0.fit_qinlabrls.Rmd

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20180510Wed need to verify updated files are consisitent with manuscript.

```
rm(list=ls())
library('flexsurv')
```

```
## Loading required package: survival
```

```
source("lifespan.r")
```

Parse strains from files

```
set.seed(20170101)
files = list.files(path="rls", pattern="csv")
strains=c("101S", "M1-2","M13","M14","M2-8","M22","M32","M34","M5","M8","RM112N","S288c","SGU57", "YPS1
```

```
report = data.frame(cbind(strains))
report$samplesize = NA; report$R=NA; report$t0=NA; report$n=NA; report$G=NA; report$longfilename=NA;
```

Fit all RLS data sets by strains

```
for( i in 1:length(report[,1])){
  tb = read.csv( paste("rls/",files[i],sep=''))
  report$samplesize[i] = length(tb[,1])

  GompFlex = flexsurvreg(formula = Surv(tb[,1]) ~ 1, dist = 'gompertz')
  WeibFlex = flexsurvreg(formula = Surv(tb[,1]) ~ 1, dist = 'weibull')

  report$avgLS[i] =  mean(tb[,1])
  report$stdLS[i] =  sd(tb[,1])
  report$CV[i] = report$stdLS[i] / report$avgLS[i]

  report$GompGFlex[i] = GompFlex$res[1,1]
  report$GompRFlex[i] = GompFlex$res[2,1]
  report$GompLogLikFlex[i] = round(GompFlex$loglik, 1)
  report$GompAICFlex[i] = round(GompFlex$AIC)

  report$WeibShapeFlex[i] = WeibFlex$res[1,1]
  report$WeibRateFlex[i] = WeibFlex$res[2,1]
  report$WeibLogLikFlex[i] = round(WeibFlex$loglik, 1)
  report$WeibAICFlex[i] = round(WeibFlex$AIC)

  #set initial values
  Rhat = report$GompRFlex[i]; # 'i' was missing. a bug costed HQ a whole afternoon.
```

```
  Ghat = report$GompGFlex[i];
  nhat = 6;
  t0= (nhat-1)/Ghat;
  fitBinom = optim ( c(Rhat, t0, nhat),  llh.binomialMortality.single.run,
                     lifespan=tb[,1],
                     #method='SANN') #SANN needs control
                     method="L-BFGS-B",
                     lower=c(1E-3, 1, 2), upper=c(0.1,200,10) );
  report[i, c("R", "t0", "n")] = fitBinom$par[1:3]
  report$G[i] = (report$n[i] - 1)/report$t0[i]
}
```