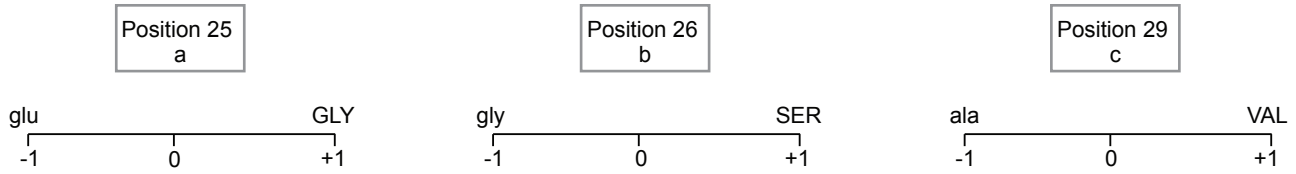
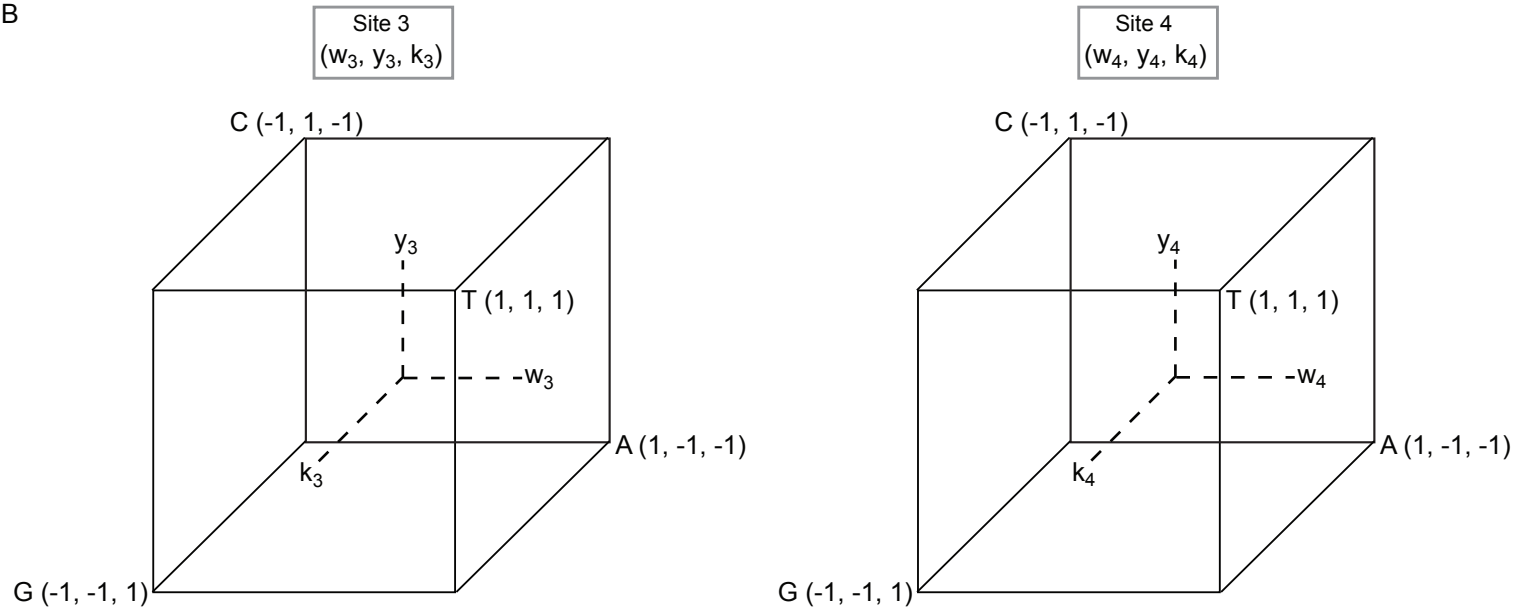
Supplemental Data File 2.

A



B



C.

Genetic Term	abc-/WYK-encoded equation
glu25GLY	2a
gly26SER	2b
ala29VAL	2c
A3	$w_3-y_3-k_3$
C3	$-w_3+y_3-k_3$
G3	$-w_3-y_3+k_3$
T3	$w_3+y_3+k_3$
A4	$w_4-y_4-k_4$
C4	$-w_4+y_4-k_4$
G4	$-w_4-y_4+k_4$
T4	$w_4+y_4+k_4$
glu25GLY x gly26SER	2(ab)
glu25GLY x ala29VAL	2(ac)
gly26SER x ala29VAL	2(bc)
A3 x A4	$w_3w_4-w_3y_4-w_3k_4-y_3w_4+y_3y_4+y_3k_4-k_3w_4+k_3y_4+k_3k_4$
A3 x C4	$-w_3w_4+w_3y_4-w_3k_4+y_3w_4-y_3y_4+y_3k_4+k_3w_4-k_3y_4+k_3k_4$
A3 x G4	$-w_3w_4-w_3y_4+w_3k_4+y_3w_4+y_3y_4-y_3k_4+k_3w_4+k_3y_4-k_3k_4$
A3 x T4	$w_3w_4+w_3y_4+w_3k_4-y_3w_4-y_3y_4-y_3k_4-k_3w_4-k_3y_4-k_3k_4$
C3 x A4	$-w_3w_4+w_3y_4+w_3k_4+y_3w_4-y_3y_4-y_3k_4-k_3w_4+k_3y_4+k_3k_4$
C3 x C4	$w_3w_4-w_3y_4+w_3k_4-y_3w_4+y_3y_4-y_3k_4+k_3w_4-k_3y_4+k_3k_4$
C3 x G4	$w_3w_4+w_3y_4-w_3k_4-y_3w_4-y_3y_4+y_3k_4+k_3w_4+k_3y_4-k_3k_4$
C3 x T4	$-w_3w_4-w_3y_4-w_3k_4+y_3w_4+y_3y_4+y_3k_4-k_3w_4-k_3y_4-k_3k_4$
G3 x A4	$-w_3w_4+w_3y_4+w_3k_4-y_3w_4+y_3y_4+y_3k_4+k_3w_4-k_3y_4-k_3k_4$
G3 x C4	$w_3w_4-w_3y_4+w_3k_4+y_3w_4-y_3y_4+y_3k_4-k_3w_4+k_3y_4-k_3k_4$
G3 x T4	$-w_3w_4-w_3y_4-w_3k_4-y_3w_4-y_3y_4-y_3k_4+k_3w_4+k_3y_4+k_3k_4$
T3 x A4	$w_3w_4-w_3y_4-w_3k_4+y_3w_4-y_3y_4-y_3k_4+k_3w_4-k_3y_4-k_3k_4$
T3 x C4	$-w_3w_4+w_3y_4-w_3k_4-y_3w_4+y_3y_4-y_3k_4-k_3w_4+k_3y_4-k_3k_4$
T3 x G4	$-w_3w_4-w_3y_4+w_3k_4-y_3w_4-y_3y_4+y_3k_4-k_3w_4-k_3y_4+k_3k_4$
T3 x T4	$w_3w_4+w_3y_4+w_3k_4+y_3w_4+y_3y_4+y_3k_4+k_3w_4+k_3y_4+k_3k_4$
glu25GLY x A3	$2(aw_3-ay_3-ak_3)$
glu25GLY x C3	$2(-aw_3+ay_3-ak_3)$
glu25GLY x G3	$2(-aw_3-ay_3+ak_3)$
glu25GLY x T3	$2(aw_3+ay_3+ak_3)$
glu25GLY x A4	$2(aw_4-ay_4-ak_4)$
glu25GLY x C4	$2(-aw_4+ay_4-ak_4)$
glu25GLY x G4	$2(-aw_4-ay_4+ak_4)$
glu25GLY x T4	$2(aw_4+ay_4+ak_4)$
gly26SER x A3	$2(bw_3-by_3-bk_3)$
gly26SER x C3	$2(-bw_3+by_3-bk_3)$
gly26SER x G3	$2(-bw_3-by_3+bk_3)$
gly26SER x T3	$2(bw_3+by_3+bk_3)$
gly26SER x A4	$2(bw_4-by_4-bk_4)$
gly26SER x C4	$2(-bw_4+by_4-bk_4)$
gly26SER x G4	$2(-bw_4-by_4+bk_4)$
gly26SER x T4	$2(bw_4+by_4+bk_4)$
ala29VAL x A3	$2(cw_3-cy_3-ck_3)$
ala29VAL x C3	$2(-cw_3+cy_3-ck_3)$
ala29VAL x G3	$2(-cw_3-cy_3+ck_3)$
ala29VAL x T3	$2(cw_3+cy_3+ck_3)$
ala29VAL x A4	$2(cw_4-cy_4-ck_4)$
ala29VAL x C4	$2(-cw_4+cy_4-ck_4)$
ala29VAL x G4	$2(-cw_4-cy_4+ck_4)$
ala29VAL x T4	$2(cw_4+cy_4+ck_4)$
glu25GLY x gly26SER x A3	$2(abw_3-aby_3-abk_3)$
glu25GLY x gly26SER x C3	$2(-abw_3+aby_3-abk_3)$
glu25GLY x gly26SER x G3	$2(-abw_3-aby_3+abk_3)$
glu25GLY x gly26SER x T3	$2(bk_3+abw_3+aby_3+abk_3)$

glu25GLY x gly26SER x A4	$2(abw_4-aby_4-abk_4)$
glu25GLY x gly26SER x C4	$2(-abw_4+aby_4-abk_4)$
glu25GLY x gly26SER x G4	$2(-abw_4-aby_4+abk_4)$
glu25GLY x gly26SER x T4	$2(abw_4+aby_4+abk_4)$
glu25GLY x ala29VAL x A3	$2(acw_3-acy_3-ack_3)$
glu25GLY x ala29VAL x C3	$2(-acw_3+acy_3-ack_3)$
glu25GLY x ala29VAL x G3	$2(-acw_3-acy_3+ack_3)$
glu25GLY x ala29VAL x T3	$2(acw_3+acy_3+ack_3)$
glu25GLY x ala29VAL x A4	$2(acw_4-acy_4-ack_4)$
glu25GLY x ala29VAL x C4	$2(-acw_4+acy_4-ack_4)$
glu25GLY x ala29VAL x G4	$2(-acw_4-acy_4+ack_4)$
glu25GLY x ala29VAL x T4	$2(acw_4+acy_4+ack_4)$
gly26SER x ala29VAL x A3	$2(bcw_3-bcy_3-bck_3)$
gly26SER x ala29VAL x C3	$2(-bcw_3+bcy_3-bck_3)$
gly26SER x ala29VAL x G3	$2(-bcw_3-bcy_3+bck_3)$
gly26SER x ala29VAL x T3	$2(bcw_3+bcy_3+bck_3)$
gly26SER x ala29VAL x A4	$2(bcw_4-bcy_4-bck_4)$
gly26SER x ala29VAL x C4	$2(-bcw_4+bcy_4-bck_4)$
gly26SER x ala29VAL x G4	$2(-bcw_4-bcy_4+bck_4)$
gly26SER x ala29VAL x T4	$2(bcw_4+bcy_4+bck_4)$
glu25GLY x A3 x A4	$2(aw_3w_4-aw_3y_4-aw_3k_4-ay_3w_4+ay_3y_4+ay_3k_4-ak_3w_4+ak_3y_4+ak_3k_4)$
glu25GLY x A3 x C4	$2(-aw_3w_4+aw_3y_4-aw_3k_4+ay_3w_4-ay_3y_4+ay_3k_4+ak_3w_4-ak_3y_4+ak_3k_4)$
glu25GLY x A3 x G4	$2(-aw_3w_4-aw_3y_4+aw_3k_4+ay_3w_4+ay_3y_4-ay_3k_4+ak_3w_4+ak_3y_4-ak_3k_4)$
glu25GLY x A3 x T4	$2(aw_3w_4+aw_3y_4+aw_3k_4-ay_3w_4-ay_3y_4-ay_3k_4-ak_3w_4-ak3y_4-ak_3k_4)$
glu25GLY x C3 x A4	$2(-aw_3w_4+aw_3y_4+aw_3k_4+ay_3w_4-ay_3y_4-ay_3k_4-ak_3w_4+ak_3y_4+ak_3k_4)$
glu25GLY x C3 x C4	$2(aw_3w_4-aw_3y_4+aw_3k_4-ay_3w_4+ay_3y_4-ay_3k_4+ak_3w_4-ak_3y_4+ak_3k_4)$
glu25GLY x C3 x G4	$2(aw_3w_4+aw_3y_4-aw_3k_4-ay_3w_4-ay_3y_4+ay_3k_4+ak_3w_4+ak_3y_4-ak_3k_4)$
glu25GLY x C3 x T4	$2(-aw_3w_4-aw_3y_4-aw_3k_4+ay_3w_4+ay_3y_4+ay_3k_4-ak_3w_4-ak_3y_4-ak_3k_4)$
glu25GLY x G3 x A4	$2(-aw_3w_4+aw_3y_4+aw_3k_4-ay_3w_4+ay_3y_4+ay_3k_4+ak_3w_4-ak_3y_4-ak_3k_4)$
glu25GLY x G3 x C4	$2(aw_3w_4-aw_3y_4+aw_3k_4+ay_3w_4-ay_3y_4+ay_3k_4-ak_3w_4+ak_3y_4-ak_3k_4)$
glu25GLY x G3 x G4	$2(aw_3w_4+aw_3y_4-aw_3k_4+ay_3w_4+ay_3y_4-ay_3k_4-ak_3w_4-ak_3y_4+ak_3k_4)$
glu25GLY x G3 x T4	$2(-aw_3w_4-aw_3y_4-aw_3k_4-ay_3w_4-ay_3y_4-ay_3k_4+ak_3w_4+ak_3y_4+ak_3k_4)$
glu25GLY x T3 x A4	$2(aw_3w_4-aw_3y_4-aw_3k_4+ay_3w_4-ay_3y_4-ay_3k_4+ak_3w_4-ak_3y_4-ak_3k_4)$
glu25GLY x T3 x C4	$2(-aw_3w_4+aw_3y_4-aw_3k_4-ay_3w_4+ay_3y_4-ay_3k_4-ak_3w_4+ak_3y_4-ak_3k_4)$
glu25GLY x T3 x G4	$2(-aw_3w_4-aw_3y_4+aw_3k_4-ay_3w_4-ay_3y_4+ay_3k_4-ak_3w_4-ak_3y_4+ak_3k_4)$
glu25GLY x T3 x T4	$2(aw_3w_4+aw_3y_4+aw_3k_4+ay_3w_4+ay_3y_4+ay_3k_4+ak_3w_4+ak_3y_4+ak_3k_4)$
gly26SER x A3 x A4	$2(bw_3w_4-bw_3y_4-bw_3k_4-by_3w_4+by_3y_4+by_3k_4-bk_3w_4+bk_3y_4+bk_3k_4)$
gly26SER x A3 x C4	$2(-bw_3w_4+bw_3y_4-bw_3k_4+by_3w_4-by_3y_4+by_3k_4+bk_3w_4-bk_3y_4+bk_3k_4)$
gly26SER x A3 x G4	$2(-bw_3w_4-bw_3y_4+bw_3k_4+by_3w_4+by_3y_4-by_3k_4+bk_3w_4+bk_3y_4-bk_3k_4)$
gly26SER x A3 x T4	$2(bw_3w_4+bw_3y_4+bw_3k_4-by_3w_4-by_3y_4-by_3k_4-bk_3w_4-bk_3y_4-bk_3k_4)$
gly26SER x C3 x A4	$2(-bw_3w_4+bw_3y_4+bw_3k_4+by_3w_4-by_3y_4-by_3k_4-bk_3w_4+bk_3y_4+bk_3k_4)$
gly26SER x C3 x C4	$2(bw_3w_4-bw_3y_4+bw_3k_4-by_3w_4+by_3y_4-by_3k_4+bk_3w_4-bk_3y_4+bk_3k_4)$
gly26SER x C3 x G4	$2(bw_3w_4+bw_3y_4-bw_3k_4-by_3w_4-by_3y_4+by_3k_4+bk_3w_4+bk_3y_4-bk_3k_4)$
gly26SER x C3 x T4	$2(-bw_3w_4-bw_3y_4-bw_3k_4+by_3w_4+by_3y_4+by_3k_4-bk_3w_4-bk_3y_4-bk_3k_4)$
gly26SER x G3 x A4	$2(-bw_3w_4+bw_3y_4+bw_3k_4-by_3w_4+by_3y_4+by_3k_4+bk_3w_4-bk_3y_4-bk_3k_4)$
gly26SER x G3 x C4	$2(bw_3w_4-bw_3y_4+bw_3k_4+by_3w_4-by_3y_4+by_3k_4-bk_3w_4+bk_3y_4-bk_3k_4)$
gly26SER x G3 x G4	$2(bw_3w_4+bw_3y_4-bw_3k_4+by_3w_4+by_3y_4-by_3k_4-bk_3w_4-bk_3y_4+bk_3k_4)$
gly26SER x G3 x T4	$2(-bw_3w_4-bw_3y_4-bw_3k_4-by_3w_4-by_3y_4-by_3k_4+bk_3w_4+bk_3y_4+bk_3k_4)$
gly26SER x T3 x A4	$2(bw_3w_4-bw_3y_4-bw_3k_4+by_3w_4-by_3y_4-by_3k_4+bk_3w_4-bk_3y_4-bk_3k_4)$
gly26SER x T3 x C4	$2(-bw_3w_4+bw_3y_4-bw_3k_4-by_3w_4+by_3y_4-by_3k_4-bk_3w_4+bk_3y_4-bk_3k_4)$
gly26SER x T3 x G4	$2(-bw_3w_4-bw_3y_4+bw_3k_4-by_3w_4-by_3y_4+by_3k_4-bk_3w_4-bk_3y_4+bk_3k_4)$
gly26SER x T3 x T4	$2(bw_3w_4+bw_3y_4+bw_3k_4+by_3w_4+by_3y_4+by_3k_4+bk_3w_4+bk_3y_4+bk_3k_4)$
ala29VAL x A3 x A4	$2(cw_3w_4-cw_3y_4-cw_3k_4-cy_3w_4+cy_3y_4+cy_3k_4-ck_3w_4+ck_3y_4+ck_3k_4)$
ala29VAL x A3 x C4	$2(-cw_3w_4+cw_3y_4-cw_3k_4+cy_3w_4-cy_3y_4+cy_3k_4+ck_3w_4-ck_3y_4+ck_3k_4)$
ala29VAL x A3 x G4	$2(-cw_3w_4-cw_3y_4+cw_3k_4+cy_3w_4+cy_3y_4-cy_3k_4+ck_3w_4+ck_3y_4-ck_3k_4)$
ala29VAL x A3 x T4	$2(cw_3w_4+cw_3y_4+cw_3k_4-cy_3w_4-cy_3y_4-cy_3k_4-ck_3w_4-ck_3y_4-ck_3k_4)$
ala29VAL x C3 x A4	$2(-cw_3w_4+cw_3y_4+cw_3k_4+cy_3w_4-cy_3y_4-cy_3k_4-ck_3w_4+ck_3y_4+ck_3k_4)$
ala29VAL x C3 x C4	$2(cw_3w_4-cw_3y_4+cw_3k_4-cy_3w_4+cy_3y_4-cy_3k_4+ck_3w_4-ck_3y_4+ck_3k_4)$
ala29VAL x C3 x G4	$2(cw_3w_4+cw_3y_4-cw_3k_4-cy_3w_4-cy_3y_4+cy_3k_4+ck_3w_4+ck_3y_4-ck_3k_4)$
ala29VAL x C3 x T4	$2(-cw_3w_4-cw_3y_4-cw_3k_4+cy_3w_4+cy_3y_4+cy_3k_4-ck_3w_4-ck_3y_4-ck_3k_4)$

ala29VAL x G3 x A4	$2(-cw_3w_4+cw_3y_4+cw_3k_4-cy_3w_4+cy_3y_4+cy_3k_4+ck_3w_4-ck_3y_4-ck_3k_4)$
ala29VAL x G3 x C4	$2(cw_3w_4-cw_3y_4+cw_3k_4+cy_3w_4-cy_3y_4+cy_3k_4-ck_3w_4+ck_3y_4-ck_3k_4)$
ala29VAL x G3 x G4	$2(cw_3w_4+cw_3y_4-cw_3k_4+cy_3w_4+cy_3y_4-cy_3k_4-ck_3w_4-ck_3y_4+ck_3k_4)$
ala29VAL x G3 x T4	$2(-cw_3w_4-cw_3y_4-cw_3k_4-cy_3w_4-cy_3y_4-cy_3k_4+ck_3w_4+ck_3y_4+ck_3k_4)$
ala29VAL x T3 x A4	$2(cw_3w_4-cw_3y_4-cw_3k_4+cy_3w_4-cy_3y_4-cy_3k_4+ck_3w_4-ck_3y_4-ck_3k_4)$
ala29VAL x T3 x C4	$2(-cw_3w_4+cw_3y_4-cw_3k_4-cy_3w_4+cy_3y_4-cy_3k_4-ck_3w_4+ck_3y_4-ck_3k_4)$
ala29VAL x T3 x G4	$2(-cw_3w_4-cw_3y_4+cw_3k_4-cy_3w_4-cy_3y_4+cy_3k_4-ck_3w_4-ck_3y_4+ck_3k_4)$
ala29VAL x T3 x T4	$2(cw_3w_4+cw_3y_4+cw_3k_4+cy_3w_4+cy_3y_4+cy_3k_4+ck_3w_4+ck_3y_4+ck_3k_4)$