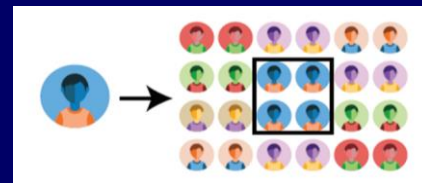


MatchTx

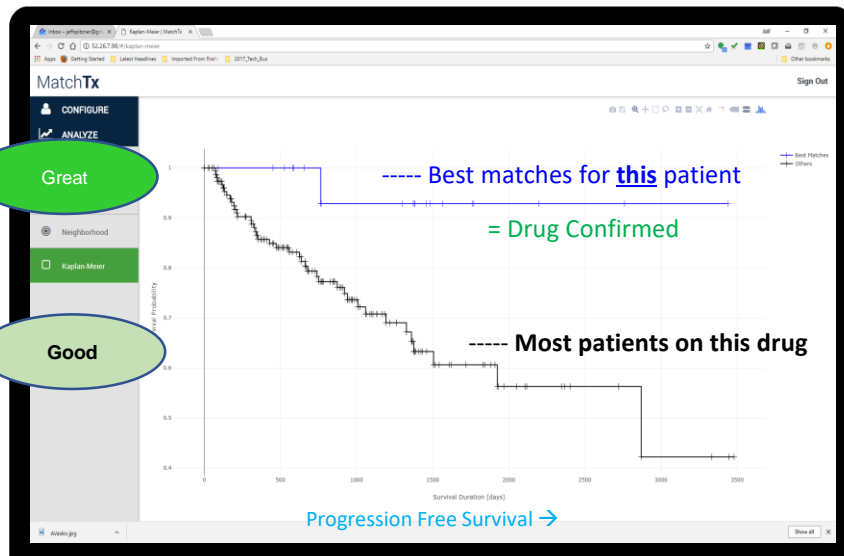


Case Study – Prostate Cancer

Sample: 190 Patients with High Gleason Score Prostate Cancer.

Method: For each Test Patient, a reference database was analyzed consisting of the other 189 patients with their (1) individual genome variants called (VCF file) based on whether there were functional gene mutations and (2) their actual outcomes after drug treatment (progression free survival). **MatchTx Analysis** and data reduction was performed on all genes for which data were available, generating the set of Deep Genetic Signatures™ (DGSs) that predicted prostate cancer patient outcome (in this set, 1 gene and 2-gene combination biomarkers). All genes whose status did not predict outcome were discarded. Each Test Patient was matched against the reference database to find the cohort (subset of top 5%) who shared the greatest similarity based on number of matches (DGSs). Kaplan Meier plots are shown comparing progression-free survival of the best matched patients (blue line) versus the rest of the patients (the 95% whose tumors are genetically less similar to the test Patient for the meaningful DGS biomarkers). Test Patient Outcome is inferred from best matched patients.

Ex. 1. Patient #872 was predicted by MatchTx to be good match to drug. **Result:** Patient did well (Progression free)

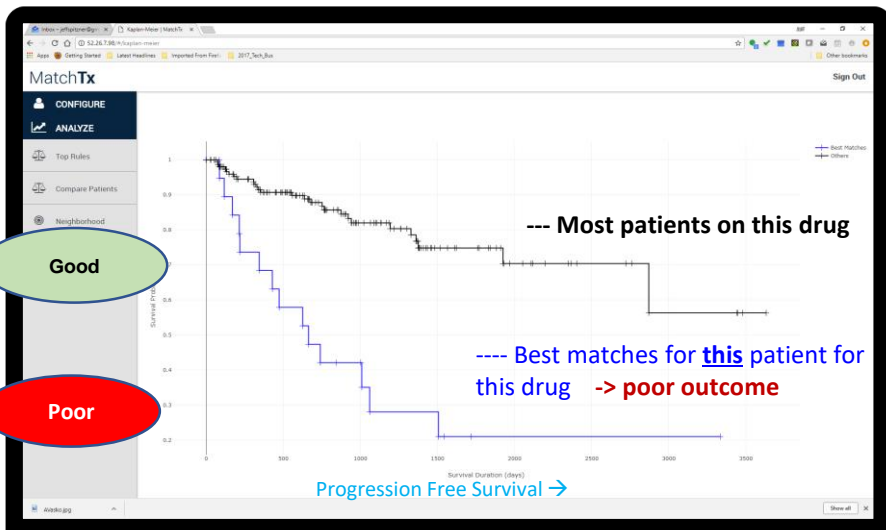


DGS Biomarkers (partial set) in this good drug response prostate cancer cohort:

Description	Match Count	Strength
WWC1 mut & RANBP17 wt	23	1.411e-6
CTDP1 mut & SLC6A7 wt	17	2.717e-6
MAP3K6 wt	160	8.292e-3
UNC93A wt	104	6.060e-3
TP53 mut	60	9.596e-3
TM9SF4 wt	151	1.298e-3
KIT wt	159	3.820e-3
CACNA1A wt	126	5.712e-3

(Note that a 2-gene DGS means that the status of the gene alone was not significant for predicting outcome)

Ex. 2. Patient #472 predicted as poor candidate for this drug. **Result:** Patient did poorly (Short PFS period)



DGS Biomarkers (partial set) in this poor drug response prostate cancer cohort:

FOXO1 wt & SDHC wt	163
CRYGN wt & SDHC wt	162
CCDC136 wt & SDHC wt	155
BIRC3 wt & SDHC wt	158
ANKLE2 wt & SDHC wt	151
MAP3K6 wt	160
UNC93A mut	74
TP53 mut	60
TM9SF4 wt	151
KIT mut	19
CACNA1A mut	52