

## Annex Swab Paper

*Table S1: Paired Ct and CN values for samples (S) and controls (C) in the ABI and Alinity platforms*

sample_id	swab_status	Ct_average	result	platform
S10D1	Swab_in	32.2745	positive	ABI
S10D1	Swab_out	32.66615	positive	ABI
S10D2	Swab_in	35.6901	positive	ABI
S10D2	Swab_out	36.36565	positive	ABI
S10D3	Swab_in	38.56985	positive	ABI
S10D3	Swab_out		negative	ABI
S10D4	Swab_in		negative	ABI
S10D4	Swab_out		negative	ABI
S10D5	Swab_in		negative	ABI
S10D5	Swab_out		negative	ABI
S10D6	Swab_in		negative	ABI
S10D6	Swab_out		negative	ABI
S1D1	Swab_in	28.75755	positive	ABI
S1D1	Swab_out	29.81525	positive	ABI
S1D2	Swab_in	32.5157	positive	ABI
S1D2	Swab_out	33.4679	positive	ABI
S1D3	Swab_in	35.4992	positive	ABI
S1D3	Swab_out	36.8991	positive	ABI
S1D4	Swab_in		negative	ABI
S1D4	Swab_out		negative	ABI
S1D5	Swab_in		negative	ABI
S1D5	Swab_out		negative	ABI
S1D6	Swab_in		negative	ABI
S1D6	Swab_out		negative	ABI
S2D1	Swab_in	29.428	positive	ABI
S2D1	Swab_out	30.01295	positive	ABI
S2D2	Swab_in	33.14045	positive	ABI
S2D2	Swab_out	35.45635	positive	ABI
S2D3	Swab_in	36.5602	positive	ABI
S2D3	Swab_out	37.02375	positive	ABI
S2D4	Swab_in	37.5758	positive	ABI
S2D4	Swab_out		negative	ABI

sample_id	swab_status	CN_average	result	platform
S10D1	Swab_in	29.72	positive	Alinity
S10D1	Swab_out	33.06	positive	Alinity
S10D2	Swab_in	33.635	positive	Alinity
S10D2	Swab_out		negative	Alinity
S10D3	Swab_in	36.815	positive	Alinity
S10D3	Swab_out	36.93	positive	Alinity
S10D4	Swab_in		negative	Alinity
S10D4	Swab_out		negative	Alinity
S10D5	Swab_in		negative	Alinity
S10D5	Swab_out		negative	Alinity
S10D6	Swab_in		negative	Alinity
S10D6	Swab_out		negative	Alinity
S1D1	Swab_in	26.45	positive	Alinity
S1D1	Swab_out	27.205	positive	Alinity
S1D2	Swab_in	29.45	positive	Alinity
S1D2	Swab_out	30.715	positive	Alinity
S1D3	Swab_in	33.4	positive	Alinity
S1D3	Swab_out	33.75	positive	Alinity
S1D4	Swab_in	36.78	positive	Alinity
S1D4	Swab_out	38.38	positive	Alinity
S1D5	Swab_in		negative	Alinity
S1D5	Swab_out		negative	Alinity
S1D6	Swab_in		negative	Alinity
S1D6	Swab_out		negative	Alinity
S2D1	Swab_in	25.99	positive	Alinity
S2D1	Swab_out	26.56	positive	Alinity
S2D2	Swab_in	29.695	positive	Alinity
S2D2	Swab_out	29.985	positive	Alinity
S2D3	Swab_in	32.935	positive	Alinity
S2D3	Swab_out	33.515	positive	Alinity
S2D4	Swab_in	37.565	positive	Alinity
S2D4	Swab_out	37.585	positive	Alinity

S2D5	Swab_in		negative	ABI
S2D5	Swab_out		negative	ABI
S2D6	Swab_in		negative	ABI
S2D6	Swab_out		negative	ABI
S3D1	Swab_in	32.07605	positive	ABI
S3D1	Swab_out	32.1414	positive	ABI
S3D2	Swab_out	35.18175	positive	ABI
S3D2	Swab_in	36.5025	positive	ABI
S3D3	Swab_out	36.4844	positive	ABI
S3D3	Swab_in		negative	ABI
S3D4	Swab_in		negative	ABI
S3D4	Swab_out		negative	ABI
S3D5	Swab_in		negative	ABI
S3D5	Swab_out		negative	ABI
S3D6	Swab_in		negative	ABI
S3D6	Swab_out		negative	ABI
S4D1	Swab_in	28.4386	positive	ABI
S4D1	Swab_out	28.72945	positive	ABI
S4D2	Swab_out	32.2191	positive	ABI
S4D2	Swab_in	32.6	positive	ABI
S4D3	Swab_in	35.4802	positive	ABI
S4D3	Swab_out	36.10315	positive	ABI
S4D4	Swab_in	38.1931	positive	ABI
S4D4	Swab_out		negative	ABI
S4D5	Swab_in		negative	ABI
S4D5	Swab_out		negative	ABI
S4D6	Swab_in		negative	ABI
S4D6	Swab_out		negative	ABI
S5D1	Swab_out	25.27315	positive	ABI
S5D1	Swab_in	25.41595	positive	ABI
S5D2	Swab_out	28.8412	positive	ABI
S5D2	Swab_in	28.91475	positive	ABI
S5D3	Swab_out	31.9235	positive	ABI
S5D3	Swab_in	32.8178	positive	ABI
S5D4	Swab_in	36.23615	positive	ABI
S5D4	Swab_out	36.51545	positive	ABI
S5D5	Swab_in	39.4948	positive	ABI
S5D5	Swab_out		negative	ABI
S5D6	Swab_in		negative	ABI

S2D5	Swab_in	38.72	positive	Alinity
S2D5	Swab_out		negative	Alinity
S2D6	Swab_in		negative	Alinity
S2D6	Swab_out		negative	Alinity
S3D1	Swab_in	27.165	positive	Alinity
S3D1	Swab_out	29.59	positive	Alinity
S3D2	Swab_in	30.57	positive	Alinity
S3D2	Swab_out	32.705	positive	Alinity
S3D3	Swab_in	35.105	positive	Alinity
S3D3	Swab_out	36.575	positive	Alinity
S3D4	Swab_in	38.805	positive	Alinity
S3D4	Swab_out		negative	Alinity
S3D5	Swab_in		negative	Alinity
S3D5	Swab_out		negative	Alinity
S3D6	Swab_in		negative	Alinity
S3D6	Swab_out		negative	Alinity
S4D1	Swab_in	23.925	positive	Alinity
S4D1	Swab_out	25.47	positive	Alinity
S4D2	Swab_in	27.48	positive	Alinity
S4D2	Swab_out	29.355	positive	Alinity
S4D3	Swab_in	30.73	positive	Alinity
S4D3	Swab_out	32.035	positive	Alinity
S4D4	Swab_in	34.06	positive	Alinity
S4D4	Swab_out	36.27	positive	Alinity
S4D5	Swab_in	36.445	positive	Alinity
S4D5	Swab_out	38.765	positive	Alinity
S4D6	Swab_in		negative	Alinity
S4D6	Swab_out		negative	Alinity
S5D1	Swab_in	21.855	positive	Alinity
S5D1	Swab_out	21.935	positive	Alinity
S5D2	Swab_out	25.375	positive	Alinity
S5D2	Swab_in	25.76	positive	Alinity
S5D3	Swab_out	28.95	positive	Alinity
S5D3	Swab_in	29.47	positive	Alinity
S5D4	Swab_in	32.395	positive	Alinity
S5D4	Swab_out	32.71	positive	Alinity
S5D5	Swab_in	35.585	positive	Alinity
S5D5	Swab_out	35.915	positive	Alinity
S5D6	Swab_out	39.42	positive	Alinity

S5D6	Swab_out		negative	ABI
S6D1	Swab_out	30.45425	positive	ABI
S6D1	Swab_in	31.14705	positive	ABI
S6D2	Swab_out	35.22445	positive	ABI
S6D2	Swab_in	35.50715	positive	ABI
S6D3	Swab_out	37.7775	positive	ABI
S6D3	Swab_in	39.57	positive	ABI
S6D4	Swab_in		negative	ABI
S6D4	Swab_out		negative	ABI
S6D5	Swab_in		negative	ABI
S6D5	Swab_out		negative	ABI
S6D6	Swab_in		negative	ABI
S6D6	Swab_out		negative	ABI
S8D1	Swab_in	35.82885	positive	ABI
S8D1	Swab_out	36.174	positive	ABI
S8D2	Swab_in	35.0119	positive	ABI
S8D2	Swab_out		negative	ABI
S8D3	Swab_in		negative	ABI
S8D3	Swab_out		negative	ABI
S8D4	Swab_in		negative	ABI
S8D4	Swab_out		negative	ABI
S8D5	Swab_in		negative	ABI
S8D5	Swab_out		negative	ABI
S8D6	Swab_in		negative	ABI
S8D6	Swab_out		negative	ABI
S9D1	Swab_in	27.1921	positive	ABI
S9D1	Swab_out	28.04645	positive	ABI
S9D2	Swab_in	30.60165	positive	ABI
S9D2	Swab_out	31.8407	positive	ABI
S9D3	Swab_in	34.3881	positive	ABI
S9D3	Swab_out	35.03785	positive	ABI
S9D4	Swab_in	37.4859	positive	ABI
S9D4	Swab_out	38.25325	positive	ABI
S9D5	Swab_in		negative	ABI
S9D5	Swab_out		negative	ABI
S9D6	Swab_in		negative	ABI
S9D6	Swab_out		negative	ABI
C1D1	Swab_in		negative	ABI
C1D1	Swab_out		negative	ABI

S5D6	Swab_in		negative	Alinity
S6D1	Swab_out	27.295	positive	Alinity
S6D1	Swab_in	27.725	positive	Alinity
S6D2	Swab_out	31.005	positive	Alinity
S6D2	Swab_in	31.345	positive	Alinity
S6D3	Swab_out	33.94	positive	Alinity
S6D3	Swab_in	34.67	positive	Alinity
S6D4	Swab_in	38.285	positive	Alinity
S6D4	Swab_out		negative	Alinity
S6D5	Swab_in		negative	Alinity
S6D5	Swab_out		negative	Alinity
S6D6	Swab_in		negative	Alinity
S6D6	Swab_out		negative	Alinity
S8D1	Swab_in	32.125	positive	Alinity
S8D1	Swab_out	32.58	positive	Alinity
S8D2	Swab_in	35.3	positive	Alinity
S8D2	Swab_out		negative	Alinity
S8D3	Swab_in	39.63	positive	Alinity
S8D3	Swab_out		negative	Alinity
S8D4	Swab_in		negative	Alinity
S8D4	Swab_out		negative	Alinity
S8D5	Swab_in		negative	Alinity
S8D5	Swab_out		negative	Alinity
S8D6	Swab_in		negative	Alinity
S8D6	Swab_out		negative	Alinity
S9D1	Swab_in	24.29	positive	Alinity
S9D1	Swab_out	26.49	positive	Alinity
S9D2	Swab_in	28.755	positive	Alinity
S9D2	Swab_out	29.87	positive	Alinity
S9D3	Swab_in	31.85	positive	Alinity
S9D3	Swab_out	35.045	positive	Alinity
S9D4	Swab_in	35.415	positive	Alinity
S9D4	Swab_out	40.83	positive	Alinity
S9D5	Swab_in	38.075	positive	Alinity
S9D5	Swab_out		negative	Alinity
S9D6	Swab_in		negative	Alinity
S9D6	Swab_out		negative	Alinity
C1D1	Swab_in		negative	Alinity
C1D1	Swab_out		negative	Alinity

C1D2	Swab_in		negative	ABI
C1D2	Swab_out		negative	ABI
C1D3	Swab_in		negative	ABI
C1D3	Swab_out		negative	ABI
C1D4	Swab_in		negative	ABI
C1D4	Swab_out		negative	ABI
C1D5	Swab_in		negative	ABI
C1D5	Swab_out		negative	ABI
C1D6	Swab_in		negative	ABI
C1D6	Swab_out		negative	ABI
C2D1	Swab_in		negative	ABI
C2D1	Swab_out		negative	ABI
C2D2	Swab_in		negative	ABI
C2D2	Swab_out		negative	ABI
C2D3	Swab_in		negative	ABI
C2D3	Swab_out		negative	ABI
C2D4	Swab_in		negative	ABI
C2D4	Swab_out		negative	ABI
C2D5	Swab_in		negative	ABI
C2D5	Swab_out		negative	ABI
C2D6	Swab_in		negative	ABI
C2D6	Swab_out		negative	ABI

C1D2	Swab_in		negative	Alinity
C1D2	Swab_out		negative	Alinity
C1D3	Swab_in		negative	Alinity
C1D3	Swab_out		negative	Alinity
C1D4	Swab_in		negative	Alinity
C1D4	Swab_out		negative	Alinity
C1D5	Swab_in		negative	Alinity
C1D5	Swab_out		negative	Alinity
C1D6	Swab_in		negative	Alinity
C1D6	Swab_out		negative	Alinity
C2D1	Swab_in		negative	Alinity
C2D1	Swab_out		negative	Alinity
C2D2	Swab_in		negative	Alinity
C2D2	Swab_out		negative	Alinity
C2D3	Swab_in		negative	Alinity
C2D3	Swab_out		negative	Alinity
C2D4	Swab_in		negative	Alinity
C2D4	Swab_out		negative	Alinity
C2D5	Swab_in		negative	Alinity
C2D5	Swab_out		negative	Alinity
C2D6	Swab_in		negative	Alinity
C2D6	Swab_out		negative	Alinity

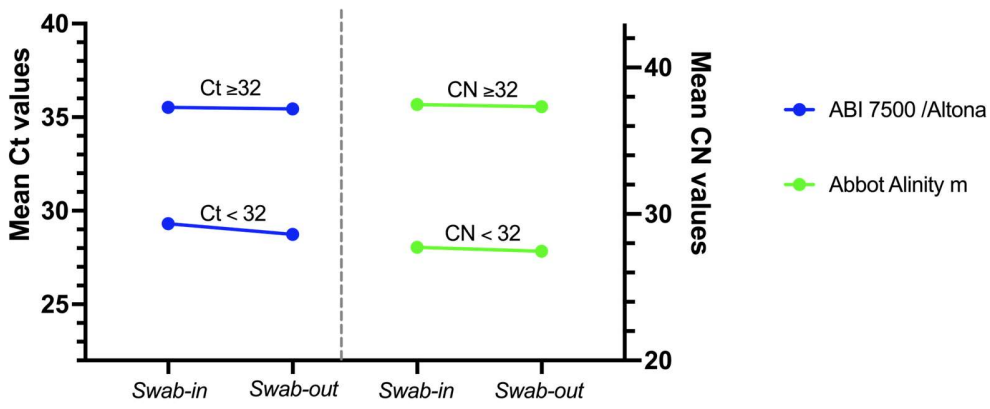


Figure S1: Comparison of Ct mean values before and after swab removal for the moderate-high Ct (<32) and high Ct groups (≥32).

Table S2: Paired t-test results comparing the mean Ct values for each group and platform

Platform	Group	p value	CI 95%	Mean diff
Alinity	All	0.8689	3.2129 - 3.7673	0.2772
Alinity	CN <32	0.5268	2.8932 - 1.5541	-0.6696
Alinity	CN ≥32	0.9631	-1.5493 - 1.6201	0.035277
ABI	All	0.3437	-3.8388 - 1.4576	-0.7782
ABI	Ct <32	0.5441	1.5532 - 2.7003	0.557
ABI	Ct ≥32	0.6893	-1.2016 - 0.8145	-0.01936

Table S3: Contingency tables for each group and platform

<b>Alinity - Overall Results</b>				
		Swab in method		Total
		Positive	Negative	
Swab Out method	Positive	31	1	32
	Negative	7	27	34
	Total	38	28	66

<b>Altona/ABI - Overall Results</b>				
		Swab in method		Total
		Positive	Negative	
Swab Out method	Positive	25	1	26
	Negative	5	35	40
	Total	30	36	66

<b>Alinity - CN &lt;32 group</b>				
		Swab in method		Total
		Positive	Negative	
Swab Out method	Positive	18	0	18
	Negative	0	27	27
	Total	18	27	45

<b>Altona/ABI - Ct &lt;32 group</b>				
		Swab in method		Total
		Positive	Negative	
Swab Out method	Positive	8	0	8
	Negative	0	35	35
	Total	8	35	43

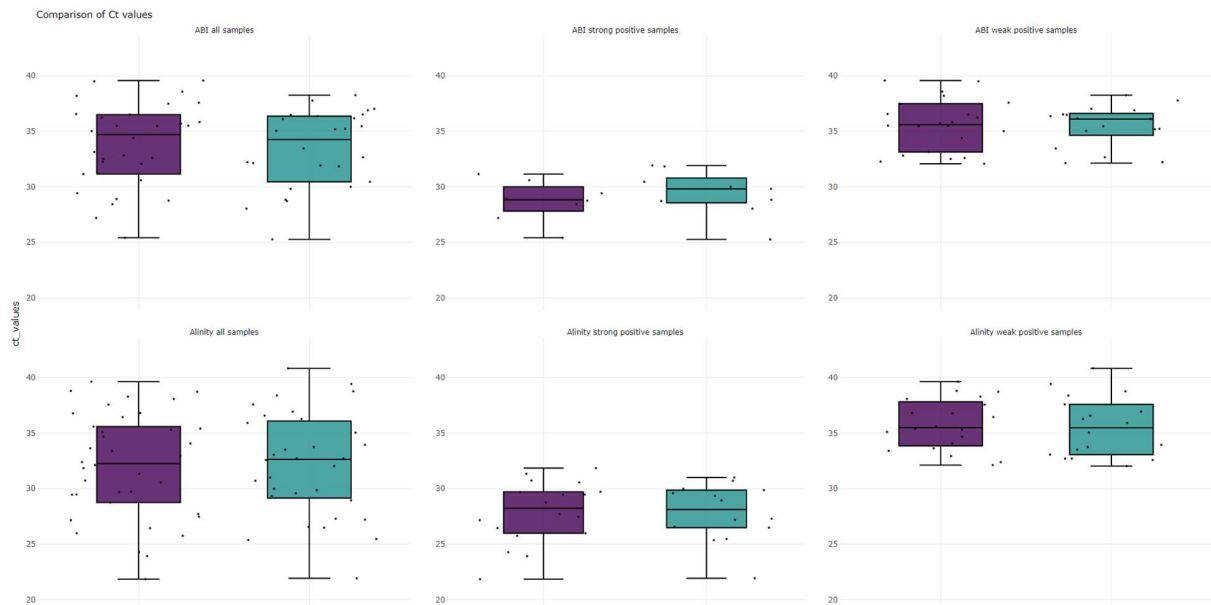
<b>Alinity - CN ≥32 group</b>				
		Swab in method		Total
		Positive	Negative	
Swab Out method	Positive	13	1	14
	Negative	7	27	34
	Total	20	28	48

<b>Altona/ABI - Ct ≥32 group</b>				
		Swab in method		Total
		Positive	Negative	
Swab Out method	Positive	17	1	18
	Negative	5	35	40
	Total	22	36	58

Some samples were not detected in the swab-in method but were captured after removing the swab, but the results should be interpreted cautiously. Our data analysis strategy considered samples positive only when both replicates were detected. For instance, sample S5D6 was considered negative in the Alinity because only one replicate was captured in the swab-in method,

which had a very high CN value of CN 40.78. The corresponding swab-out pair samples were detected, with CNs of 40.69 and 38.15. The set was considered positive since these two samples from the swab-out method were detected.

Similarly, sample S3D3 in the SARS-Cov-2 Altona/ABI assay had a single Ct of 39.05 for the swab-in method but two values of Ct 38.54 and 38.37 after removing the swab. Boxplot figures comparing the distribution of samples and a table detailing the complete statistics can be found in the supplementary materials (**Figure S2, Table S4**).



*Figure S2: Comparison of Ct mean values before and after swab removal for the moderate-high Ct and high Ct groups.*



Table S4: Summary statistics for all groups, conditions and platforms.

Method	Platform	Group	Min	Max	Median	Mean	1st Qu.	3rd Qu.
Swab in	Alinity	All	21.93	40.83	32.64	32.18	28.93	35.54
Swab out	Alinity	All	28.93	39.63	32.26	32.05	29.25	36.00
Swab in	Alinity	CN <32	21.86	31.85	28.24	28.05	26.11	29.71
Swab out	Alinity	CN <32	21.93	31.00	28.12	27.84	26.51	29.80
Swab in	Alinity	CN ≥32	35.05	40.83	37.26	37.57	36.35	40.83
Swab out	Alinity	CN ≥32	35.10	39.63	36.61	36.69	35.46	37.38
Swab in	ABI	All	25.27	38.25	34.25	33.38	31.38	36.44
Swab out	ABI	All	25.42	39.57	34.7	33.46	30.80	36.32
Swab in	ABI	Ct <32	25.27	31.92	29.33	29.31	28.13	29.72
Swab out	ABI	Ct <32	25.42	31.15	28.84	28.74	28.56	30.80
Swab in	ABI	Ct ≥32	32.14	38.25	35.47	36.52	35.04	36.56
Swab out	ABI	Ct ≥32	32.08	39.49	35.69	35.44	35.04	36.52