Figure S2:

Set of figures with the non-linear mixed effect model fits for all PDXs. Within every treatment, the volume (DV) is plotted against time (TIME) for every PDX. The modeled natural growth curves are shown (blue dashed line) and the model (red solid line) fit to the observed values (dark blue points). Tumor growth curves from treatment TAS266 show a bad model fit.
Treatment 5FU
Treatment abraxane

X−2428 with kg: 0.0017098
kd: 0.018438
kr: 3.682e−05

X−4018 with kg: 0.030679
kd: 3.77e−05
kr: 0.00080669

X−3816 with kg: 0.043136
kd: 3.77e−05
kr: 0.00046676

X−3028 with kg: 0.052865
kd: 3.77e−05
kr: 0.00010493

X−1199 with kg: 0.010383
kd: 3.77e−05
kr: 0

X−4676 with kg: 0.055631
kd: 3.77e−05
kr: 0

X−4145 with kg: 0.062451
kd: 3.77e−05
kr: 0

X−3846 with kg: 0.050642
kd: 3.77e−05
kr: 0

X−3038 with kg: 0.035068
kd: 3.77e−05
kr: 0

X−2470 with kg: 0.039964
kd: 3.77e−05
kr: 0

X−1289 with kg: 0.045101
kd: 3.77e−05
kr: 0

X−4927 with kg: 0.093421
kd: 3.77e−05
kr: 0

X−4215 with kg: 0.04736
kd: 3.77e−05
kr: 0

X−4226 with kg: 0.026776
kd: 3.77e−05
kr: 0

X−4378 with kg: 0.017174
kd: 3.77e−05
kr: 0
Treatment binimetinib−3.5mpk
Treatment BKM120 + binimetinib
Treatment BYL719 + binimetinib

X−5438 with kg: 0.0060774
dk: 0.076313
kr: 0.067652

X−2484 with kg: 0.011762
dk: 0.020812
kr: 0.01083

X−1027 with kg: 0.098481
dk: 0.1002
kr: 0.012298

X−3224 with kg: 0.010334
dk: 0.070981
kr: 0.012298

X−5578 with kg: 0.048407
dk: 0.041652
kr: 0.016628

X−2822 with kg: 0.04018
dk: 0.046313
kr: 0.011074

X−1500 with kg: 0.02362
dk: 0.049718
kr: 0.031932

X−1479 with kg: 0.066508
dk: 0.071657
kr: 0.0051871

X−1167 with kg: 0.060405
dk: 0.071916
kr: 0.0097266

X−1270 with kg: 0.02362
dk: 0.097266
kr: 0.011074

X−130 with kg: 0.0060774
dk: 0.076313
kr: 0.067652

X−326 with kg: 0.0090625
dk: 0.016877
kr: 0.011997

X−144 with kg: 0.033054
dk: 0.012336
kr: 0.011997

X−119 with kg: 0.061823
dk: 0.070981
kr: 0.011997

X−117 with kg: 0.060405
dk: 0.070981
kr: 0.011997

X−116 with kg: 0.0060774
dk: 0.076313
kr: 0.067652

X−132 with kg: 0.060972
dk: 0.070981
kr: 0.011997

X−144 with kg: 0.033054
dk: 0.012336
kr: 0.011997

X−143 with kg: 0.029662
dk: 0.019992
kr: 0.011997

X−142 with kg: 0.029662
dk: 0.019992
kr: 0.011997

X−141 with kg: 0.029662
dk: 0.019992
kr: 0.011997

X−140 with kg: 0.029662
dk: 0.019992
kr: 0.011997

X−139 with kg: 0.029662
dk: 0.019992
kr: 0.011997
Treatment BYL719 + encorafenib

- Time points: 0, 30, 60, 90
- X-axis: Time (in minutes or hours)
- Y-axis: Concentration

Graphs show dynamic changes in concentration over time for different treatments and conditions.
Treatment cetuximab + encorafenib
Treatment dacarbazine

| Compound | Conc (kg) | kr  | kd     | Conc (kg) | kr  | kd     |
|----------|----------|-----|--------|----------|-----|--------|
| X−1656   | 0.036539 | 0   | 0      | X−2067   | 0.063259 | 0.048169 |
|          | 0.093114 | 0.008272 | 0.050478 |          | 0.000481 | 0.000000 |
| X−2163   | 0.045173 | 0   | 0      | X−2366   | 0.053024 | 0.040841 |
|          | 0.057048 | 0.008272 | 0.050478 |          | 0.000481 | 0.000000 |
| X−2669   | 0.043877 | 0   | 0      | X−2617   | 0.10716  | 0.043516 |
|          | 0.020627 | 0.008272 | 0.050478 |          | 0.000481 | 0.000000 |
| X−2709   | 0.05869  | 0   | 0      | X−2732   | 0.07489  | 0.019783 |
|          | 0.017806 | 0.008272 | 0.050478 |          | 0.000481 | 0.000000 |
| X−2732   | 0.07489  | 0   | 0      | X−2753   | 0.051888 | 0.019783 |
|          | 0.019783 | 0.008272 | 0.050478 |          | 0.000481 | 0.000000 |
| X−2838   | 0.05933  | 0   | 0      | X−2859   | 0.059733 | 0.019783 |
|          | 0.039257 | 0.008272 | 0.050478 |          | 0.000481 | 0.000000 |
| X−2921   | 0.25647  | 0   | 0      | X−3226   | 0.032038 | 0.024038 |
|          | 0.036525 | 0.008272 | 0.050478 |          | 0.000481 | 0.000000 |
| X−3211   | 0.024038 | 0   | 0      | X−3445   | 0.11238  | 0.019452 |
|          | 0.001227 | 0.008272 | 0.050478 |          | 0.000481 | 0.000000 |
| X−3445   | 0.11238  | 0   | 0      | X−3469   | 0.083995 | 0.019452 |
|          | 0.004053 | 0.008272 | 0.050478 |          | 0.000481 | 0.000000 |
| X−3503   | 0.07393  | 0   | 0      | X−3536   | 0.07793  | 0.019452 |
|          | 0.005471 | 0.008272 | 0.050478 |          | 0.000481 | 0.000000 |
| X−3676   | 0.17194  | 0   | 0      | X−3746   | 0.097119 | 0.024038 |
|          | 0.03579  | 0.008272 | 0.050478 |          | 0.000481 | 0.000000 |
| X−3772   | 0.030926 | 0   | 0      | X−3854   | 0.057476 | 0.011233 |
|          | 0.002438 | 0.008272 | 0.050478 |          | 0.000481 | 0.000000 |
| X−3854   | 0.057476 | 0   | 0      | X−3880   | 0.041337 | 0.011233 |
|          | 0.003073 | 0.008272 | 0.050478 |          | 0.000481 | 0.000000 |
| X−4157   | 0.053911 | 0   | 0      | X−4197   | 0.031026 | 0.019452 |
|          | 0.005819 | 0.008272 | 0.050478 |          | 0.000481 | 0.000000 |
| X−4336   | 0.031026 | 0   | 0      | X−4425   | 0.10671  | 0.040053 |
|          | 0.00779  | 0.008272 | 0.050478 |          | 0.000481 | 0.000000 |
| X−4425   | 0.10671  | 0   | 0      | X−4455   | 0.093687 | 0.0050711 |
|          | 0.004053 | 0.008272 | 0.050478 |          | 0.000481 | 0.000000 |
| X−4538   | 0.093687 | 0   | 0      | X−4644   | 0.006988 | 0.0050711 |
|          | 0.002588 | 0.008272 | 0.050478 |          | 0.000481 | 0.000000 |
| X−4644   | 0.006988 | 0   | 0      | X−4688   | 0.009382 | 0.0050711 |
|          | 0.001054 | 0.008272 | 0.050478 |          | 0.000481 | 0.000000 |
| X−4688   | 0.009382 | 0   | 0      | X−4724   | 0.009382 | 0.0050711 |
|          | 0.004245 | 0.008272 | 0.050478 |          | 0.000481 | 0.000000 |
| X−4724   | 0.009382 | 0   | 0      | X−4864   | 0.005391 | 0.0050711 |
|          | 0.001652 | 0.008272 | 0.050478 |          | 0.000481 | 0.000000 |
| X−4864   | 0.005391 | 0   | 0      | X−4904   | 0.072303 | 0.0050711 |
|          | 0.001652 | 0.008272 | 0.050478 |          | 0.000481 | 0.000000 |
Treatment erlotinib

- X-1158 with kg: 0.0010388
  - kd: 0.0031292
  - kr: 0

- X-1823 with kg: 0.015968
  - kd: 0.015942
  - kr: 0

- X-1834 with kg: 0.13556
  - kd: 0.039476
  - kr: 0

- X-1939 with kg: 0.062831
  - kd: 0.017783
  - kr: 0

- X-1953 with kg: 0.060331
  - kd: 0.023835
  - kr: 0

- X-2014 with kg: 0.062441
  - kd: 0.049433
  - kr: 0

- X-2094 with kg: 0.10396
  - kd: 0.035778
  - kr: 0

- X-3022 with kg: 0.016487
  - kd: 0.035432
  - kr: 0

- X-3843 with kg: 0.084371
  - kd: 0.045242
  - kr: 0
Treatment figitumumab

X−1199 with kg: 0.010383
kd: 0.00062114
kr: 0

X−1298 with kg: 0.046101
kd: 0.0011752
kr: 0

X−1317 with kg: 0.0776
kd: 0.043336
kr: 0

X−1362 with kg: 0.035188
kd: 0.018471
kr: 0

X−1948 with kg: 0.022557
kd: 0.0006166
kr: 0

X−2043 with kg: 0.051679
kd: 0.0015664
kr: 0

X−2081 with kg: 0.089187
kd: 0.000267
kr: 0

X−3395 with kg: 0.015005
kd: 0.0075214
kr: 0

X−2428 with kg: 0.001708
kd: 0.0001717
kr: 0

X−2476 with kg: 0.039664
kd: 0.007848
kr: 0

X−2564 with kg: 0.048186
kd: 0.0058735
kr: 0

X−2632 with kg: 0.027979
kd: 0.00080592
kr: 0

X−2694 with kg: 0.041813
kd: 0.0042412
kr: 0

X−2997 with kg: 0.064473
kd: 0.0077191
kr: 0

X−3028 with kg: 0.052865
kd: 0.001932
kr: 0

X−3036 with kg: 0.055868
kd: 0.0059388
kr: 0

X−3052 with kg: 0.049619
kd: 0.0015129
kr: 0

X−3260 with kg: 0.031636
kd: 0.0019988
kr: 0

X−3782 with kg: 0.044348
kd: 0.0074027
kr: 0

X−3800 with kg: 0.030865
kd: 0.0076719
kr: 0

X−3816 with kg: 0.045736
kd: 0.0072621
kr: 0

X−3846 with kg: 0.050642
kd: 0.0061414
kr: 0

X−3898 with kg: 0.050952
kd: 0.0065842
kr: 0

X−3947 with kg: 0.026794
kd: 0.0011871
kr: 0

X−3990 with kg: 0.04771
kd: 0.0075284
kr: 0

X−4015 with kg: 0.056813
kd: 0.0076396
kr: 0

X−4018 with kg: 0.030679
kd: 0.007191
kr: 0

X−4086 with kg: 0.055868
kd: 0.0059388
kr: 0

X−4146 with kg: 0.062451
kd: 0.0051169
kr: 0

X−4195 with kg: 0.047366
kd: 0.0028411
kr: 0

X−4206 with kg: 0.026776
kd: 0.0011989
kr: 0

X−4316 with kg: 0.038897
kd: 0.0020913
kr: 0

X−4376 with kg: 0.017774
kd: 0.0008922
kr: 0

X−4499 with kg: 0.023717
kd: 0.0006043
kr: 0

X−4676 with kg: 0.056331
kd: 0.001111
kr: 0

X−4792 with kg: 0.039421
kd: 0.002266
kr: 0

X−5205 with kg: 0.050003
kd: 0.0032186
kr: 0
### Treatment figitumumab + binimetinib

| X-1199 with kg: 0.010869 | X-1289 with kg: 0.046101 | X-1362 with kg: 0.053518 | X-1948 with kg: 0.002557 | X-2026 with kg: 0.06686 | X-2043 with kg: 0.051679 |
|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|
| kd: 0.010669               | kd: 0.007602               | kd: 0.018661               | kd: 0.0043792              | kd: 0.0052345              | kd: 0.0016431              |
| kr: 0                      | kr: 0                      | kr: 0                      | kr: 0                      | kr: 0                      | kr: 0                      |

| X-2086 with kg: 0.069187   | X-339 with kg: 0.015005    | X-2428 with kg: 0.0017098  | X-2470 with kg: 0.039664   | X-2564 with kg: 0.049186   | X-2633 with kg: 0.027879   |
|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|
| kd: 0.027756              | kd: 0.015808               | kd: 0.064456               | kd: 0.02302                | kd: 0.004914               | kd: 0.017819               |
| kr: 0                      | kr: 0                      | kr: 0                      | kr: 0                      | kr: 0                      | kr: 0                      |

| X-2646 with kg: 0.041813   | X-2997 with kg: 0.064473   | X-3628 with kg: 0.052985   | X-3986 with kg: 0.059592   | X-3947 with kg: 0.067934   | X-3268 with kg: 0.031636   |
|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|
| kd: 0.065156              | kd: 0.01468               | kd: 0.042265               | kd: 0.011346              | kd: 0.017936              | kd: 0.0054038              |
| kr: 0                      | kr: 0                      | kr: 0                      | kr: 0                      | kr: 0                      | kr: 0                      |

| X-378 with kg: 0.044348    | X-380 with kg: 0.030865    | X-3816 with kg: 0.043136   | X-3846 with kg: 0.050642   | X-3986 with kg: 0.059592   | X-3268 with kg: 0.031636   |
|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|
| kd: 0.005989              | kd: 0.01772               | kd: 0.003927              | kd: 0.003744              | kd: 0.01376               | kd: 0.0054038              |
| kr: 0                      | kr: 0                      | kr: 0                      | kr: 0                      | kr: 0                      | kr: 0                      |

| X-3996 with kg: 0.04771    | X-4015 with kg: 0.063813   | X-4018 with kg: 0.030679   | X-4148 with kg: 0.0262451  | X-4215 with kg: 0.04736    | X-4226 with kg: 0.026776   |
|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|
| kd: 0.0061013              | kd: 0.006084              | kd: 0.030685               | kd: 0.006011              | kd: 0.0017715             | kd: 0.0017712             |
| kr: 0                      | kr: 0                      | kr: 0                      | kr: 0                      | kr: 0                      | kr: 0                      |

| X-4316 with kg: 0.038897   | X-4378 with kg: 0.017774   | X-4649 with kg: 0.023717   | X-4676 with kg: 0.056631   | X-4927 with kg: 0.093421   |
|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|
| kd: 0.0087323              | kd: 0.0018017              | kd: 0.015806               | kd: 0.015619              | kd: 0.0070689             |
| kr: 0                      | kr: 0                      | kr: 0                      | kr: 0                      | kr: 0                      |

### Graphs

Graphs showing the interaction of figitumumab and binimetinib at various concentrations and time points.
Treatment gemcitabine–50mpk

X−119with kg: 0.010933
kd: 0.0071131
kr: 0.00

X−128with kg: 0.045101
kd: 0.098589
kr: 0.00

X−1317with kg: 0.0776
kd: 0.03561
kr: 0.00

X−1362with kg: 0.035188
kd: 0.016426
kr: 0.00

X−1946with kg: 0.022557
kd: 0.016889
kr: 0.00

X−2026with kg: 0.06668
kd: 0.11574
kr: 0.00

X−2043with kg: 0.051679
kd: 0.036865
kr: 0.00

X−239with kg: 0.015085
kd: 0.037669
kr: 0.00

X−326with kg: 0.031636
kd: 0.042339
kr: 0.00

X−360with kg: 0.036865
kd: 0.002658
kr: 0.00

X−386with kg: 0.043136
kd: 0.0021905
kr: 0.00

X−415with kg: 0.062451
kd: 0.079165
kr: 0.00

X−392with kg: 0.049619
kd: 0.065292
kr: 0.00

X−394with kg: 0.06794
kd: 0.041349
kr: 0.00

X−399with kg: 0.04771
kd: 0.011072
kr: 0.00

X−4015with kg: 0.063813
kd: 0.011072
kr: 0.00

X−4145with kg: 0.062451
kd: 0.079165
kr: 0.00

X−421with kg: 0.04736
kd: 0.05129
kr: 0.018736

X−426with kg: 0.026776
kd: 0.04805
kr: 0.018736

X−4316with kg: 0.038897
kd: 0.011072
kr: 0.00

X−437with kg: 0.017174
kd: 0.006691
kr: 0.00

X−464with kg: 0.023717
kd: 0.014257
kr: 0.00

X−476with kg: 0.055631
kd: 0.079165
kr: 0.00

X−492with kg: 0.093421
kd: 0.02586
kr: 0.008739

X−525with kg: 0.05003
kd: 0.049147
kr: 0.00
Treatment INC280
| X-119with kg: 0.010383 | X-1317with kg: 0.0776 | X-1362with kg: 0.035188 | X-1948with kg: 0.022557 | X-2026with kg: 0.06686 | X-2043with kg: 0.051679 |
|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
| kd: 0.021694           | kd: 0.08135            | kd: 0.021125           | kd: 0.02004            | kd: 0.060424            | kd: 0.042625            |
| kr: 0                   | kr: 0                   | kr: 0                   | kr: 0                   | kr: 0                   | kr: 0                   |
| X-208with kg: 0.089187 | X-339with kg: 0.015005 | X-256with kg: 0.048186 | X-263with kg: 0.027079 | X-264with kg: 0.041813 | X-2997with kg: 0.064473 |
| kd: 0.080689            | kd: 0.020287            | kd: 0.020967           | kd: 0.017314            | kd: 0.07126             | kd: 0.06994             |
| kr: 0                   | kr: 0                   | kr: 0                   | kr: 0                   | kr: 0                   | kr: 0                   |
| X-302with kg: 0.052865 | X-2038with kg: 0.055868 | X-3052with kg: 0.049619 | X-326with kg: 0.031636 | X-380with kg: 0.030865 | X-381with kg: 0.043136 |
| kd: 0.039635            | kd: 0.047529            | kd: 0.012196           | kd: 0.02184             | kd: 0.07293             | kd: 0.03215             |
| kr: 0                   | kr: 0                   | kr: 0                   | kr: 0                   | kr: 0                   | kr: 0                   |
| X-3846with kg: 0.050564 | X-389with kg: 0.050552 | X-394with kg: 0.067594 | X-399with kg: 0.04771  | X-401with kg: 0.063813 | X-401with kg: 0.030679 |
| kd: 0.024169            | kd: 0.047237            | kd: 0.047233           | kd: 0.028132            | kd: 0.063813            | kd: 0.02911             |
| kr: 0                   | kr: 0                   | kr: 0                   | kr: 0                   | kr: 0                   | kr: 0                   |
| X-414with kg: 0.062451 | X-421with kg: 0.04736  | X-426with kg: 0.026776 | X-437with kg: 0.017174 | X-464with kg: 0.023717 | X-467with kg: 0.055831 |
| kd: 0.045293            | kd: 0.034844            | kd: 0.031825           | kd: 0.038307            | kd: 0.035062            | kd: 0.035148            |
| kr: 0                   | kr: 0                   | kr: 0                   | kr: 0                   | kr: 0                   | kr: 0                   |
| X-492with kg: 0.093421 | X-525with kg: 0.066156 | X-525with kg: 0.05993  |                       |                       |                       |
| kd: 0.066156            | kd: 0.066156            | kd: 0.025983           |                       |                       |                       |
| kr: 0                   | kr: 0                   | kr: 0                   |                       |                       |                       |
Treatment LCL161 + paclitaxel
Treatment LFW527 + everolimus
Treatment LJC049
Treatment LJM716 + trastuzumab
Treatment trastuzumab
