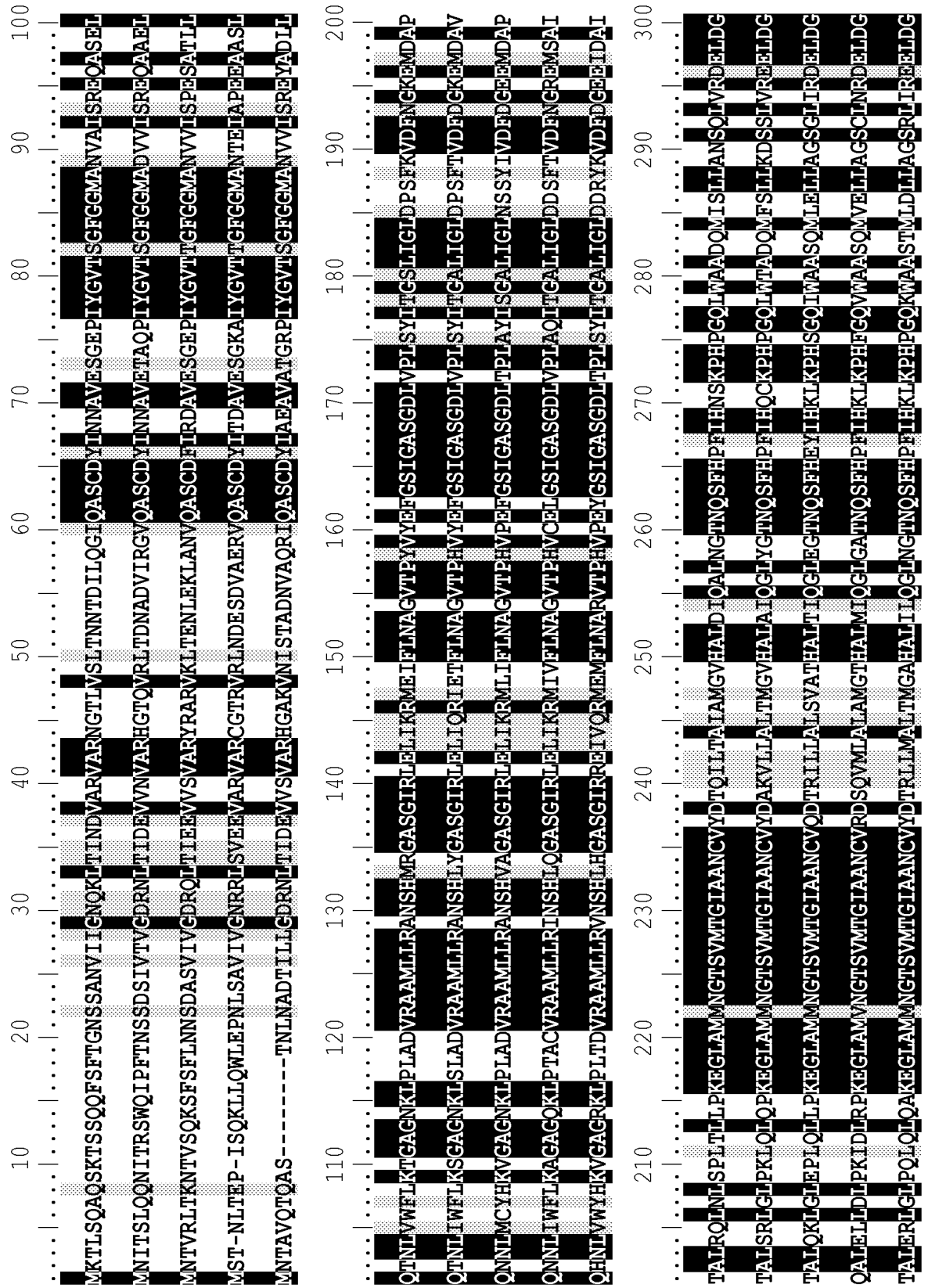

YP_324488.1
YP_001865631.1
YP_007056096.1
ZP_07108482.1
YP_007127054.1

FIG. 1

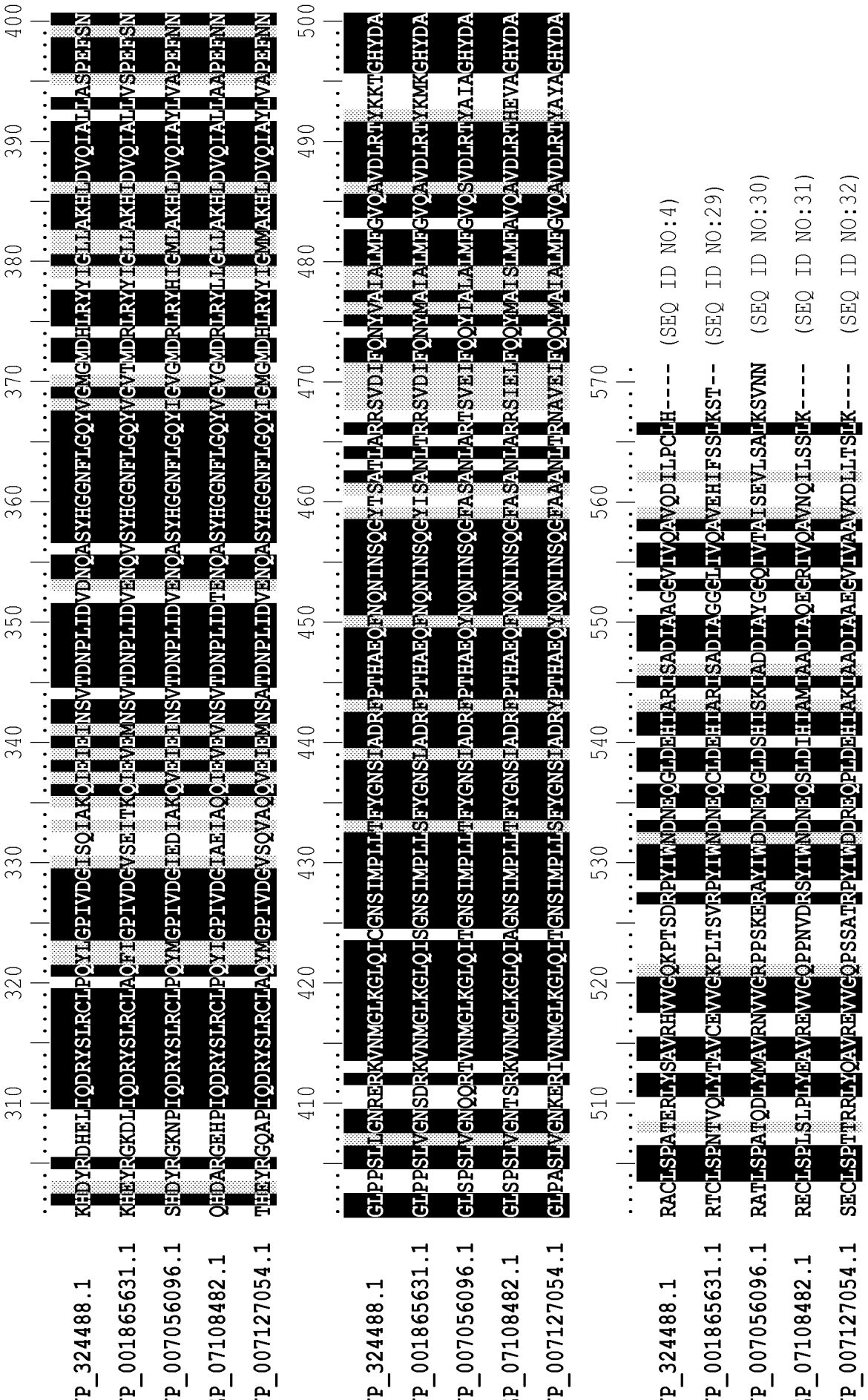

YP_324488.1
YP_001865631.1
YP_007056096.1
ZP_07108482.1
YP_007127054.1
(SEQ ID NO:4)
(SEQ ID NO:29)
(SEQ ID NO:30)
(SEQ ID NO:31)
(SEQ ID NO:32)

FIG. 1 (Cont.)

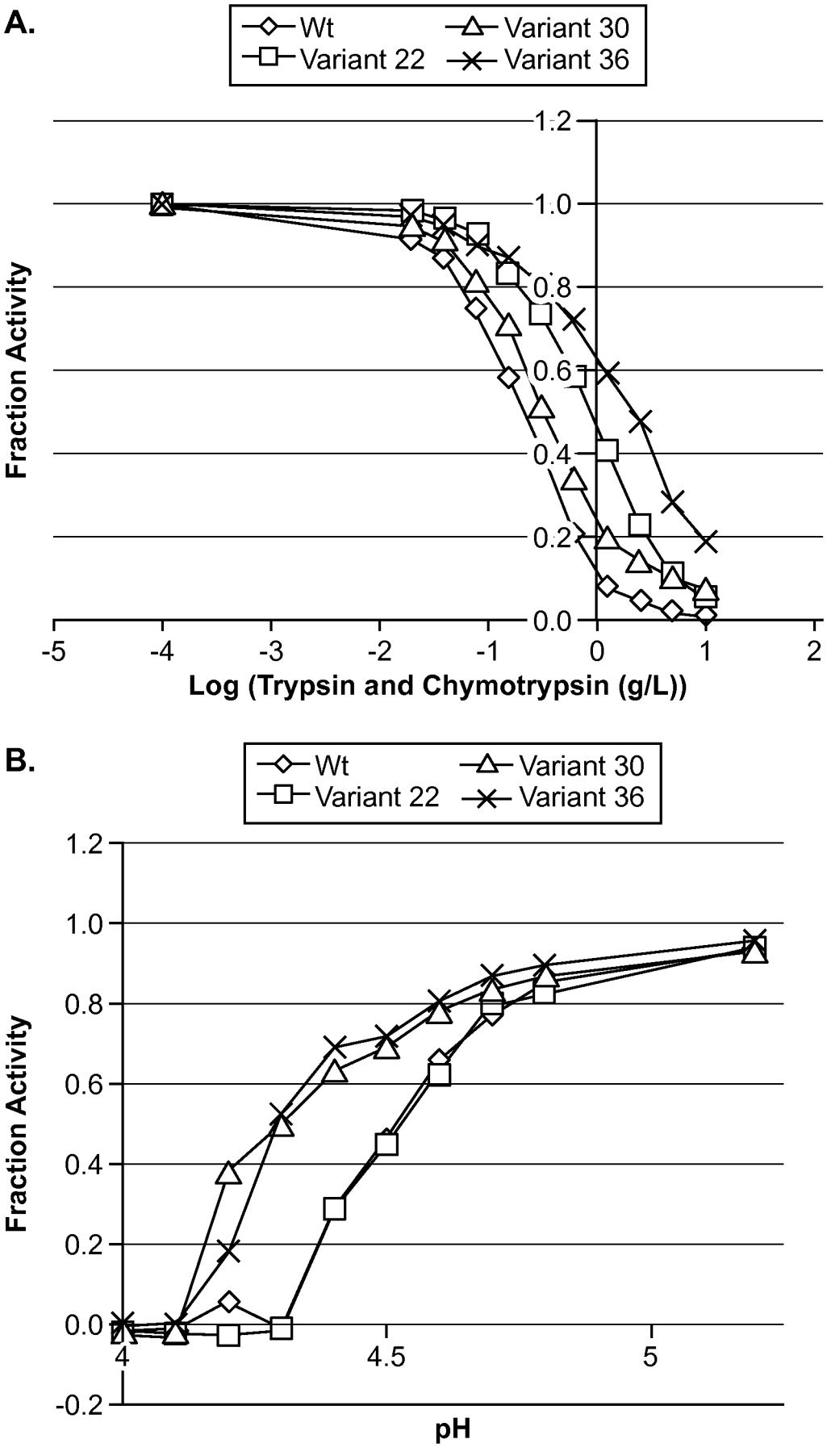

A.
Wt
Variant 30
Variant 22
Variant 36
Fraction Activity
1.2
1.0
0.8
0.6
0.4
0.2
0.0
-5
-4
-3
-2
-1
0
1
2
Log (Trypsin and Chymotrypsin (g/L))
B.
Wt
Variant 30
Variant 22
Variant 36
Fraction Activity
1.2
1.0
0.8
0.6
0.4
0.2
0.0
-0.2
4
4.5
5
pH

FIG. 2

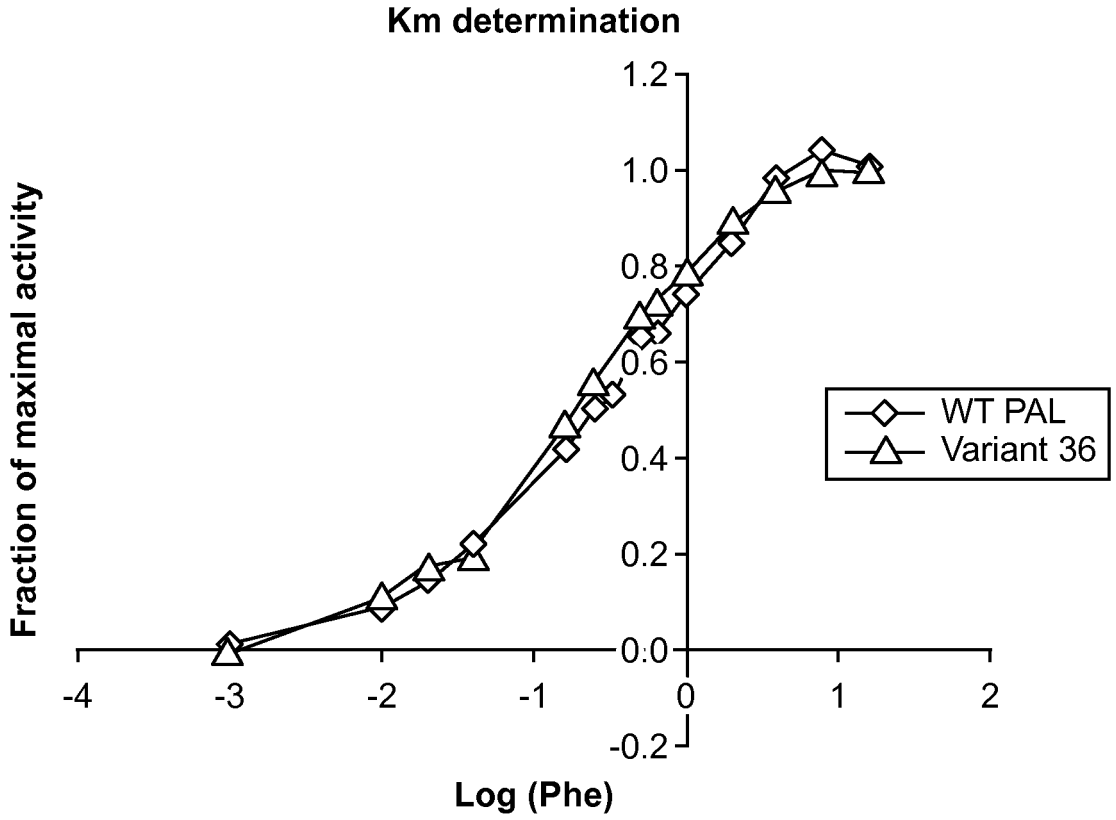

Km determination
Fraction of maximal activity
1.2
1.0
0.8
0.6
0.4
0.2
0.0
-0.2
-4
-3
-2
-1
0
1
2
Log (Phe)
WT PAL
Variant 36

FIG. 3

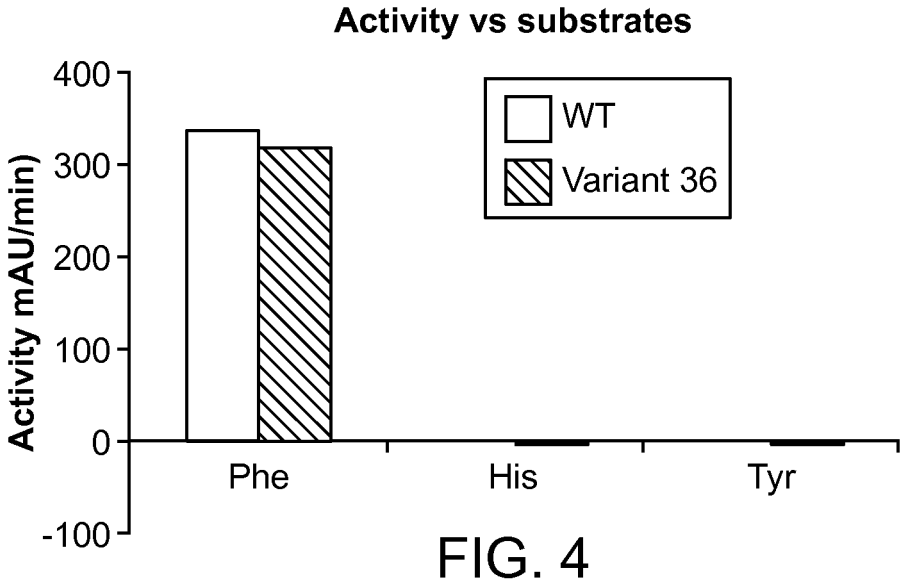

Activity vs substrates
Activity mAU/min)
400
300
200
100
0
-100
Phe
His
Tyr
WT
Variant 36

FIG. 4

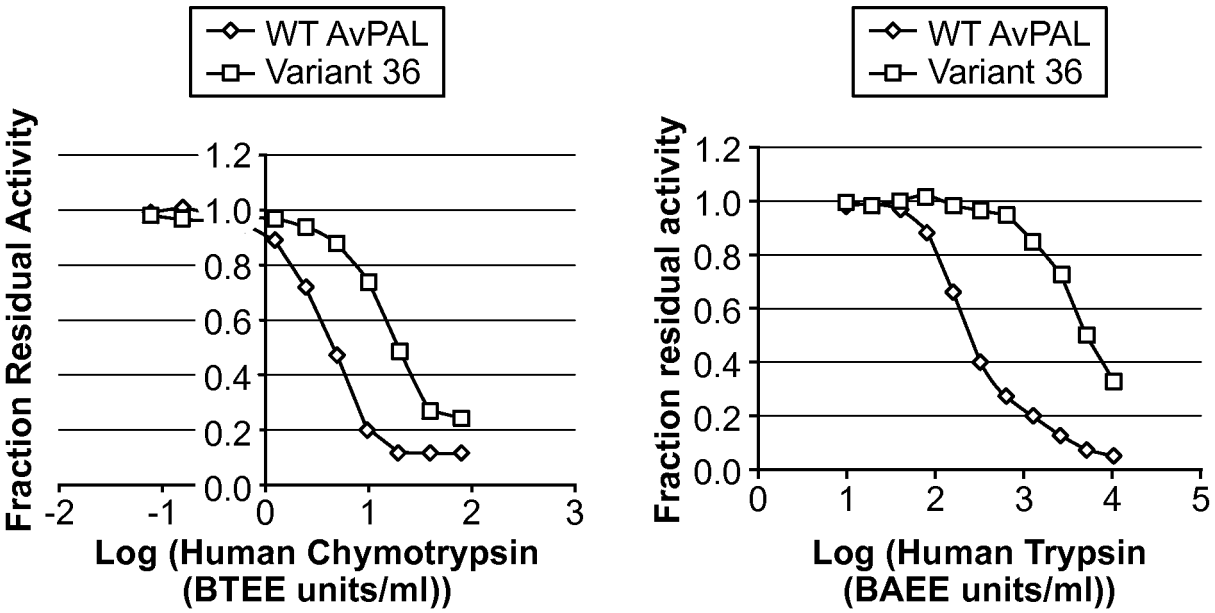

WT AvPAL
Variant 36
Fraction Residual Activity
1.2
1.0
0.8
0.6
0.4
0.2
0.0
-2
-1
0
1
2
3
Log (Human Chymotrypsin (BTEE units/ml))
WT AvPAL
Variant 36
Fraction residual activity
1.2
1.0
0.8
0.6
0.4
0.2
0.0
0
1
2
3
4
5
Log (Human Trypsin (BAEE units/ml))

FIG. 5

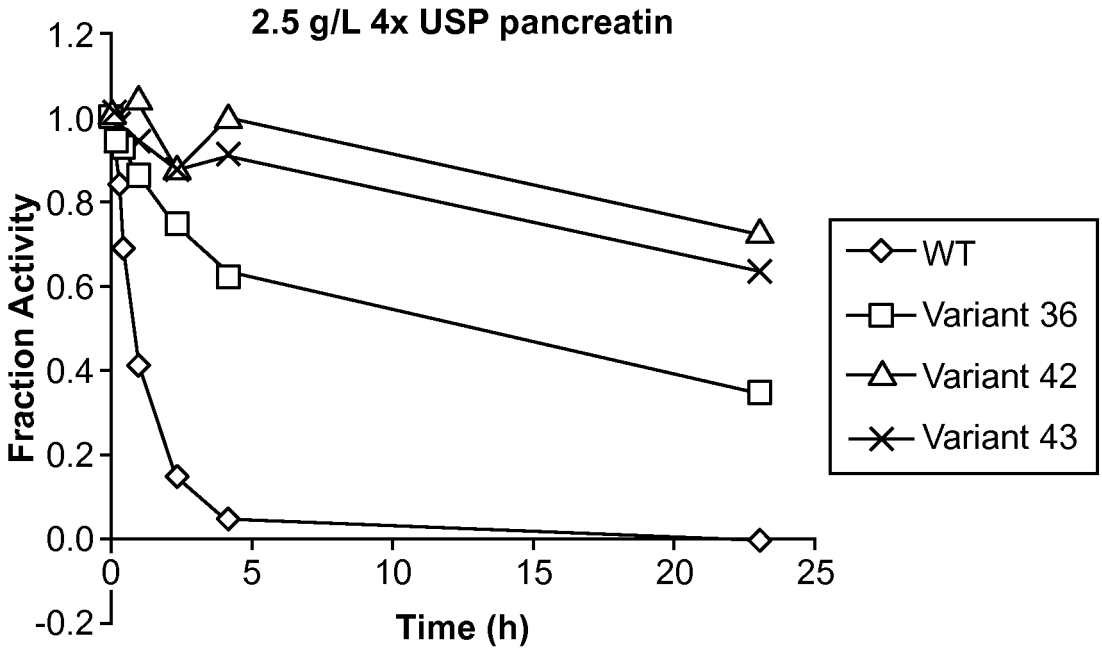

2.5 g/L 4x USP pancreatin
Fraction Activity
1.2
1.0
0.8
0.6
0.4
0.2
0.0
-0.2
0
5
10
15
20
25
Time (h)
WT
Variant 36
Variant 42
Variant 43

FIG. 6

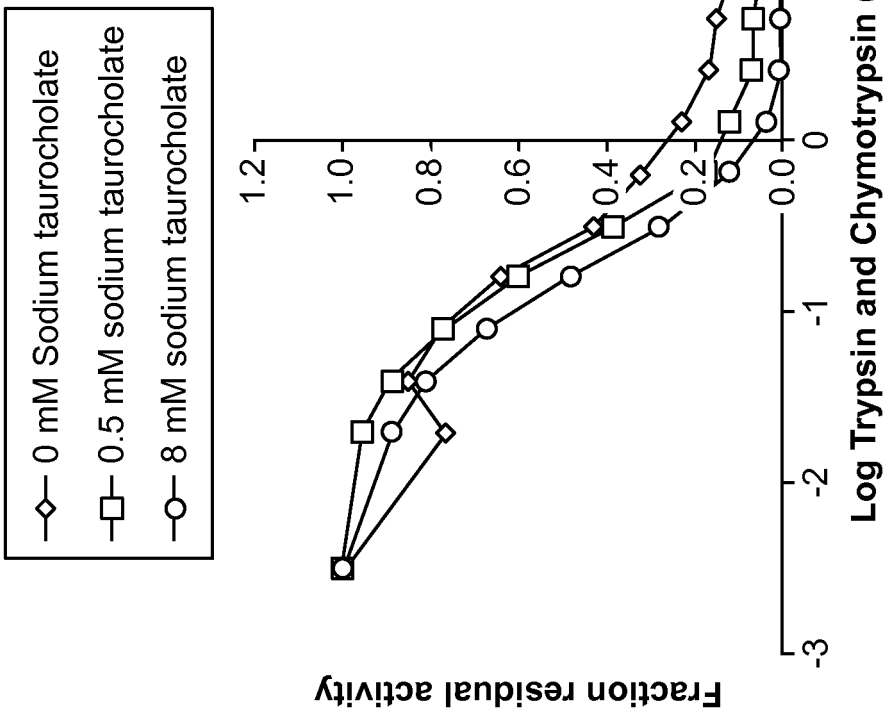

0 mM Sodium taurocholate
0.5 mM sodium taurocholate
8 mM sodium taurocholate
Fraction residual activity
1.2
1.0
0.8
0.6
0.4
0.2
0.0
-3
-2
-1
0
1
2
Log Trypsin and Chymotrypsin (g/L)

FIG. 7

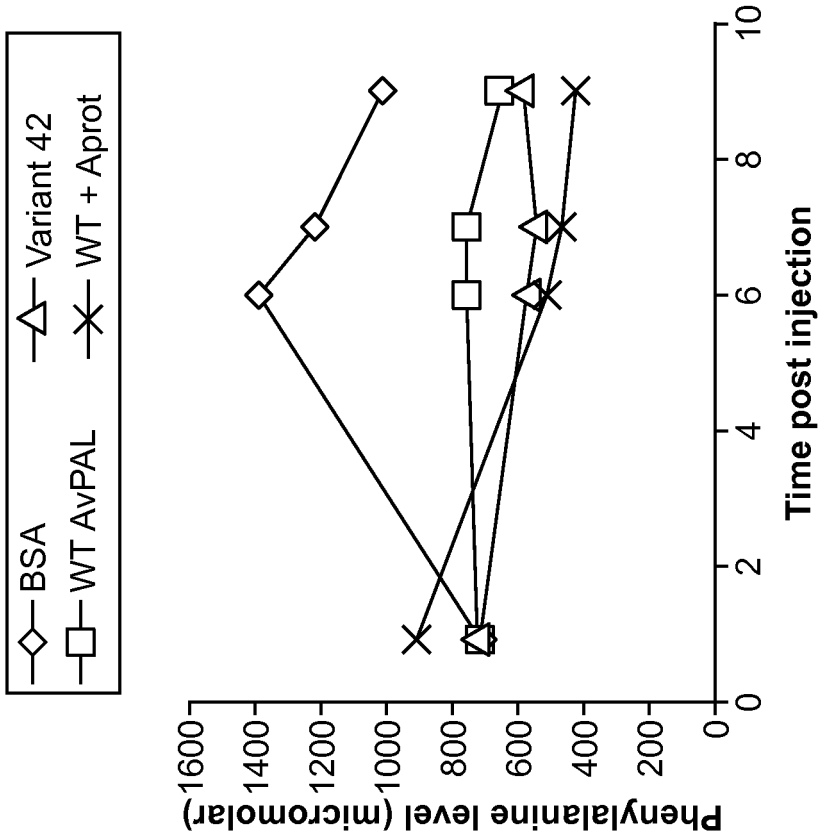

BSA
WT AvPAL
Variant 42
WT + Aprot
Phenylalanine level (micromolar)
1600
1400
1200
1000
800
600
400
200
0
0
2
4
6
8
10
Time post injection

FIG. 8