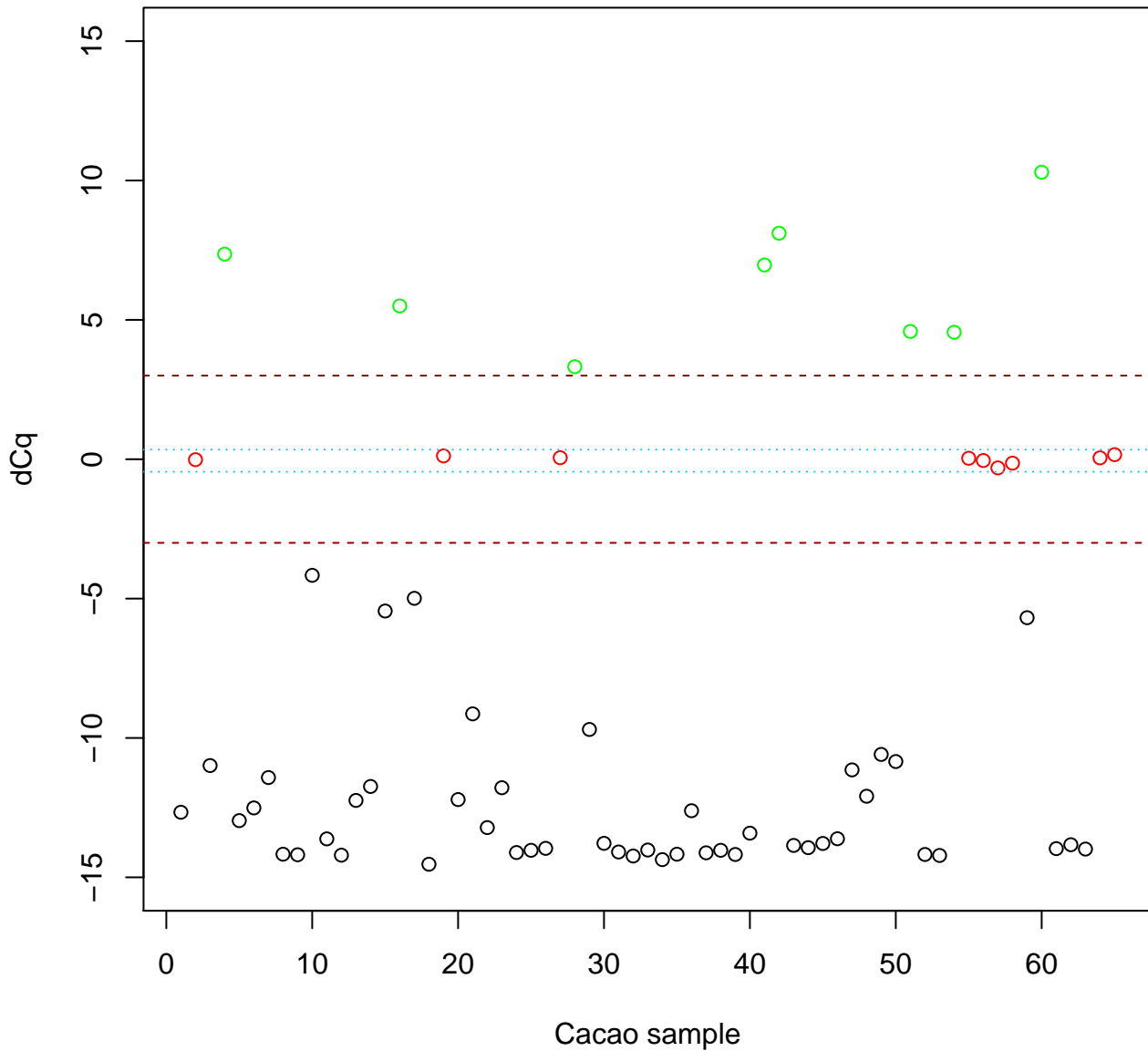
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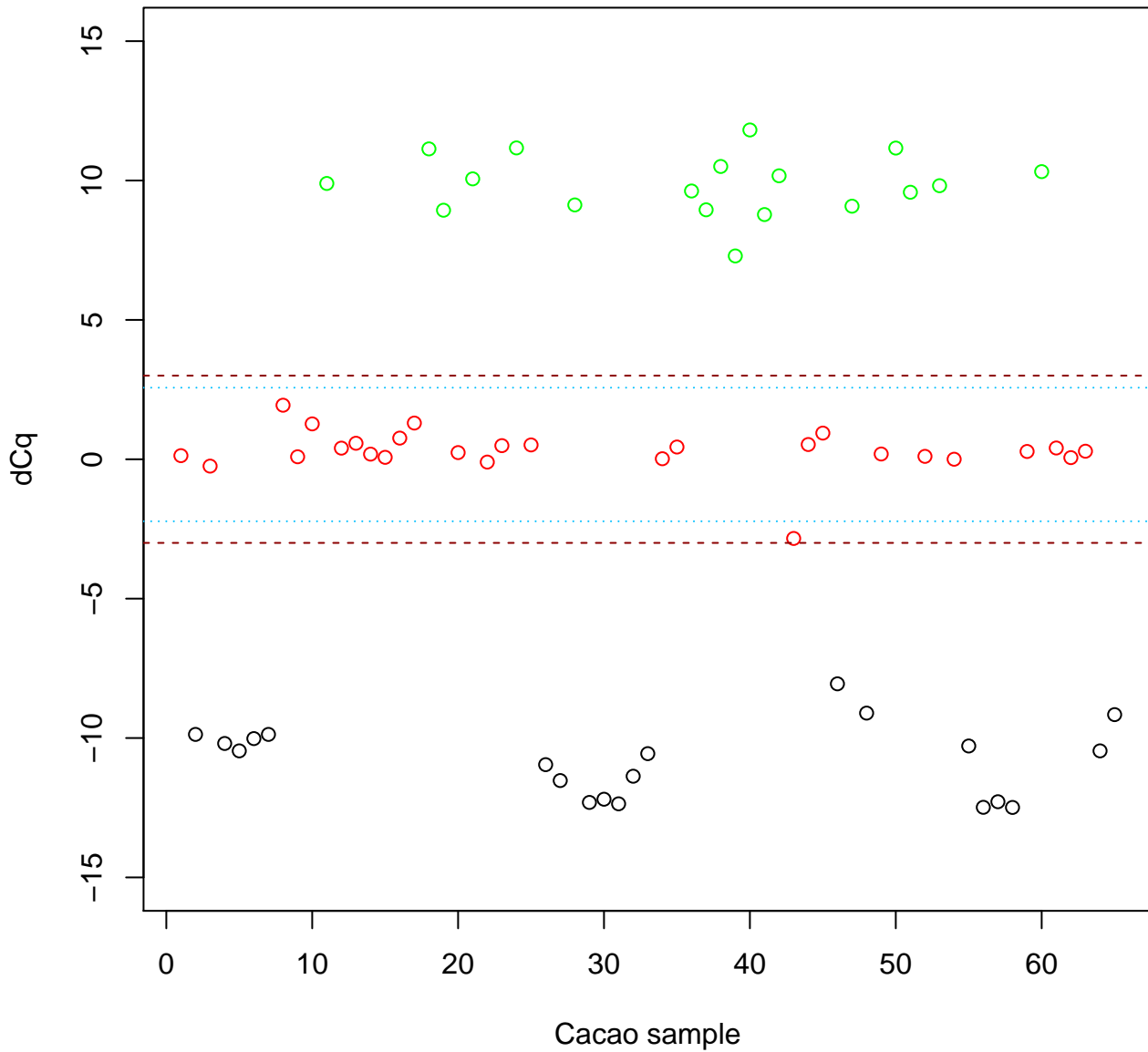
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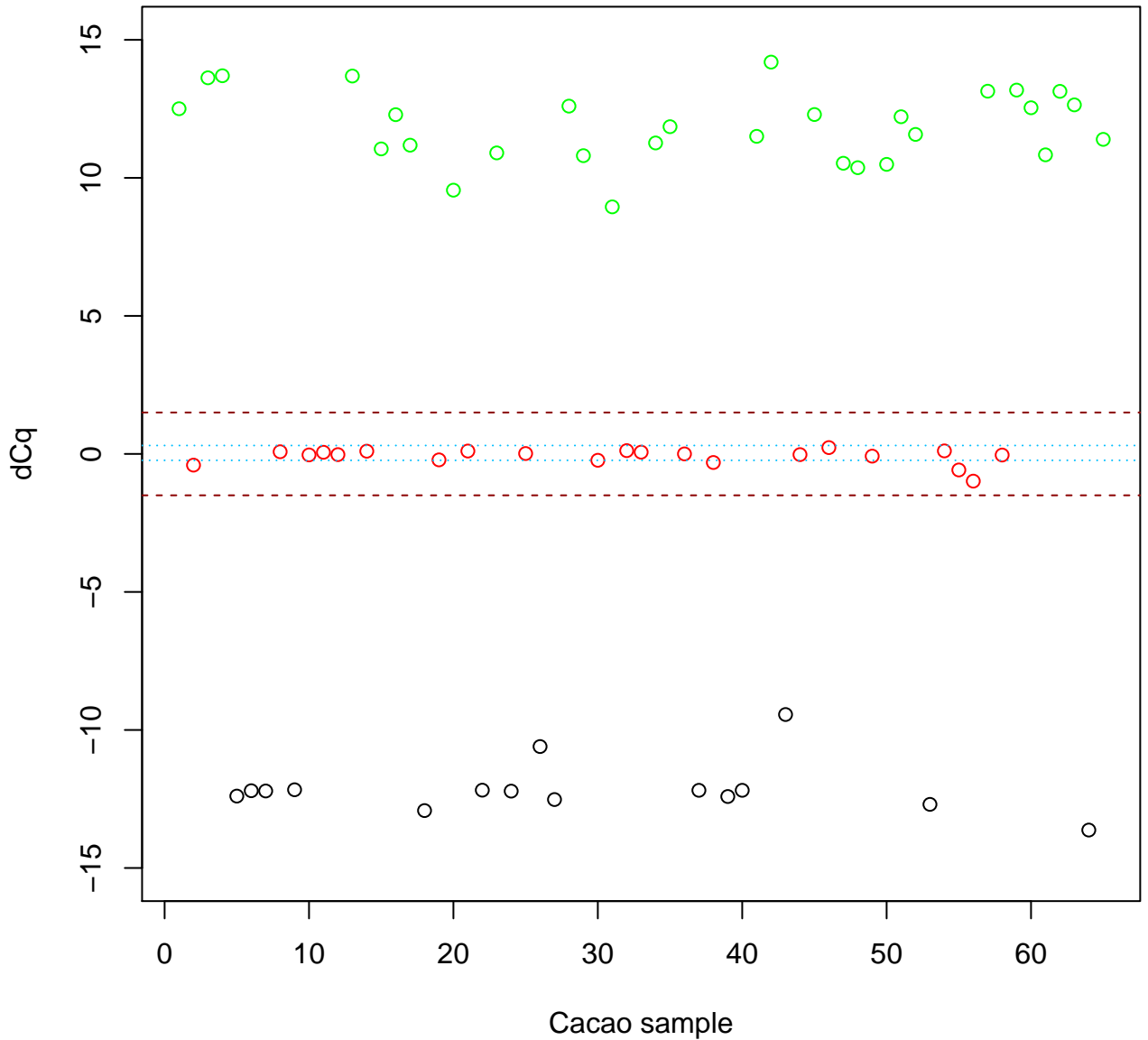
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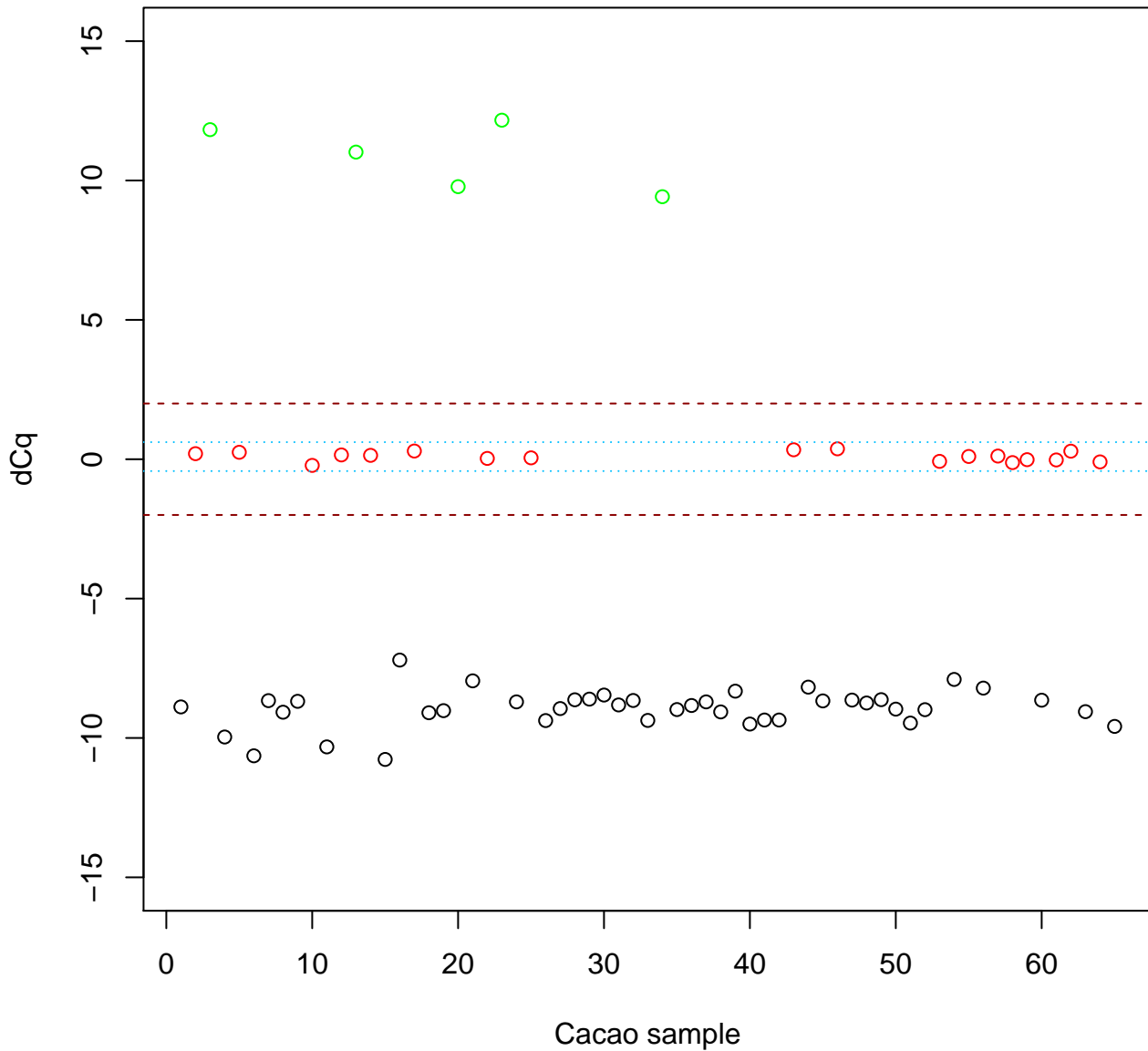
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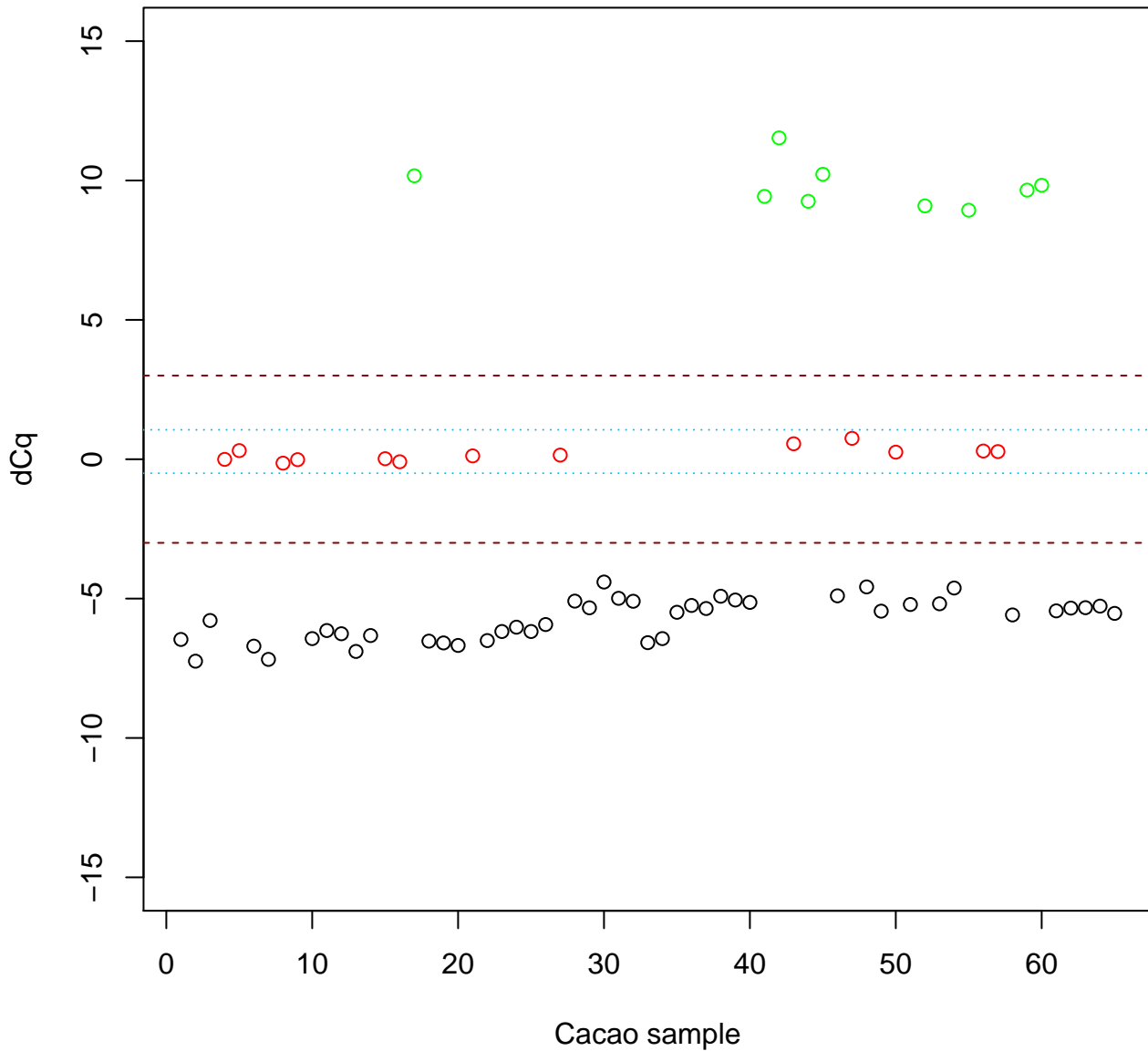
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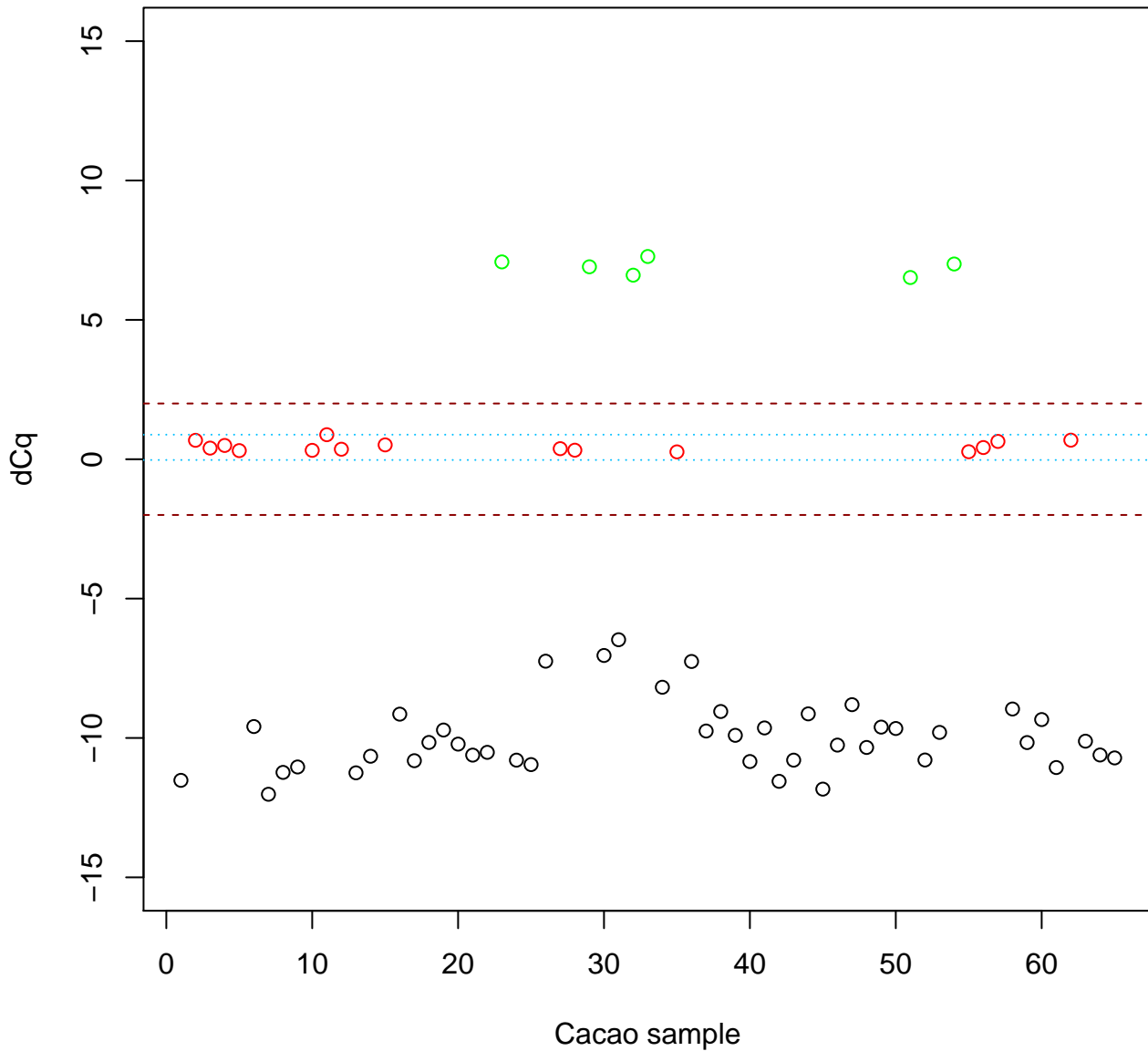
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Cacao sample
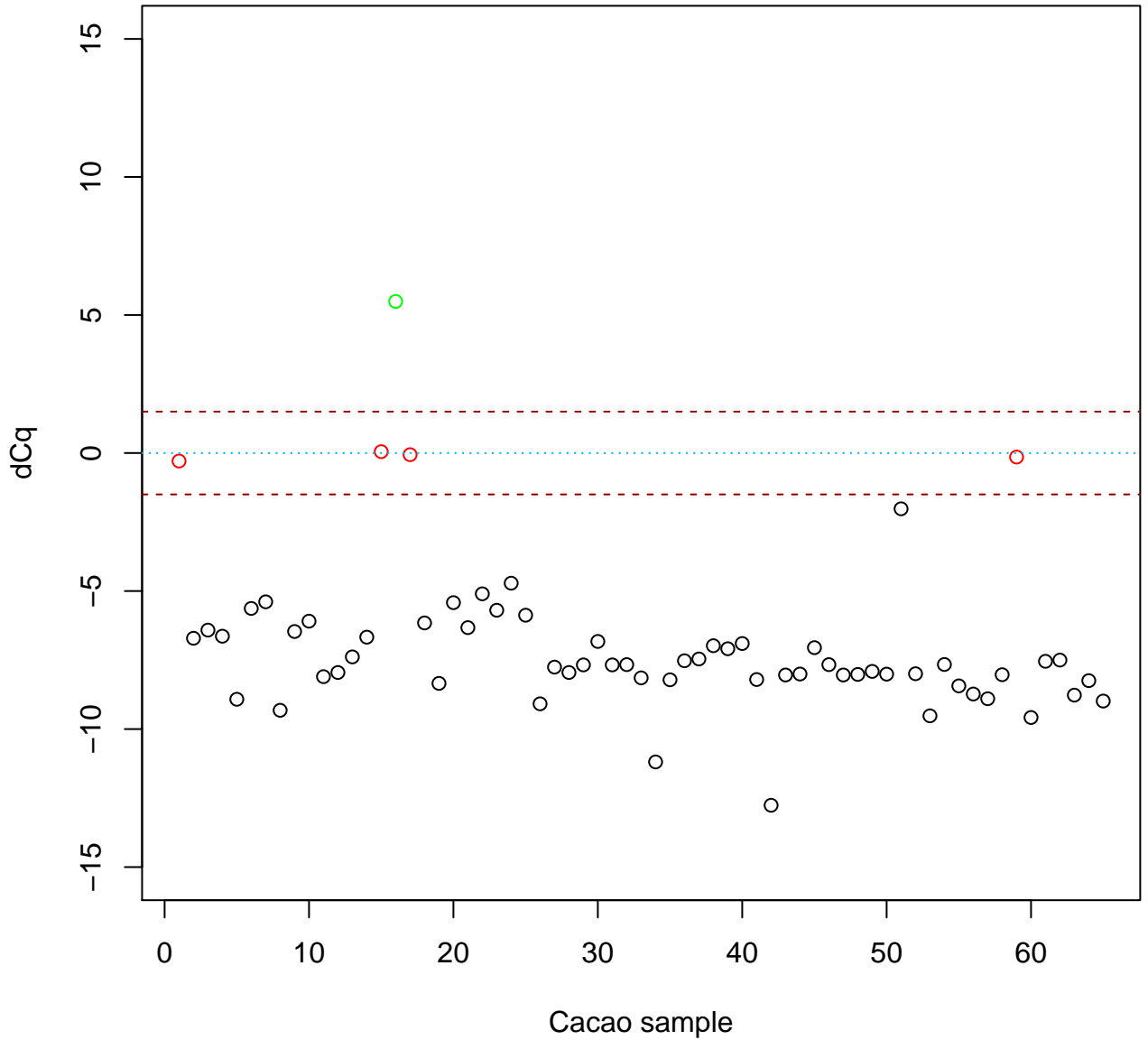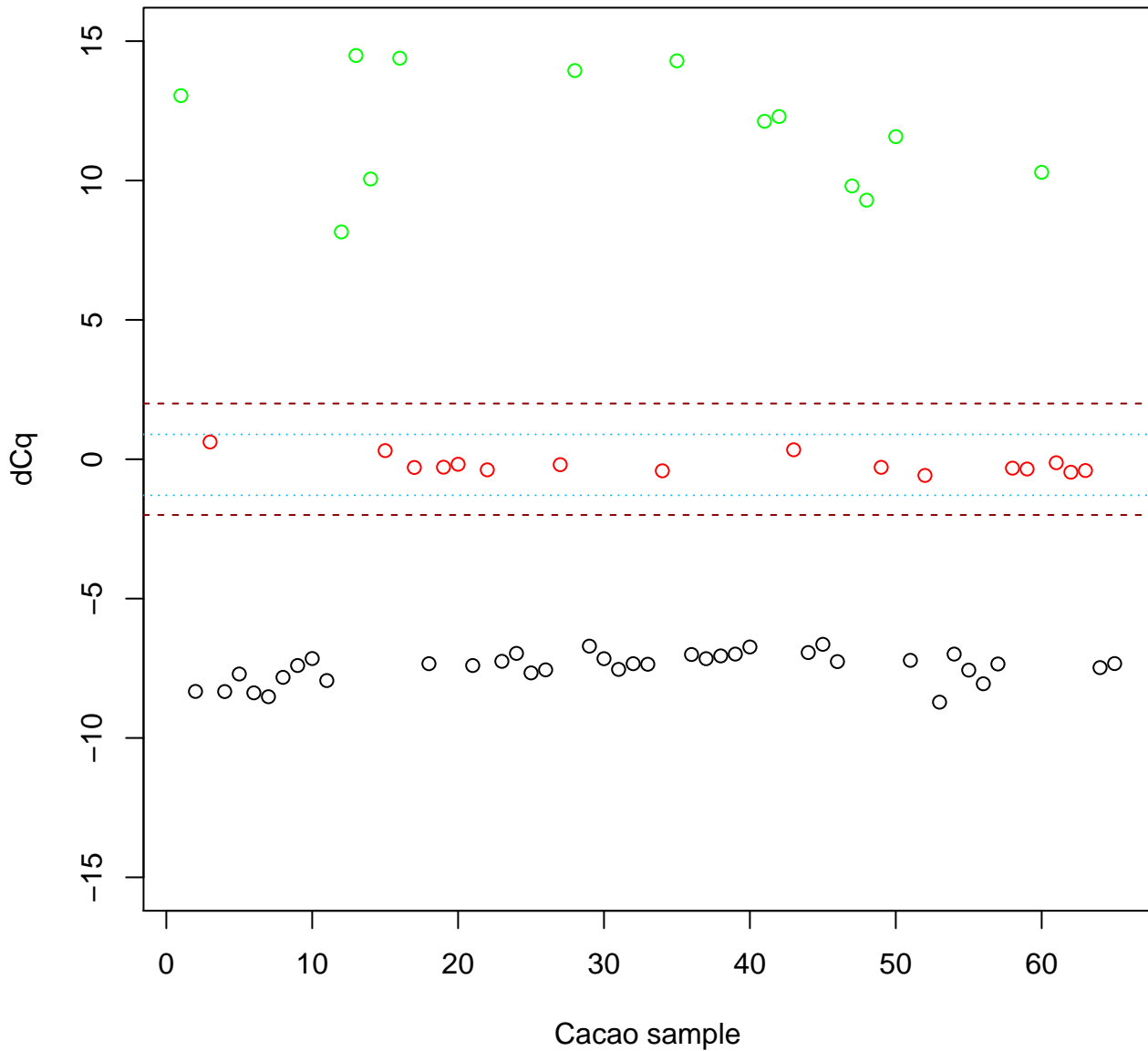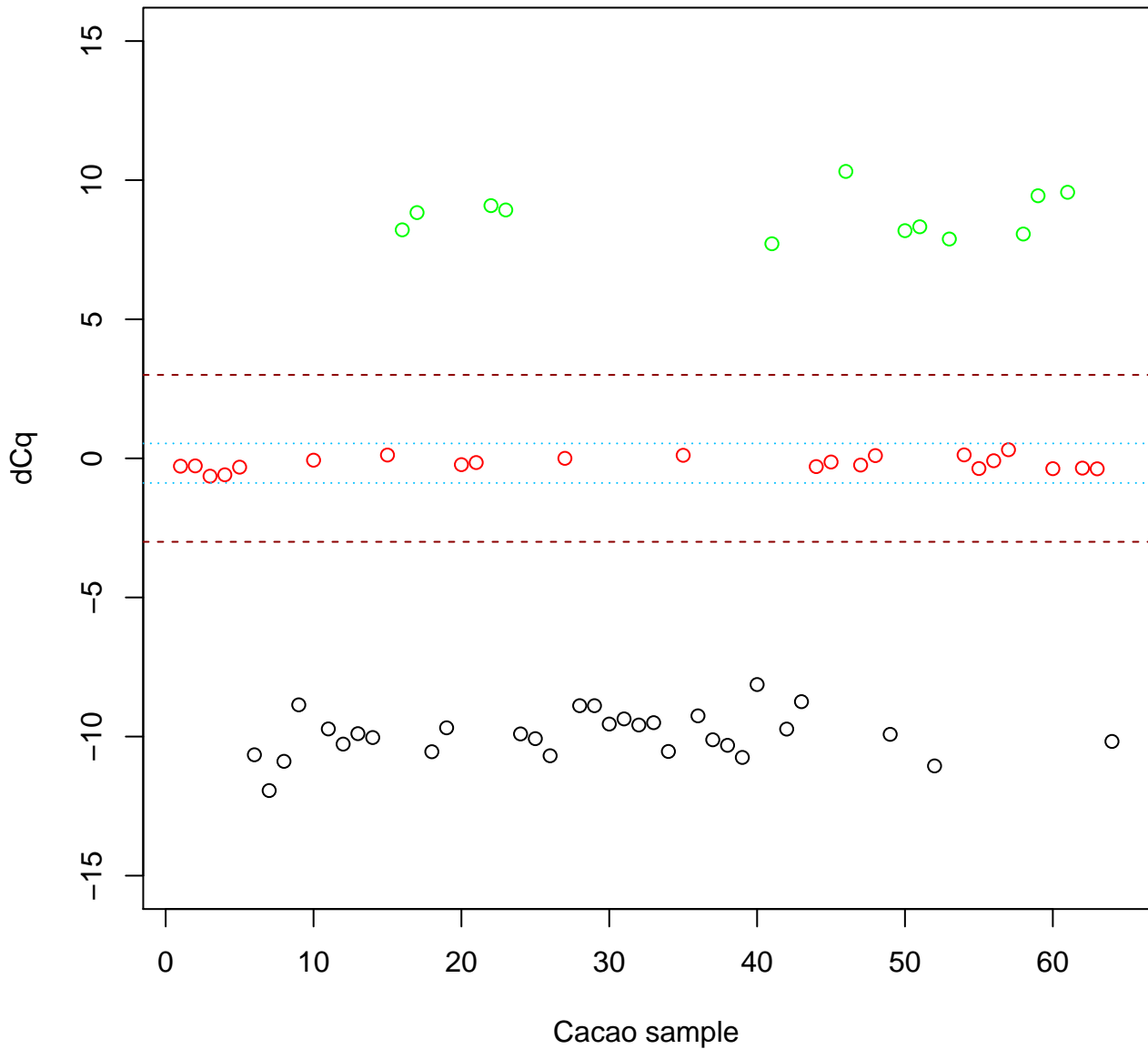
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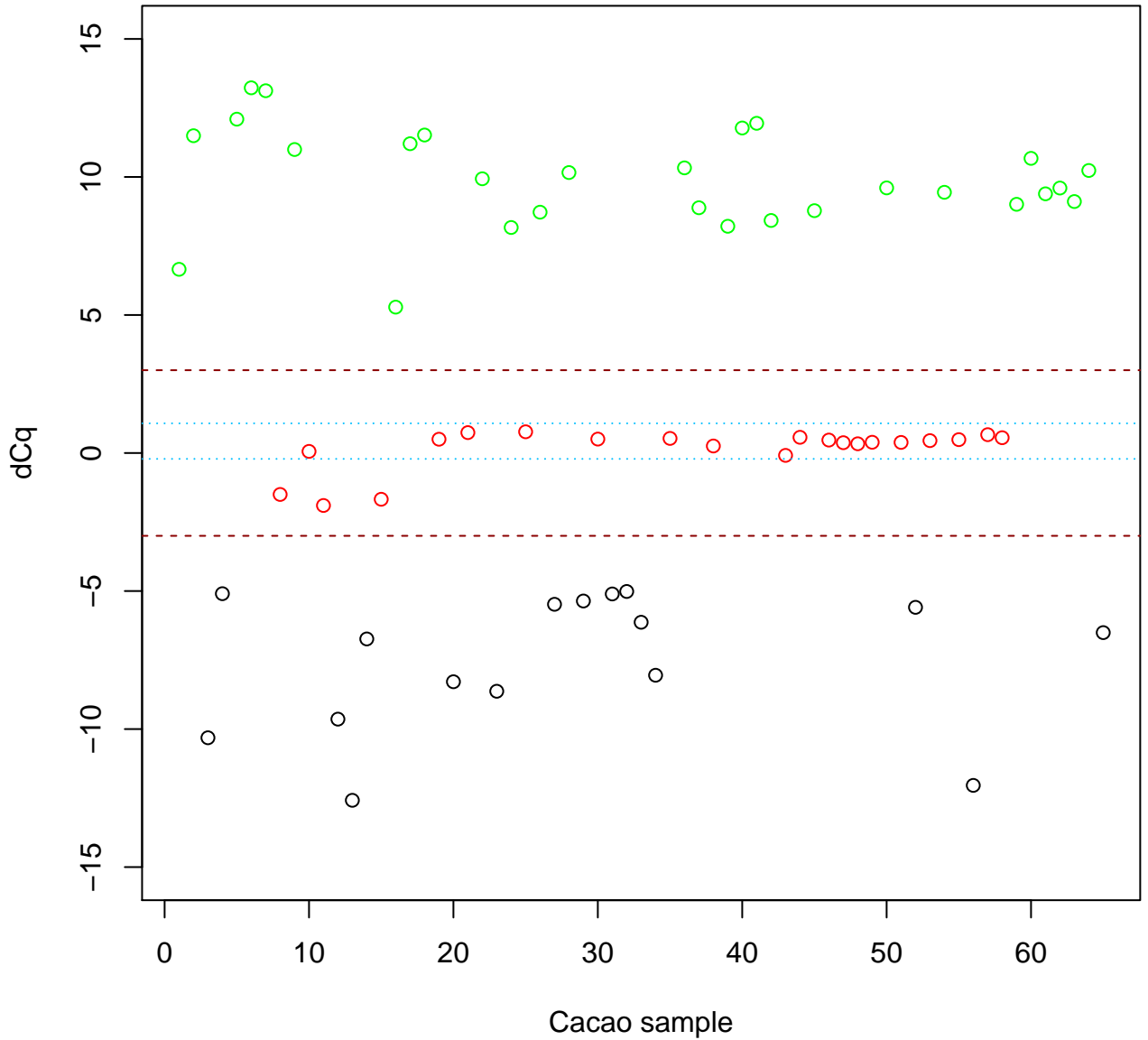
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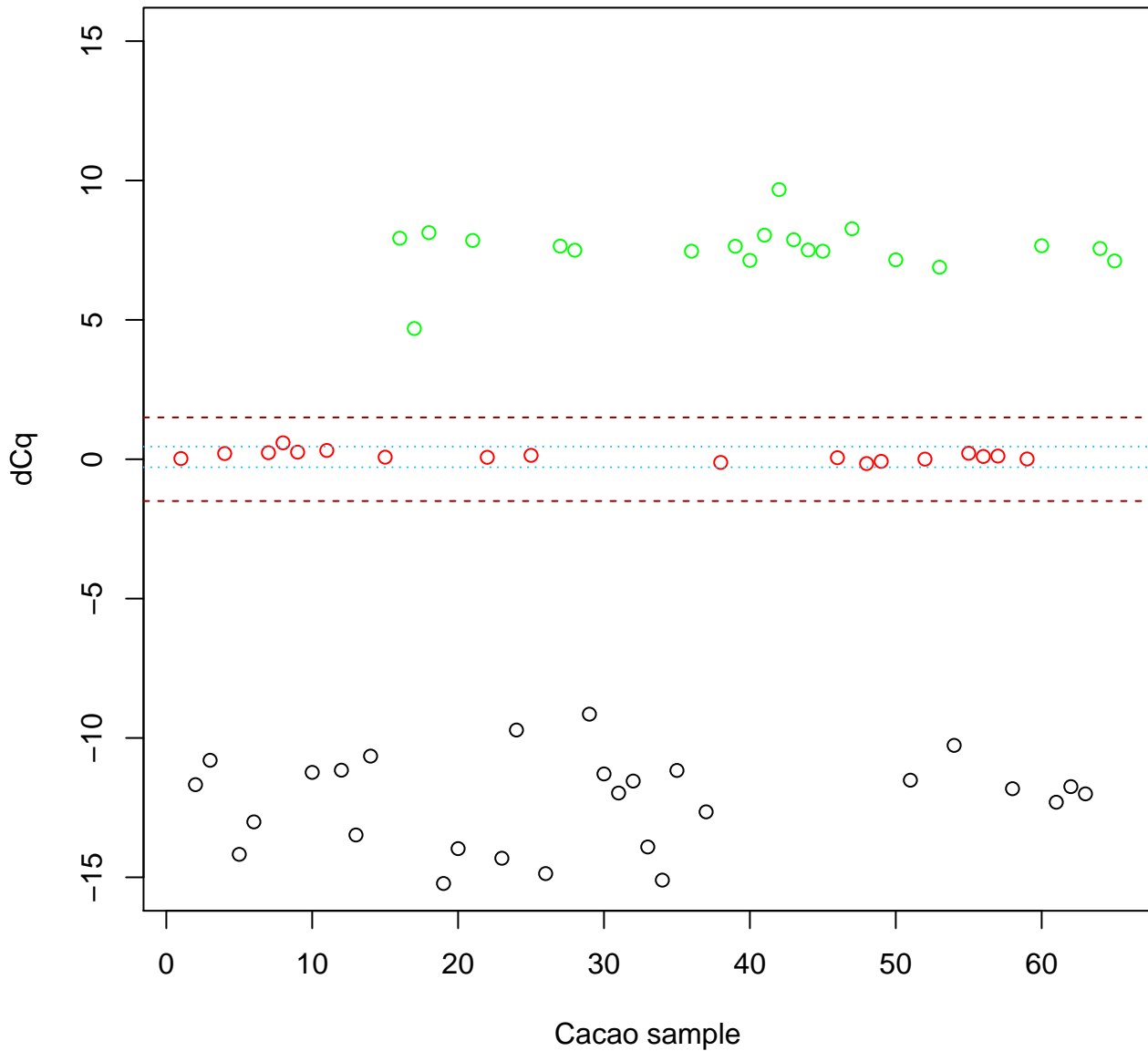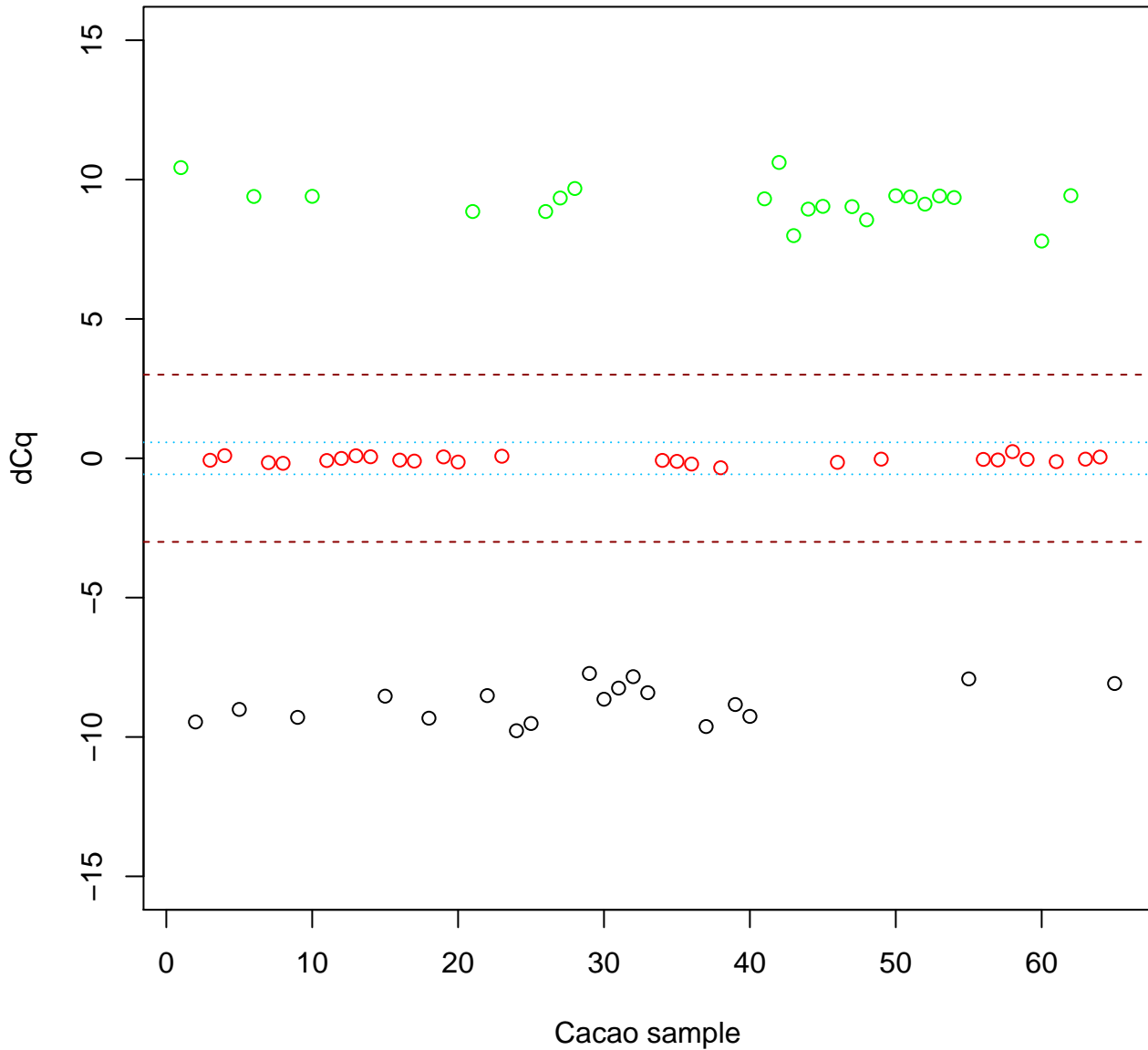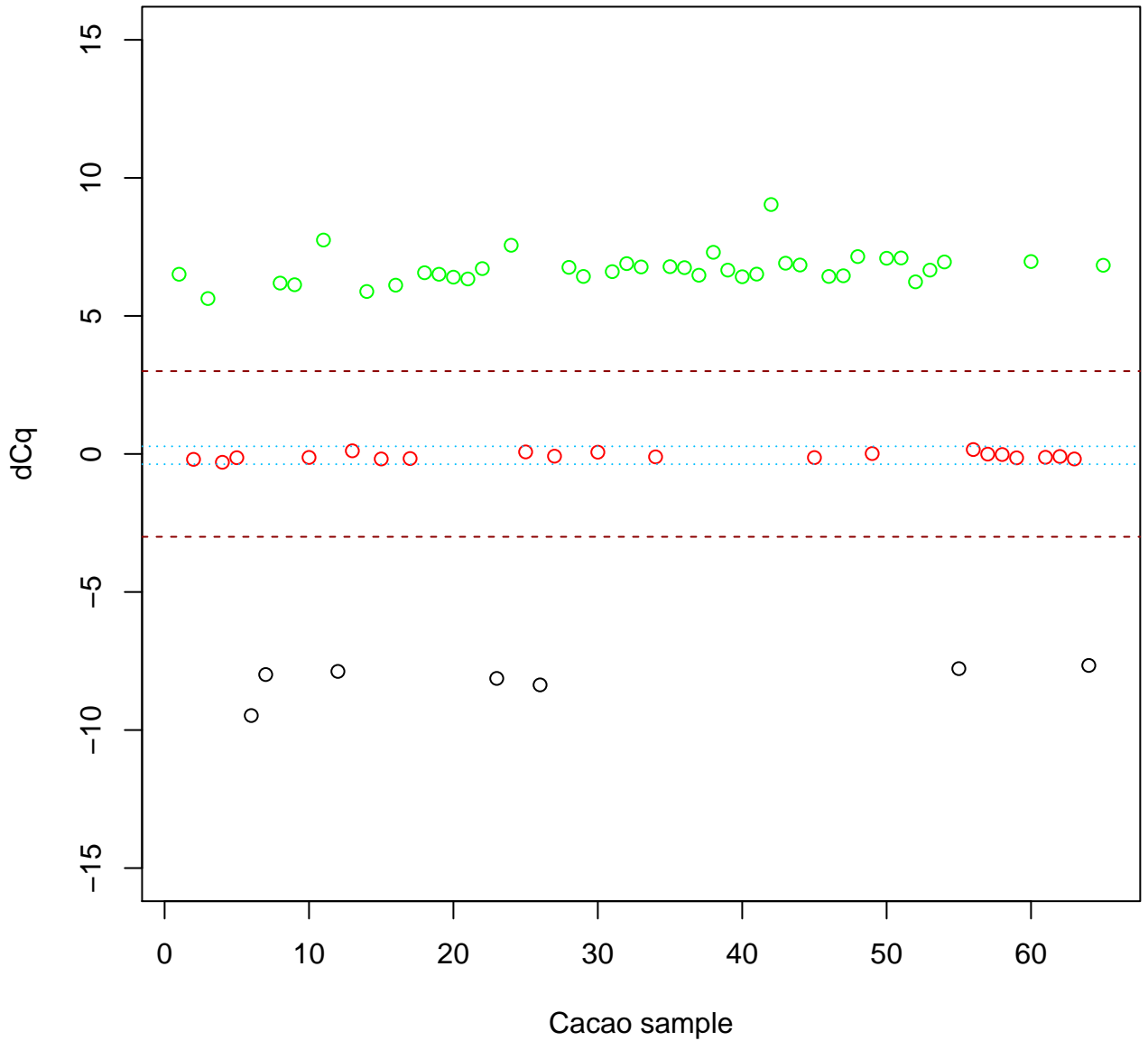
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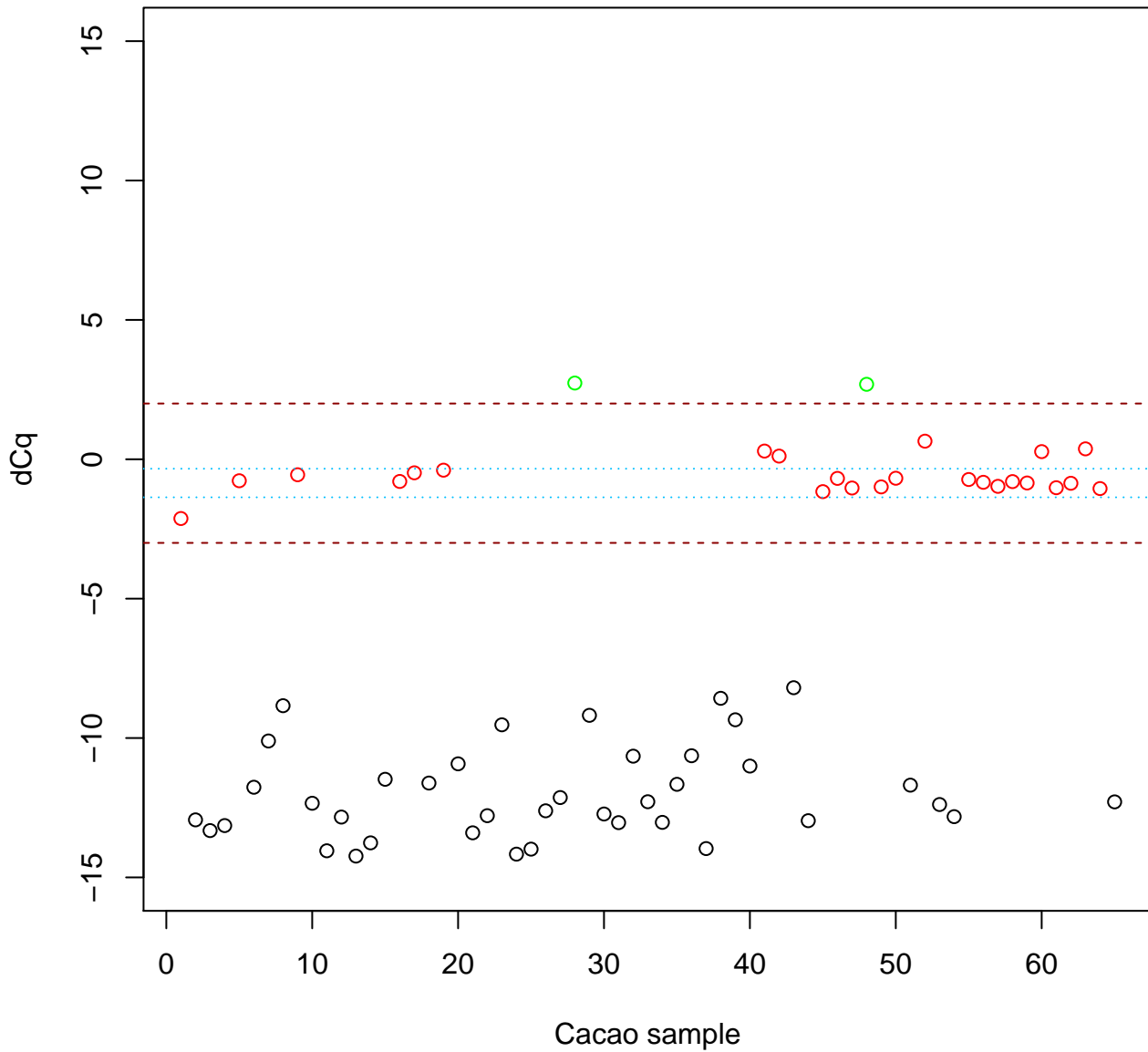
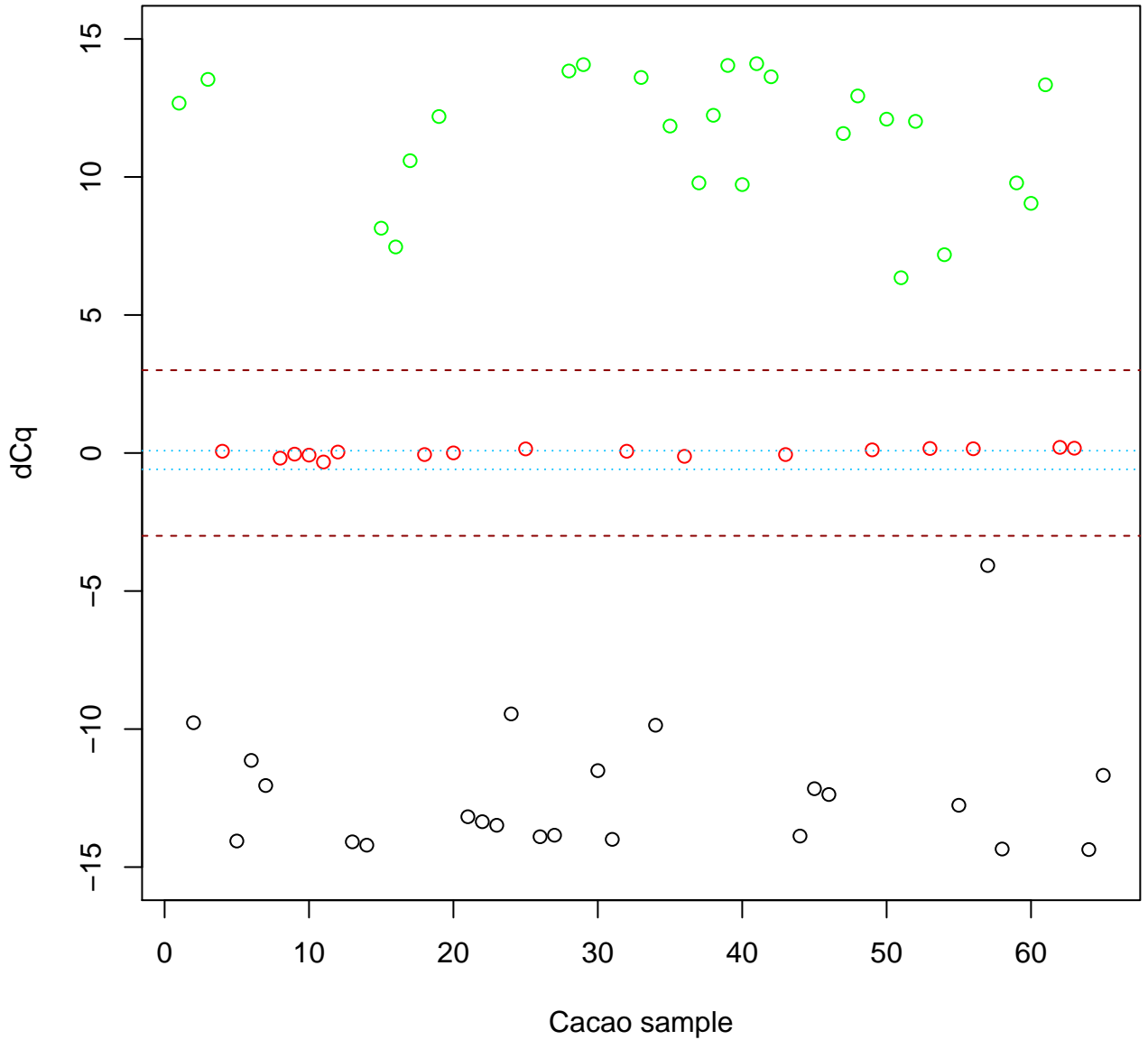# TcSNP891
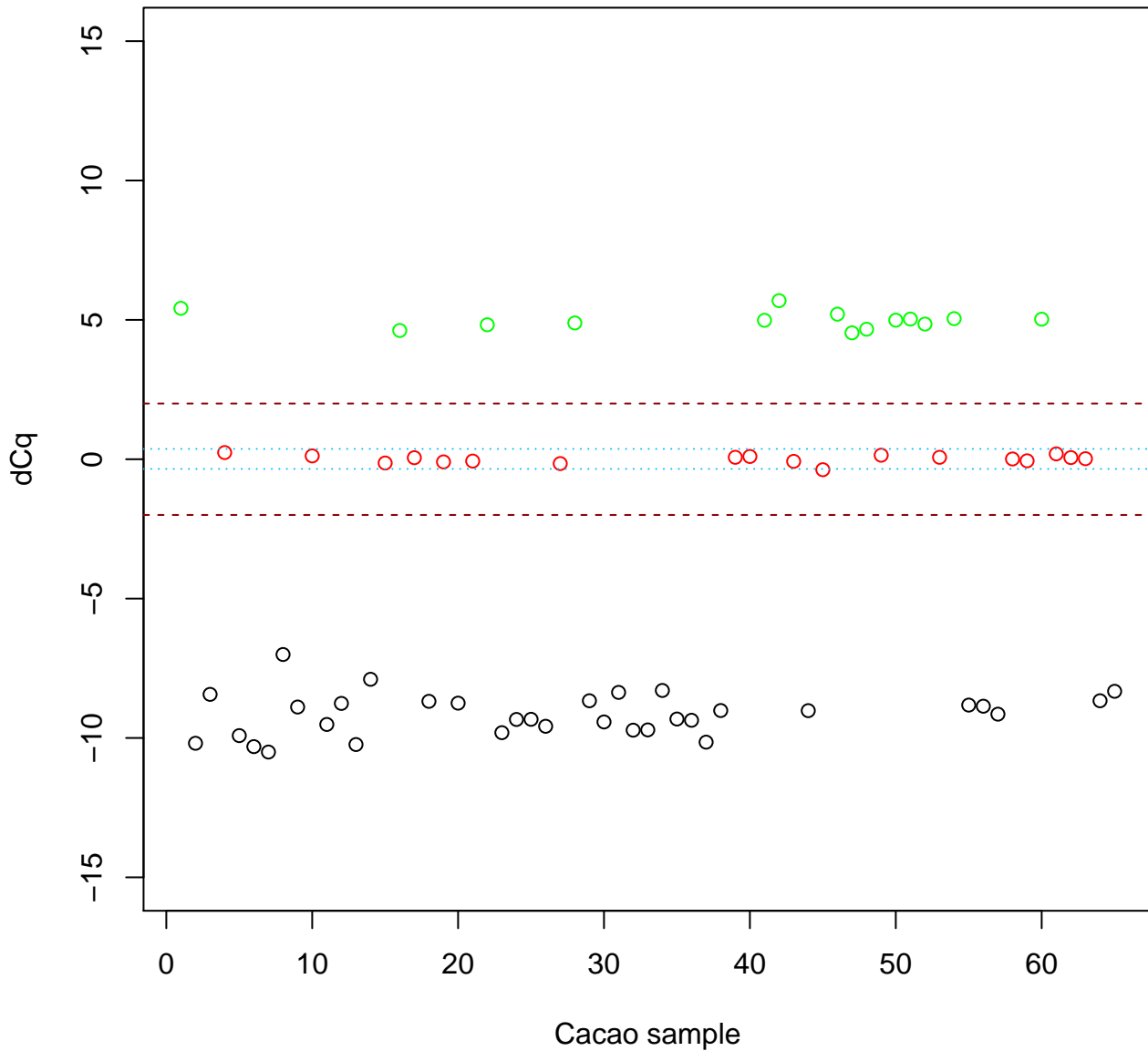
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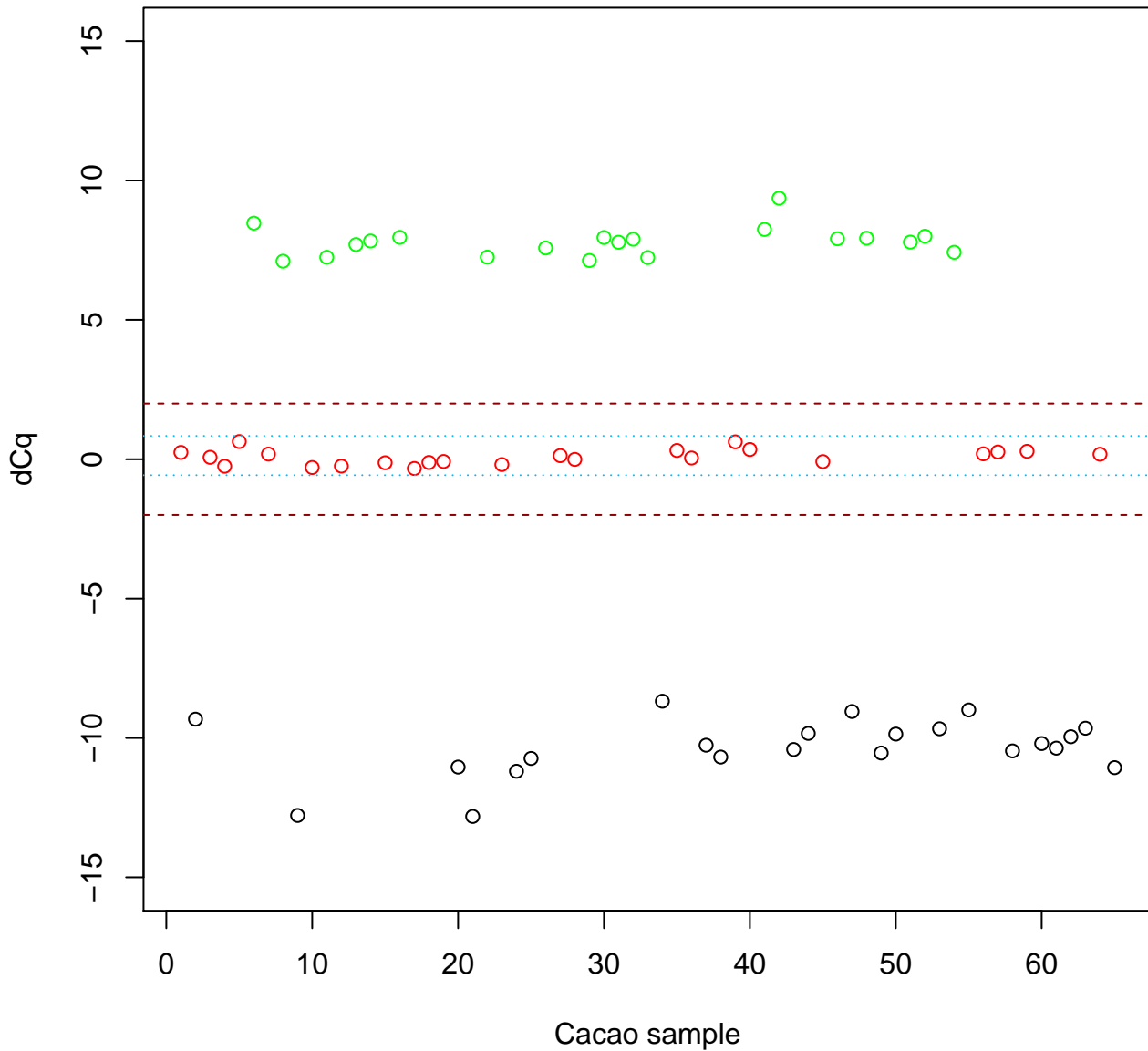
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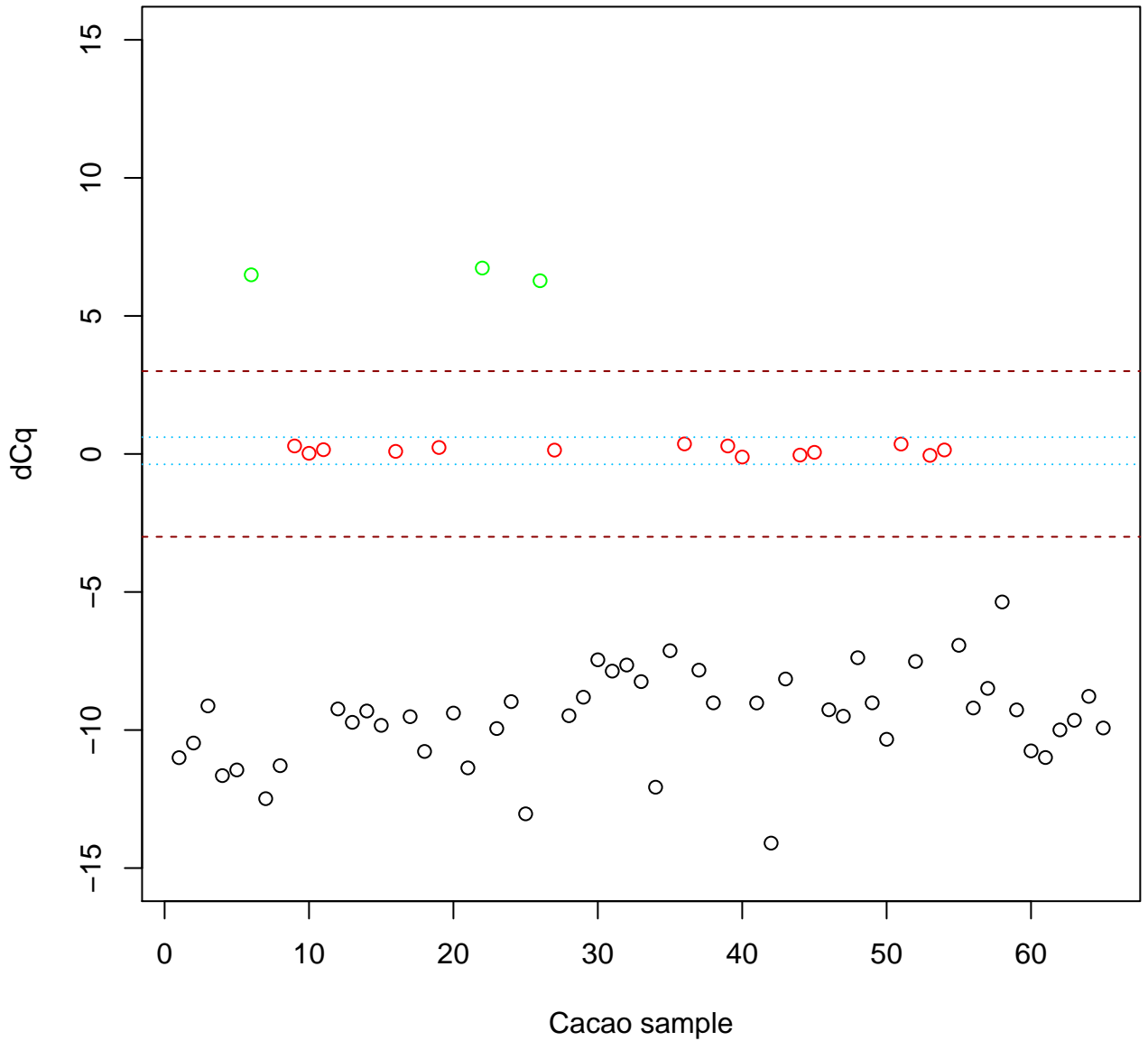
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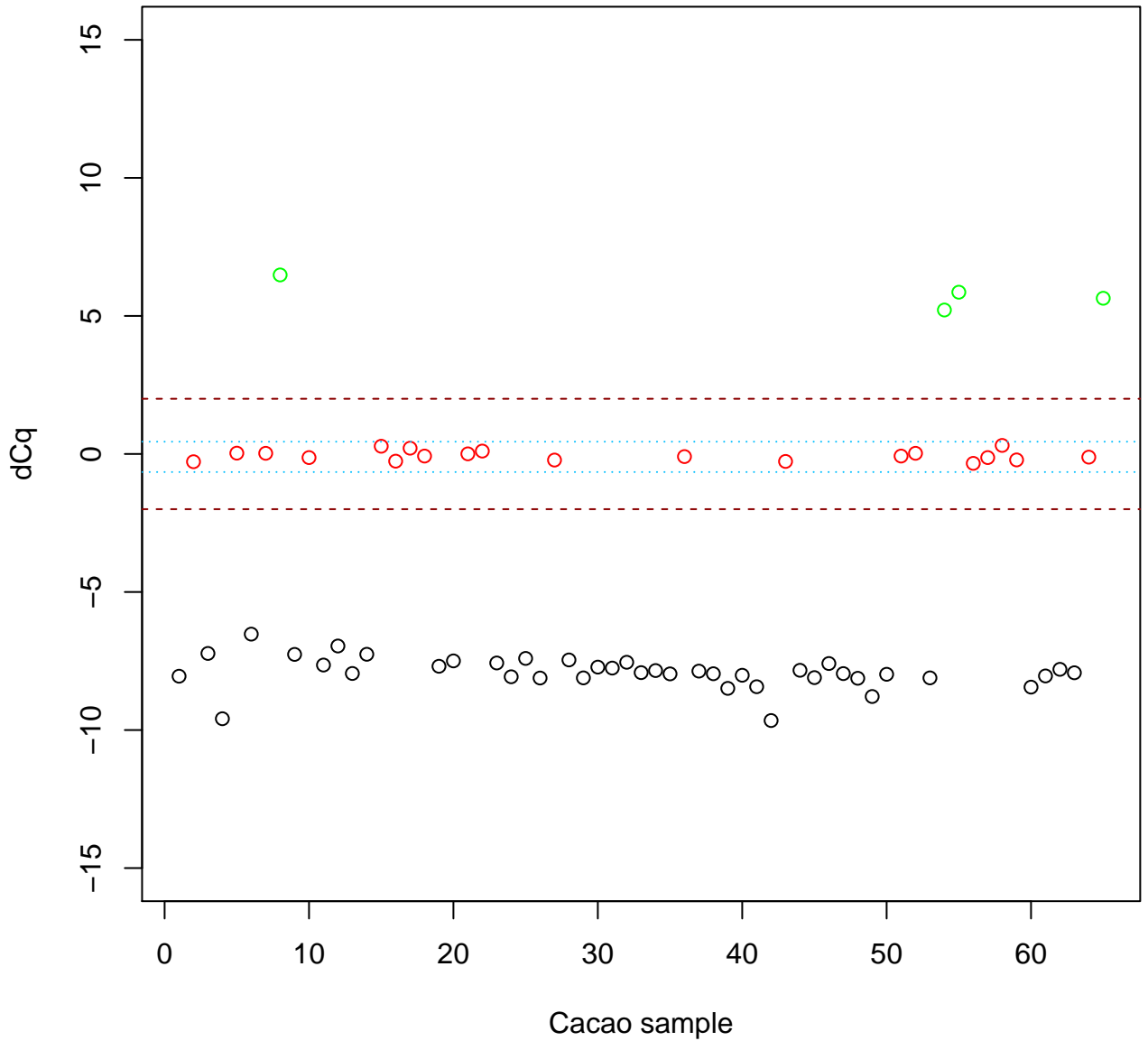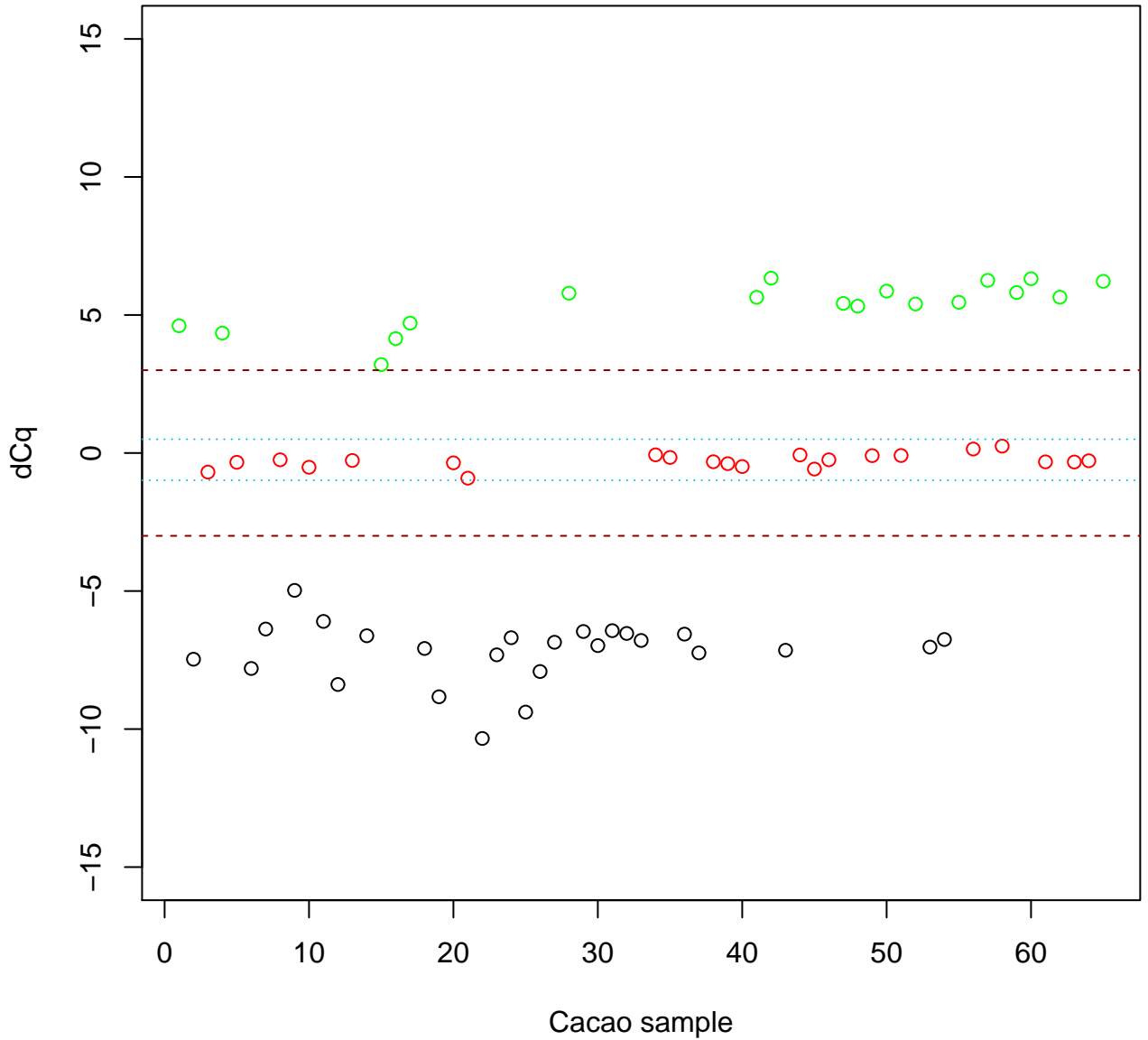
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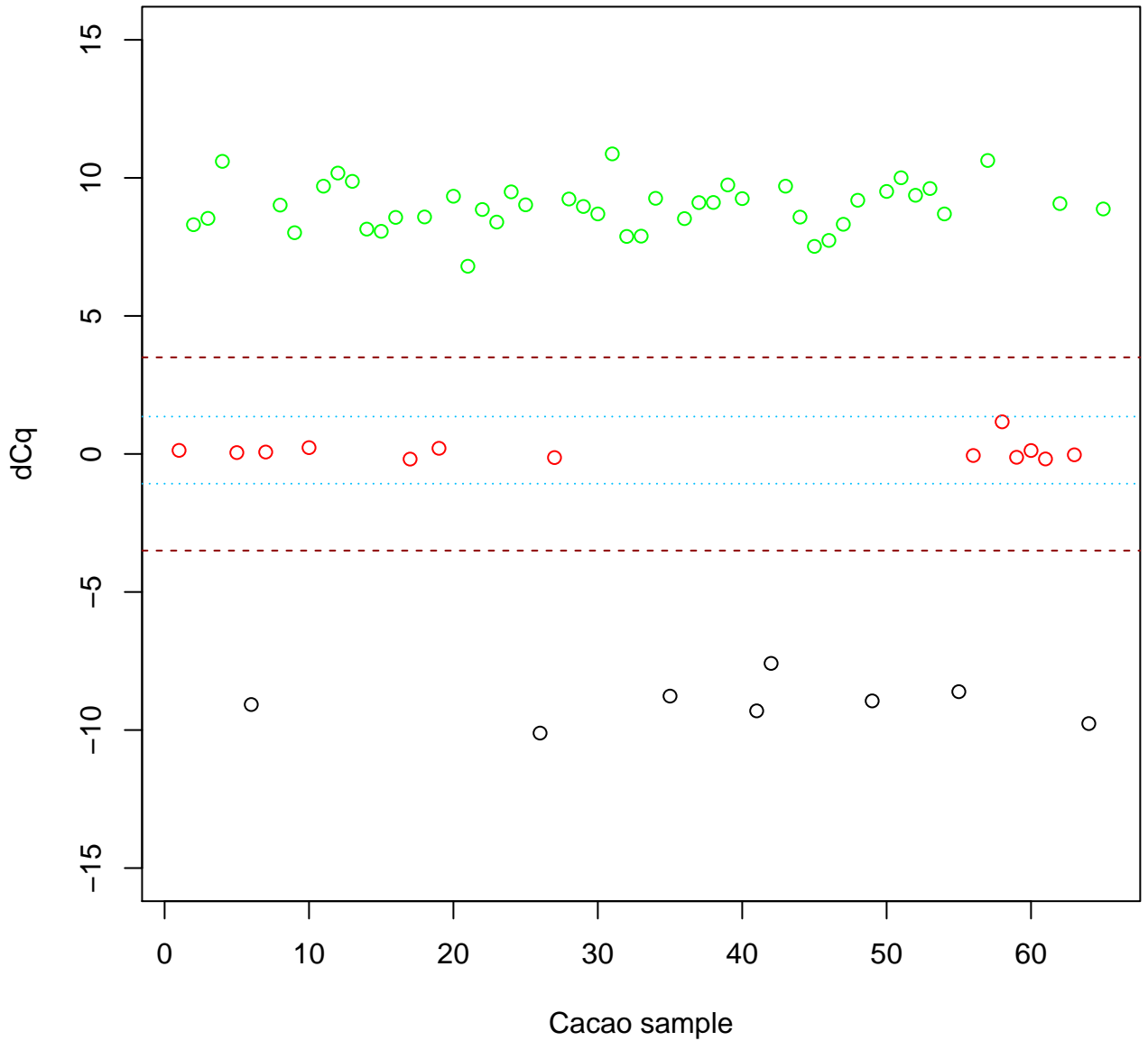
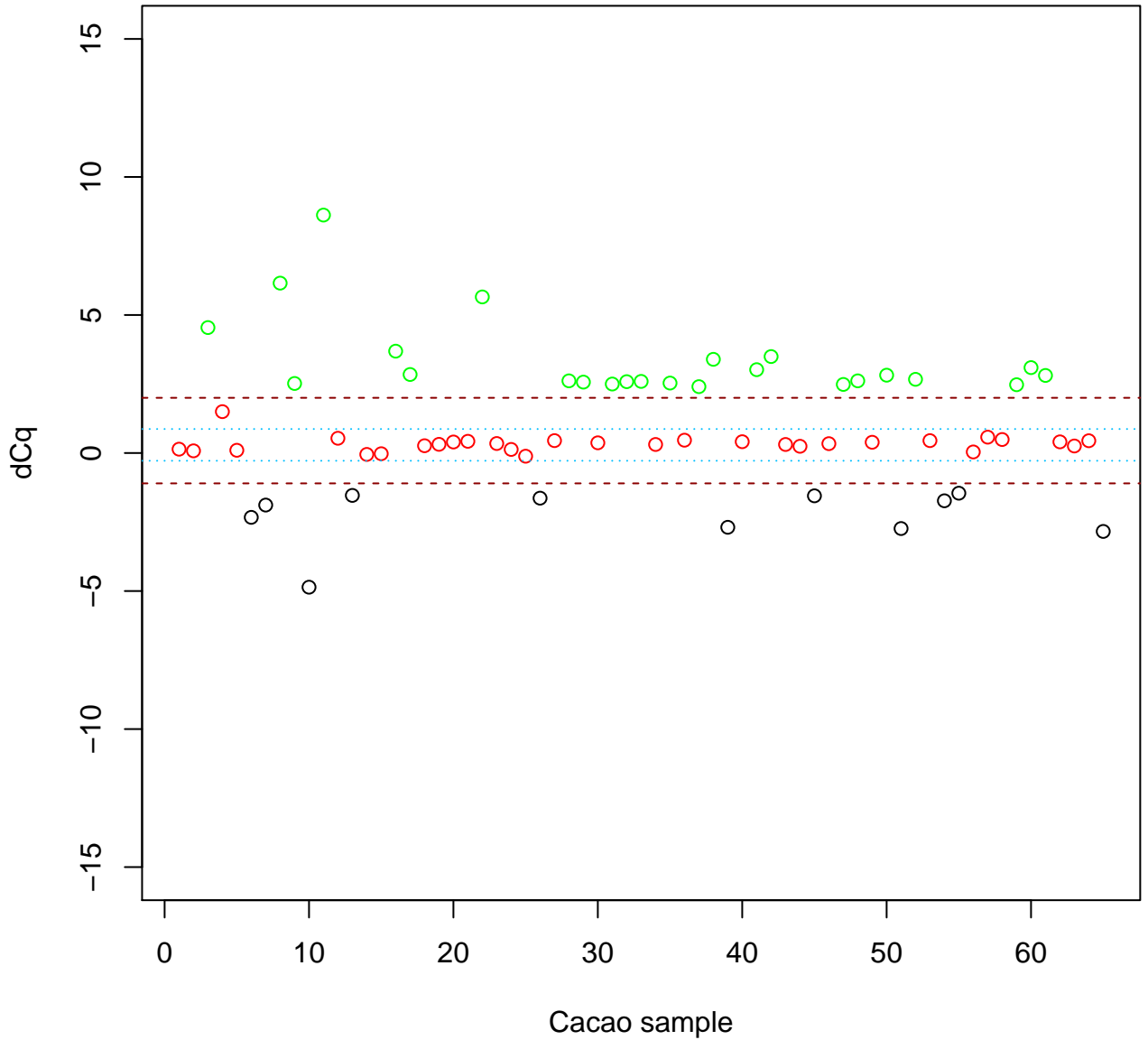# TcSNP1126
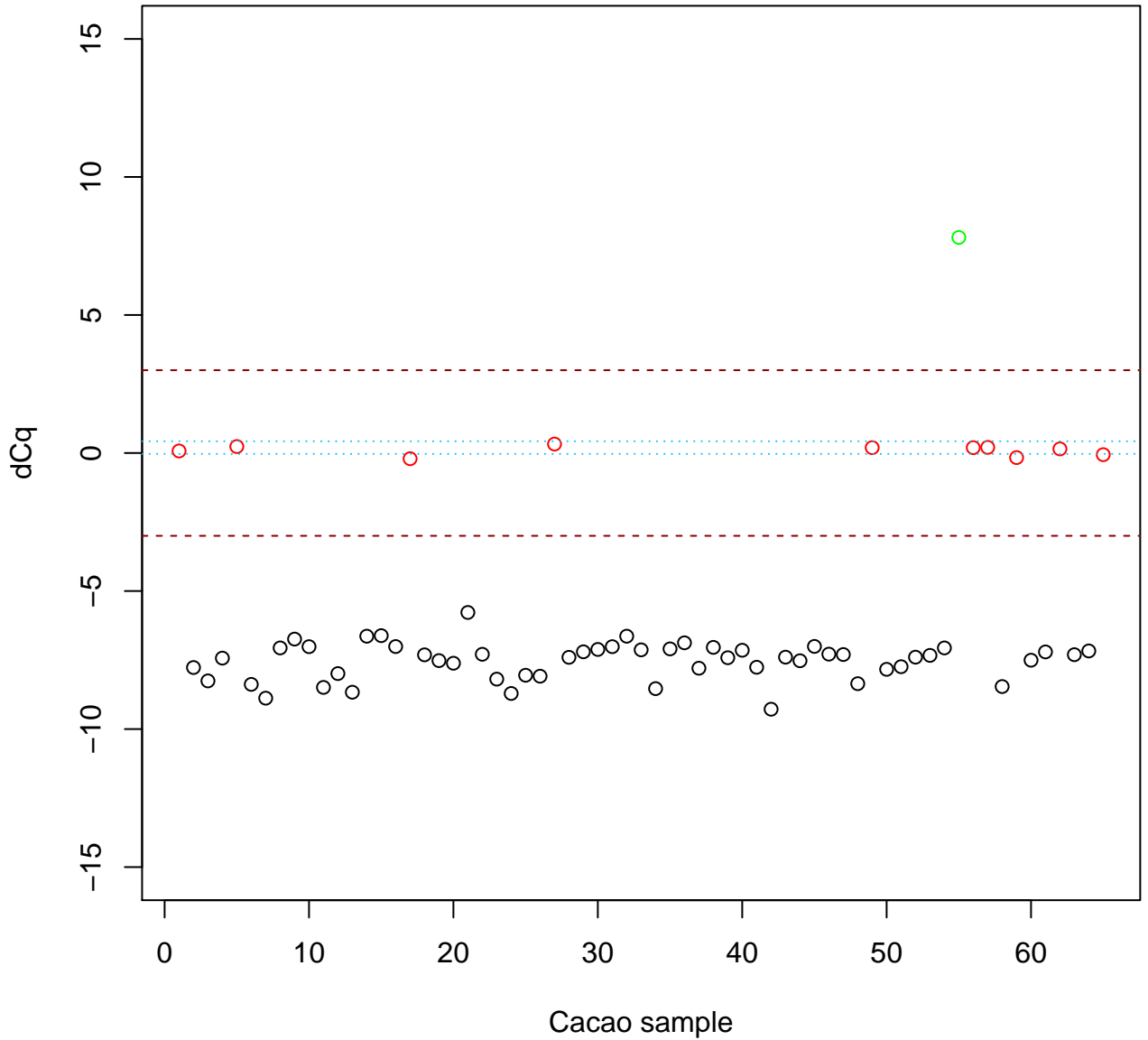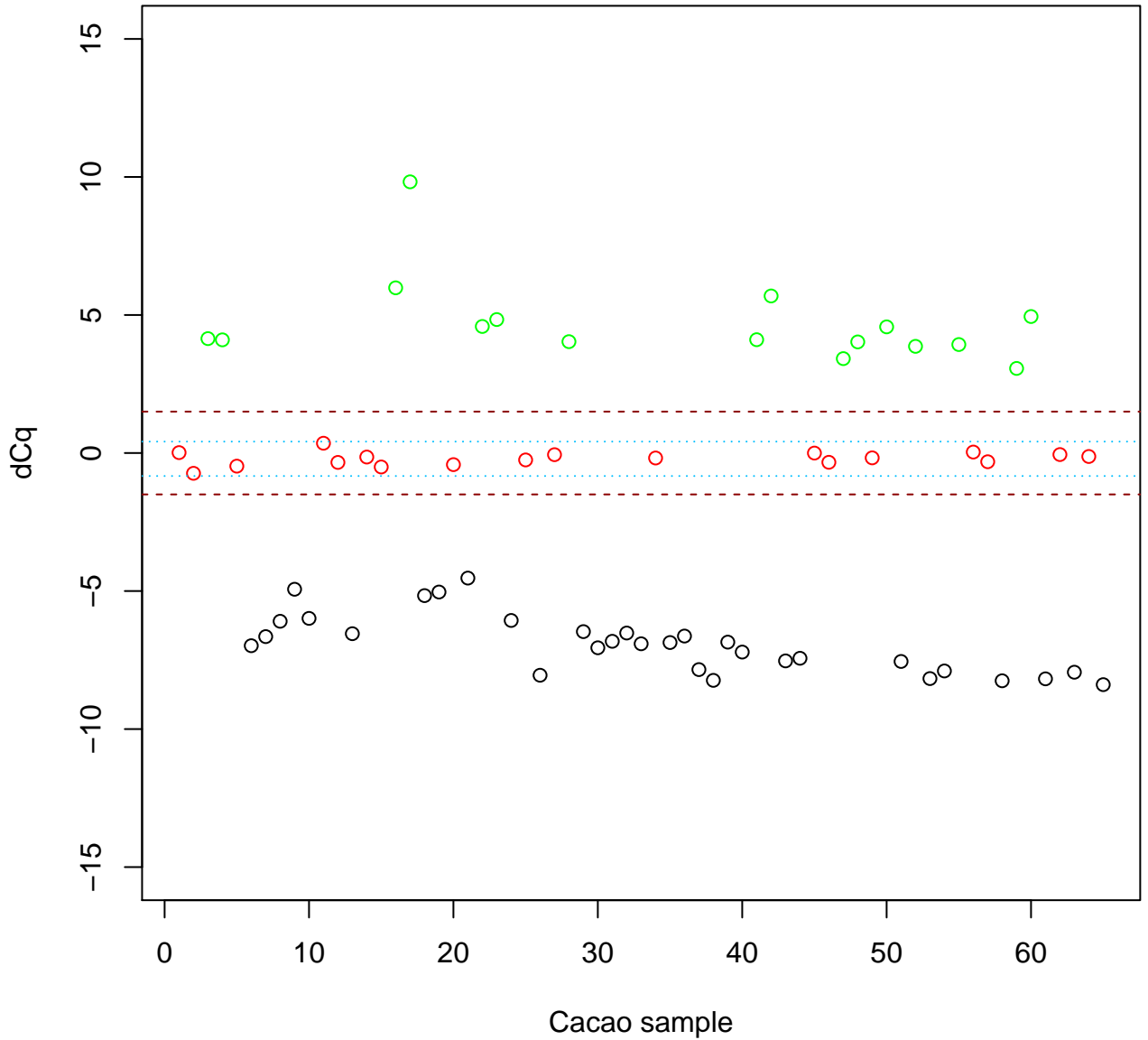
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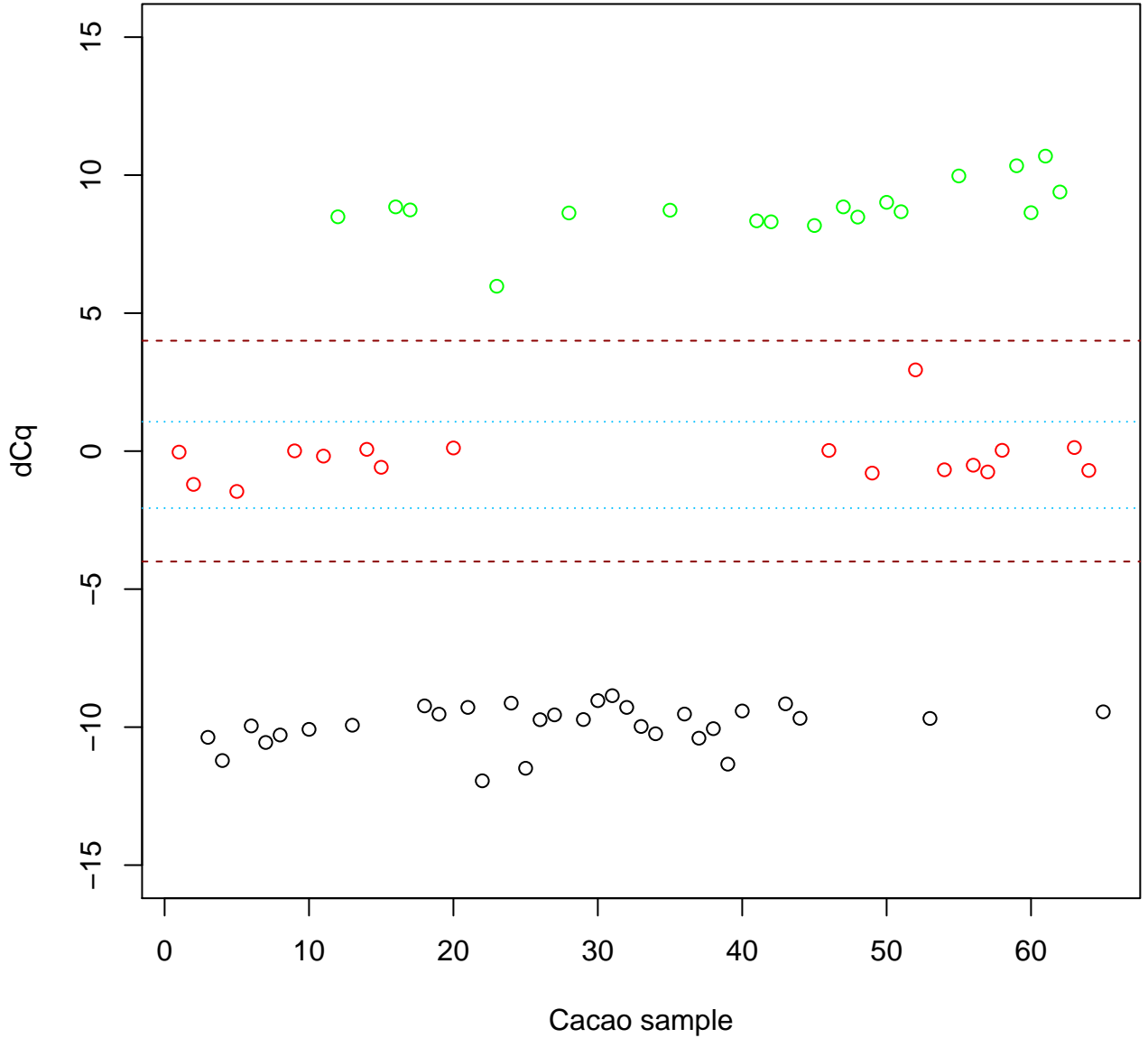
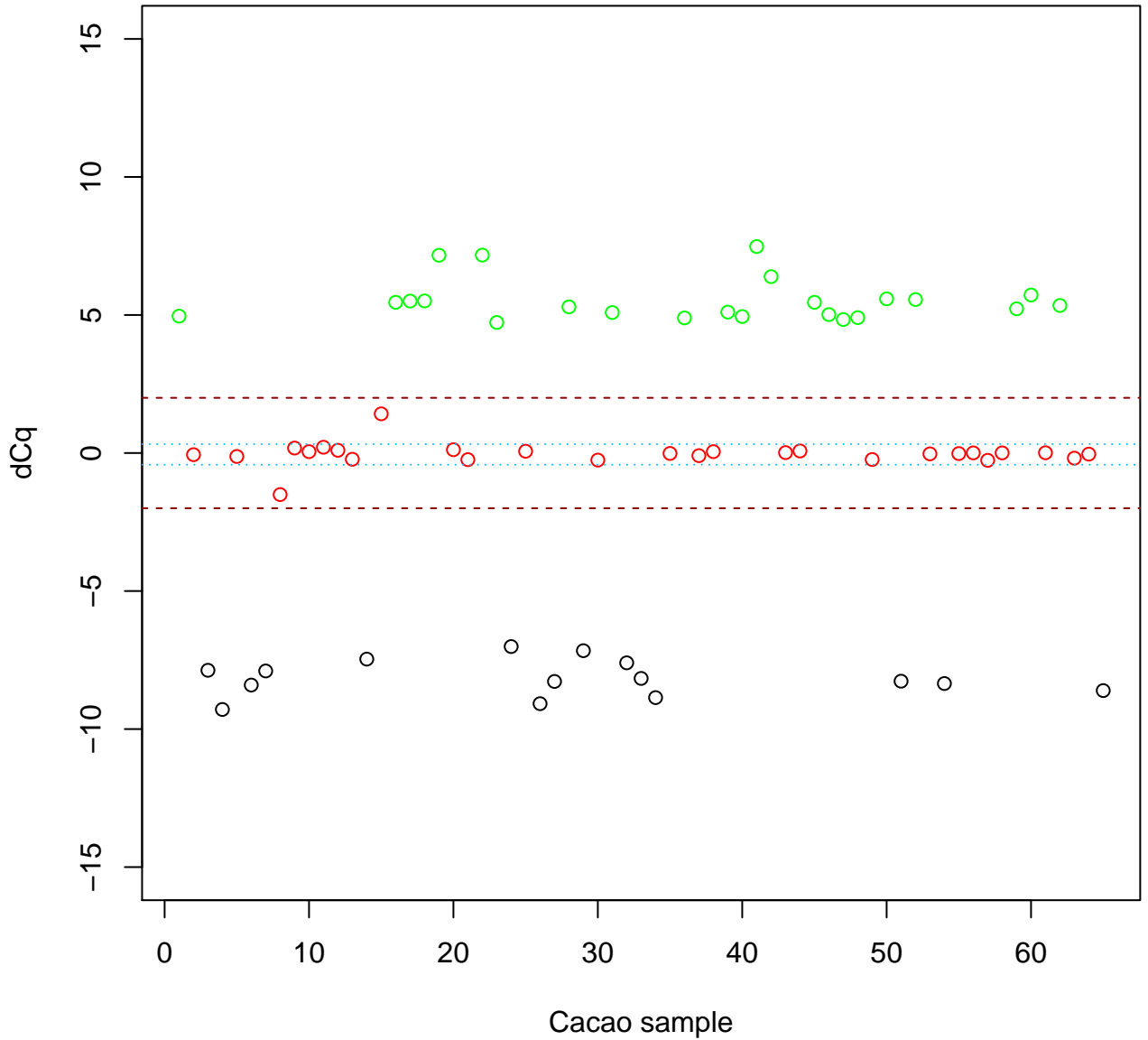# TcSNP1439

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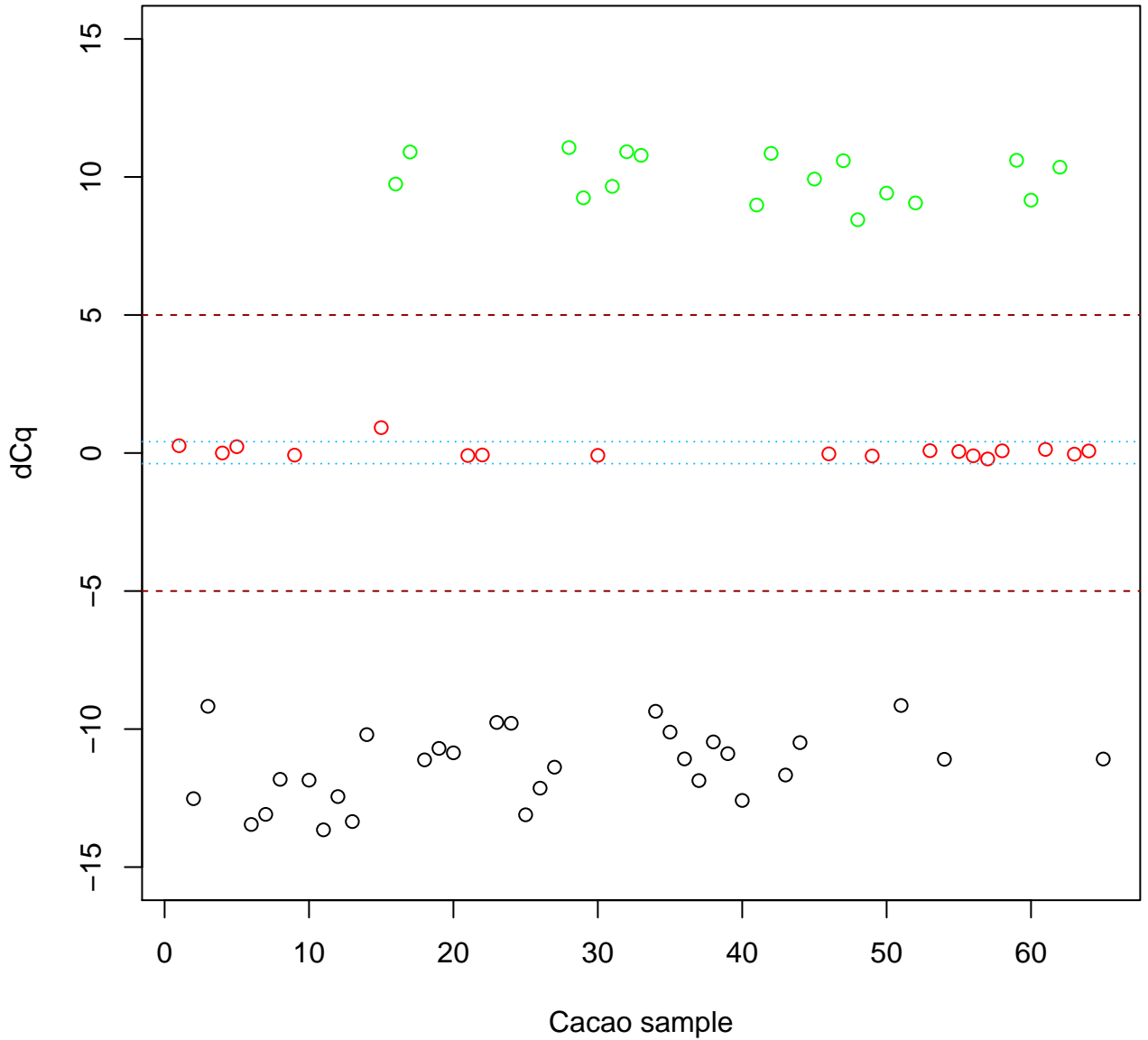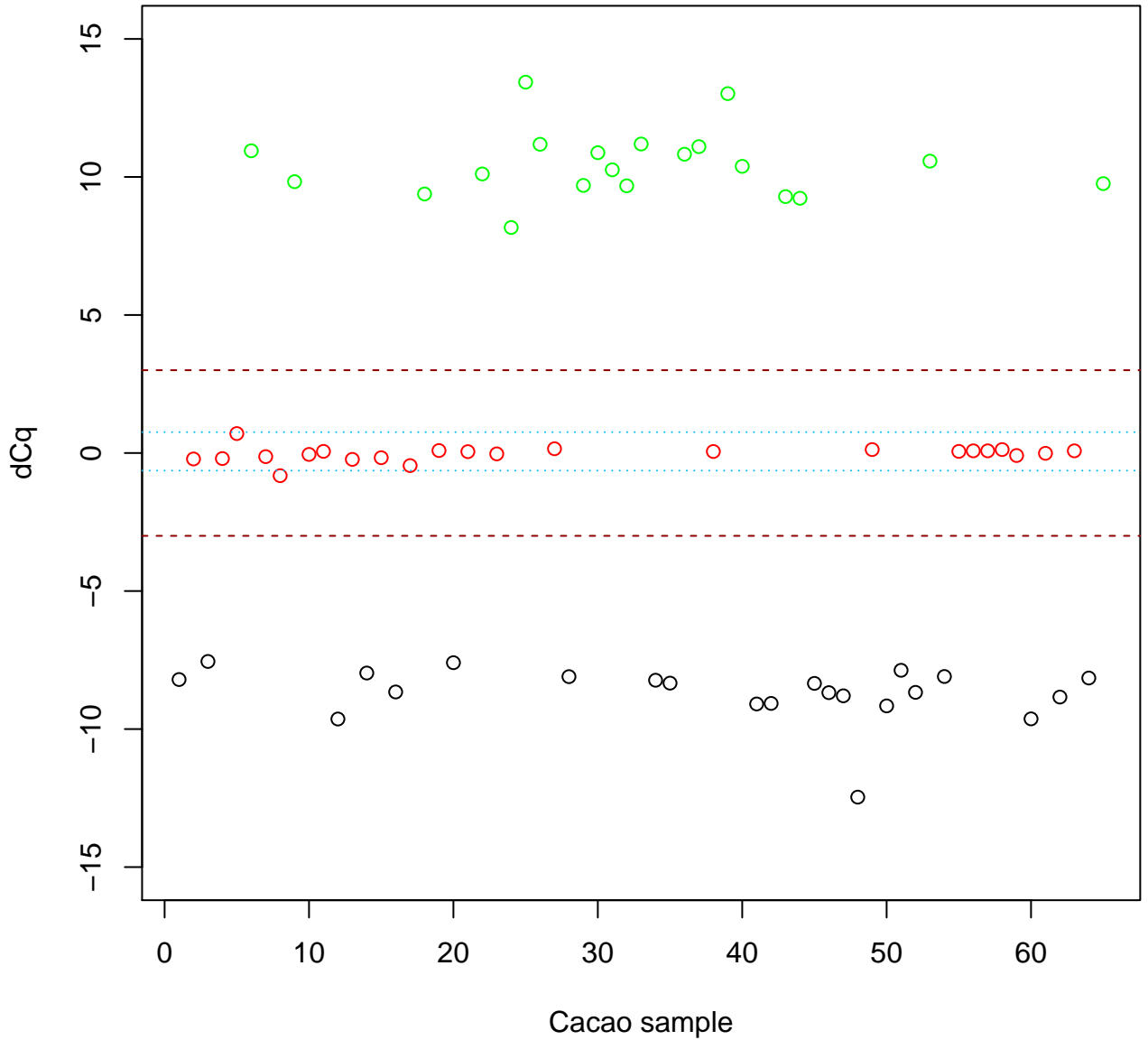
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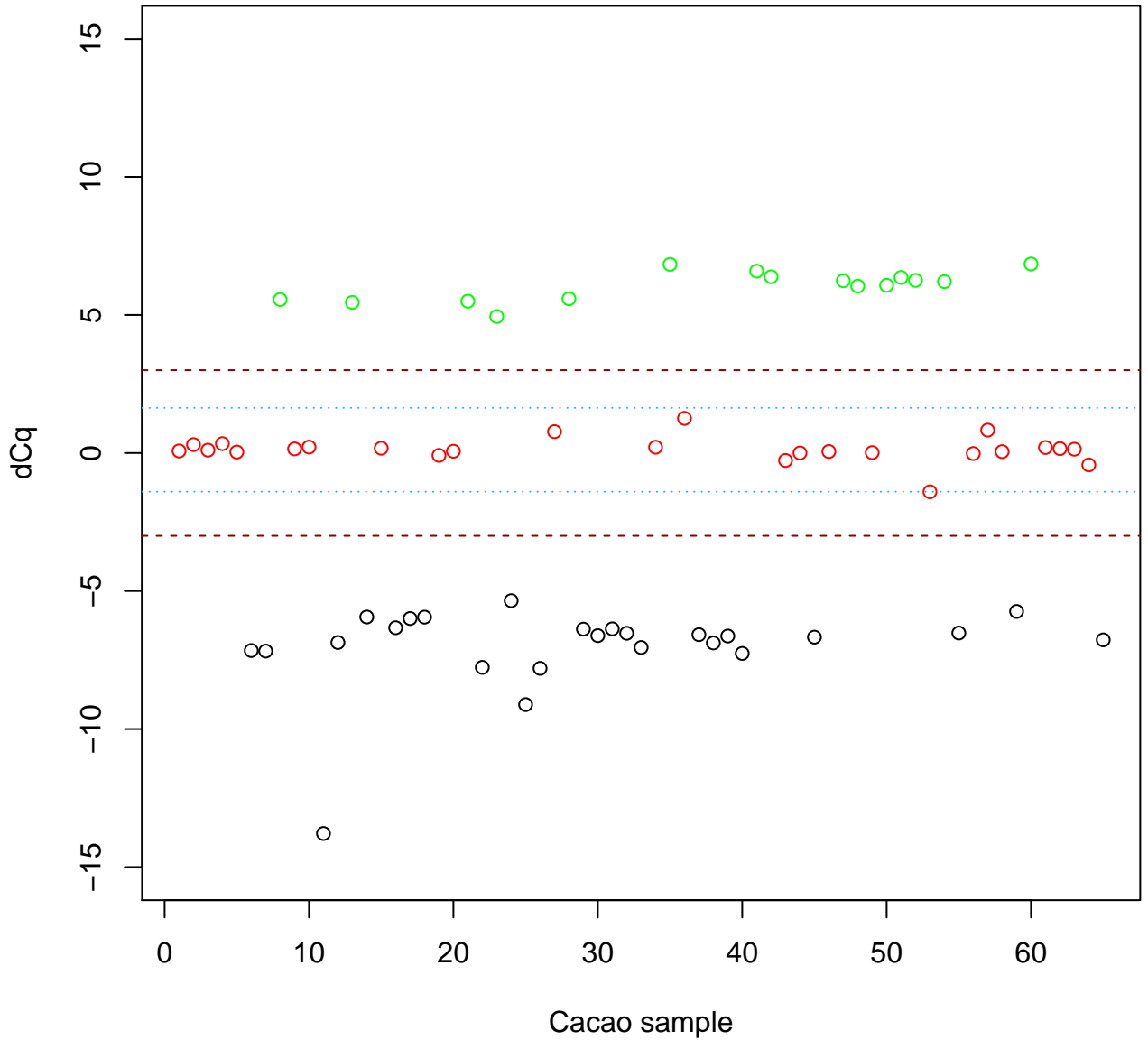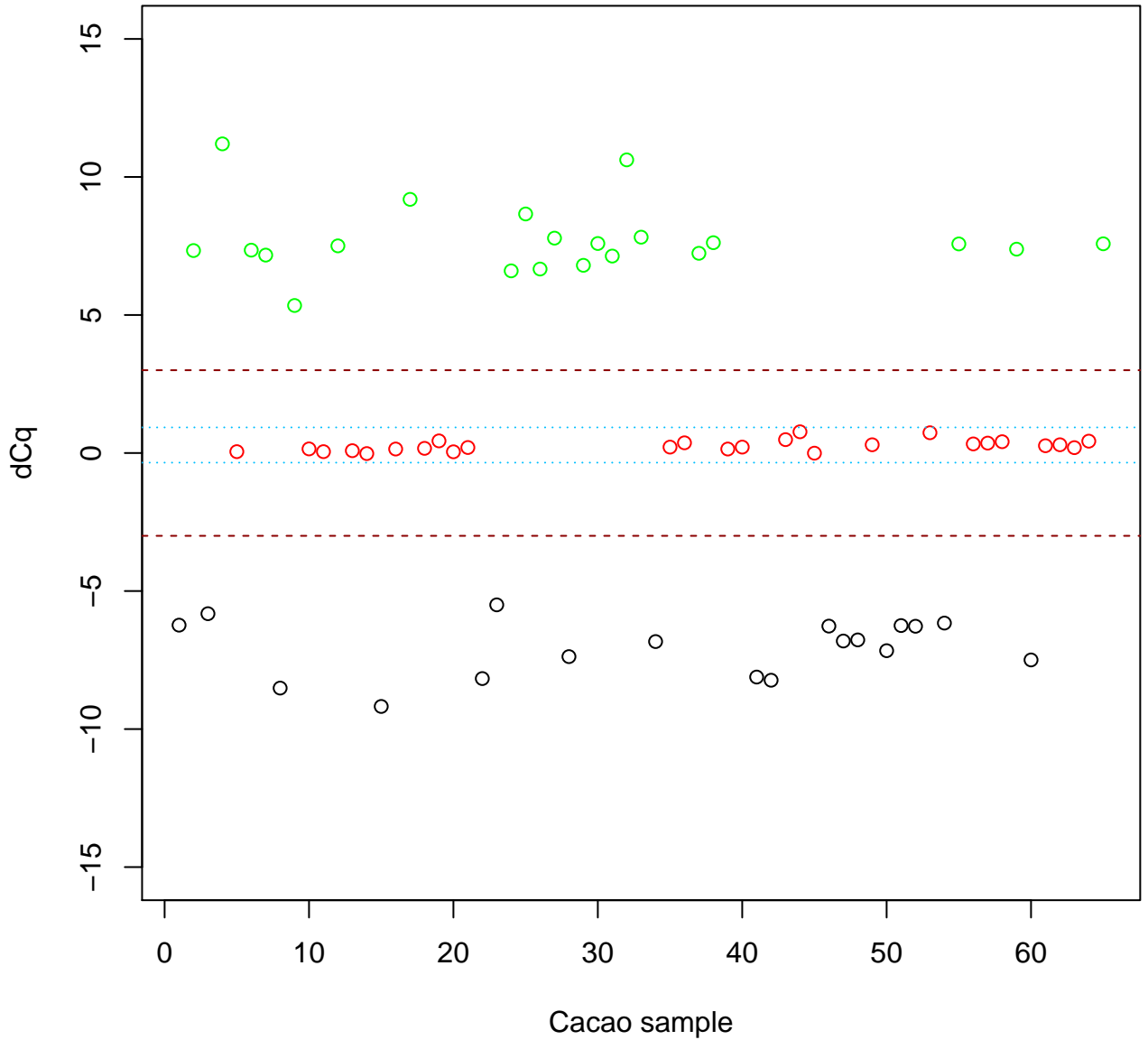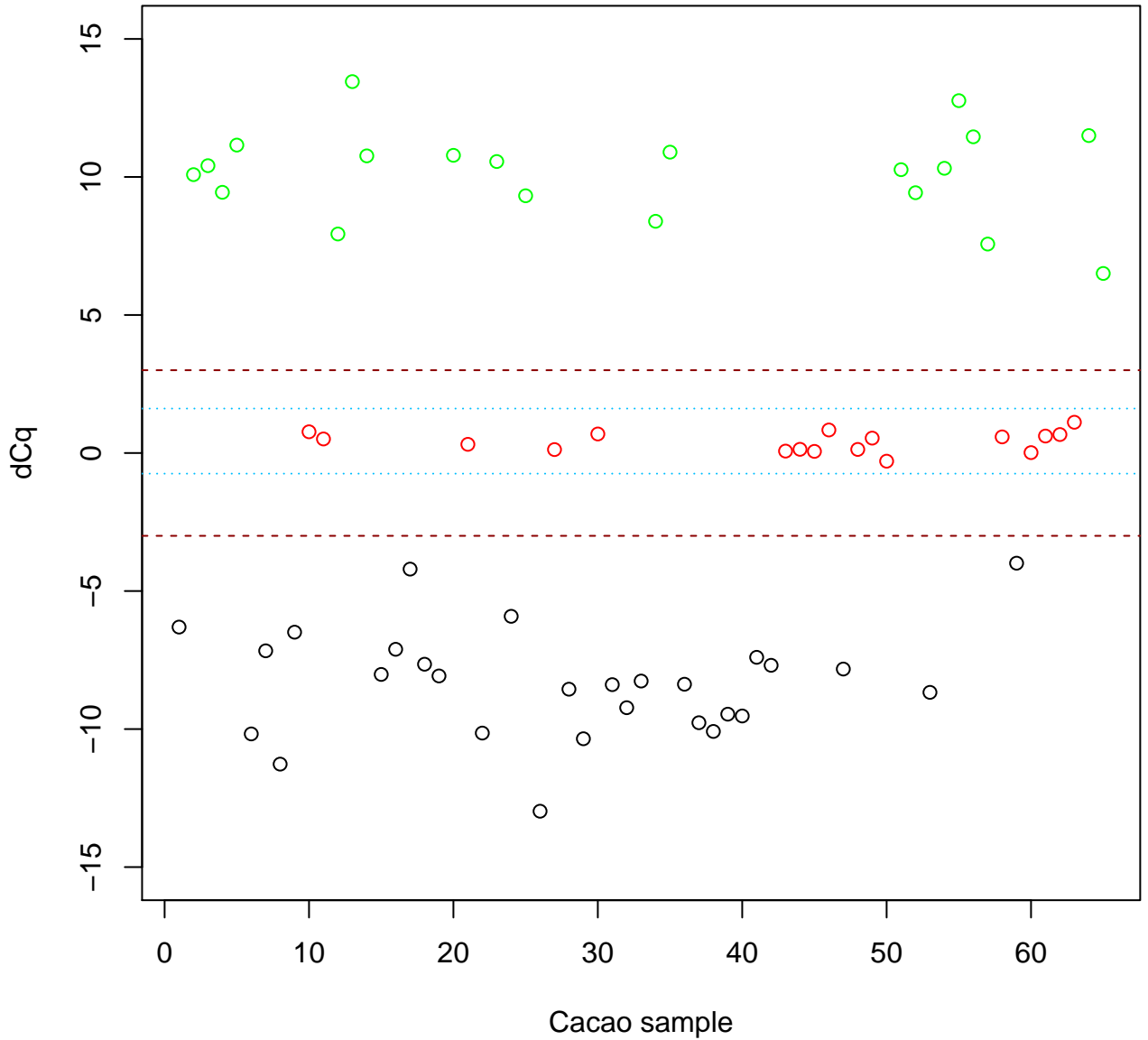# Tcm006s26507164

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