Table S5. Internal Segment Substitutions (2024–2025 Season).

Missense amino acid substitutions in the internal gene segments (PB2, PB1, PA, NP, M, NS) of influenza A and B samples (2024–2025 season). Only non-synonymous substitutions with allele frequency ≥80% are listed. Substitution notation follows [Reference AA][Position][Variant AA] convention. Dashes (—) indicate no missense substitutions detected in that segment.

Sample	Clade	PB2	PB1	PA	NP	M	NS
Influenza A (H1N1)pdm09							
A/Athens/SENT11007/2025	C.1.9.3	I81M, L475M	K57T	M61I, L63I, R262K, K339N	E14D, T22A, I33V, I136L, V217I, Q453P	—	—
A/Athens/21c/2025	C.1.9.3	D9N, I81M, L475M	K57T, D154N	V14I, M61I, L63I, R262K, K339N	E14D, T22A, I33V, I136L, V217I, Q453P	—	—
A/Athens/21/2025	C.1.9.3	D9N, I81M, L475M	K57T, D154N	V14I, M61I, L63I, R262K, K339N	E14D, T22A, I33V, I136L, V217I, Q453P	—	—
A/Athens/ILI1600/2024	C.1.9.3	I81M, L475M	K57T, T528A	V14I, M61I, L63I, R262K, K339N	E14D, T22A, I33V, I136L, V217I, Q453P	—	—
A/Athens/SENT10789/2025	D.3.1	I81M, L475M	K57T, N328T, M397I	V14I, M61I, L63I, R262K, D272E, K339N	E14D, T22A, I33V, I109V, I136L, V217I, Q453P	S30N	—
A/Athens/63/20251	D.3.1	I81M	—	V14I, M61I, L63I	E14D, T22A, I33V, I136L, V217I, Q453P	—	—
Influenza A (H3N2)							
A/Athens/ILI1563/2024	J.1.1	—	—	G397E	K77R	—	—
A/Athens/SENT11220/2025	J.1.1	—	—	G397E	K77R, S482N	—	—
A/Athens/ILI180/2025	J.1.1	—	—	G397E	K77R	—	—
A/Athens/SARI12258/2025	J.2.2	V67I, V463I	—	G397E, E538V	—	—	D53E, S56P, I137V
Influenza B (Victoria)							
B/Athens/ILI89/20	C.5.1	I396M	D51N, M65I	I356M, S510T	A20T	—	Y104H
B/Athens/ILI186/20251	C.5.1	I396M	D51N, M65I, I462V	I356M, S510T	T17A, A20T, L468I	—	Y104H, V183I, A212V, V263M
B/Athens/SENT11109/2025	C.5.1	I396M	D51N, M65I	I356M, S510T	A20T, S34N, L468I	—	Y104H, V183I, A212V, V263M

B/Athens/SENT11017/2025	C.5.6	I396M	D51N, M65I	K278R, I356M, S510T	A20T	—	Y104H
B/Athens/SENT11012_MDCK/2025	C.5.6.1	I396M	D51N, M65I	I356M, S510T	A20T	—	Y104H
B/Phthiotis.GR/SENT11772/2025	C.5.7	T110N, A301T, I396M	D51N, M65I, I462V	K178R, S208N, I356M, S510T	A20T	—	Y104H, Y122H
B/Athens/SENT10797/2025	C.5.7	T110N, A301T, I396M	D51N, M65I, I462V	S208N, F315S, I356M, I361V, S510T	A20T, N35S	—	Y104H, S109P
B/Athens/ILI204/2025	C.5.7	T110N, A301T, R368K, I396M	Y38H, D51N, M65I, I462V	S208N, I356M, I361V, S510T	A20T, N35S	—	Y104H
B/Athens/SENT10773/2025	C.5.7	T110N, A301T, I396M	D51N, M65I, I462V	S208N, I356M, I361V, S510T	A20T, N35S	—	Y104H
B/Athens/ILI81/2025	C.5.7	T110N, A301T, I396M	D51N, M65I, I462V	S208N, I356M, I361V, S510T	A20T, N35S, I161V	—	Y104H
B/Athens/SENT10804/2025	C.5.7	R69K, T110N, A301T, I396M	D51N, M65I, I462V, K566R	S208N, I356M, I361V, S510T	A20T, N35S	—	Y104H