

A small tutorial for getting started using EFMrep

Based on version v1.0.1

Open EFMrep and find tutorial data

- In R-console, run following command to open the GUI:

```
library(EFMrep);efm2()
```

Note that EuroForMix must also be installed.

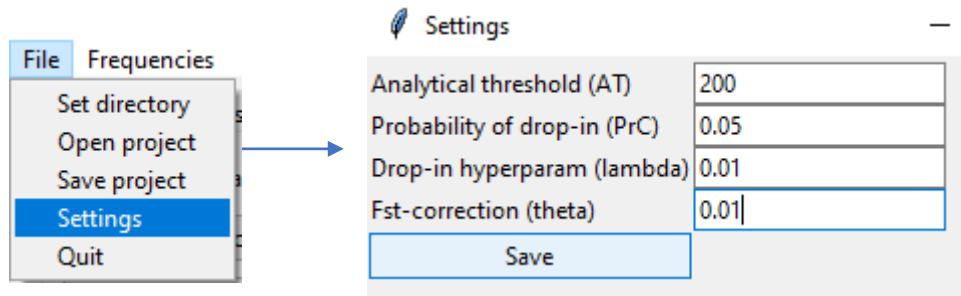
- Data is available in the R-package installation folder. Found by running:

```
path.package("EFMrep")
```

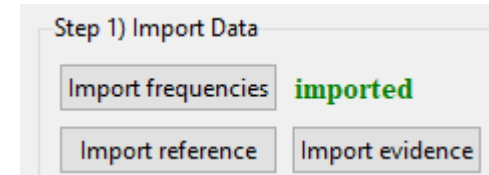
- Datasets

1. `\EFMrep\tutorialdata1`
2. `\EFMrep\tutorialdata2`

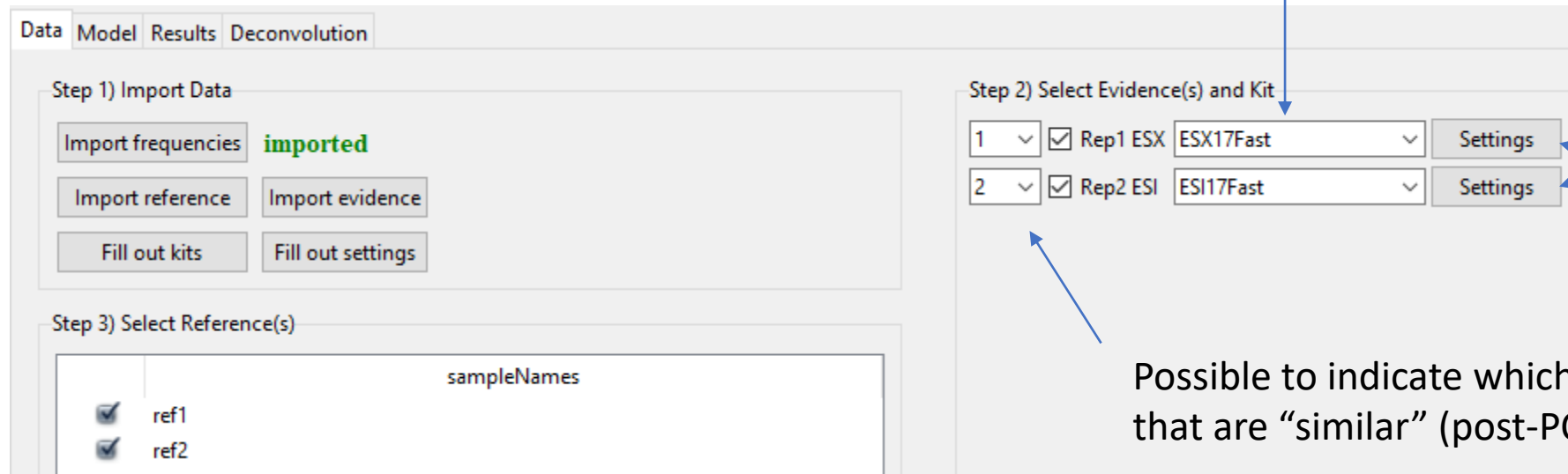
Tutorialdata 1: ESX17 and ESI17 combination



Import different data from tutorial folder:



After importing data:



Specify kit of each imported replicates

Can specify specific settings for each replicate

Possible to indicate which replicates that are "similar" (post-PCR replicates)

Proceed by clicking **Weight-of-Evidence** (to calculate LR)

Model specification panel

Data Model Results Deconvolution

Hypothesis specification

Number of contributors
NOC: 2

Contributor(s) under Hp:
C1 ref1
C2 ref2
Add kinship

Contributor(s) under Hd:
C1 ref1
C2 ref2
Add kinship

Further:
Print data
Compare reps
CALCULATE

Degradation slope param

n-1 and n+1 stutter params

Model specification

Replicate	Kit	mixProp	PHexp	PHvar	DEG	BWS	FWS
<input checked="" type="checkbox"/> Rep1	ESX ESX17Fast	1	1	1	1	Equal	0
<input checked="" type="checkbox"/> Rep2	ESI ESI17Fast	2	2	2	2	1	0

Same number means a common parameter across the replicates

Result panel (for selected model)

The screenshot shows the 'Results' tab of a software interface. At the top, there are tabs for 'Data', 'Model', 'Results', and 'Deconvolution'. Below the tabs, there is a 'Go to calculation (#id):' dropdown menu set to '1', and two buttons: 'Model comparison' and 'Create report'. The main content area is divided into four panels:

- Hypotheses + Model:** Hp: ref1/ref2, Hd: ref1 + 1 unknown. A 'Parameter info' button is present.
- Joint LR:** LR= 6.061e+20, log10LR= 20.78. An 'LR per-marker' button is present.
- Estimates under Hd:** Maximum Likelihood value: nContr= 2, nParam= 9, adj.loglik= -1623.43. A 'Show more' section contains 'Parameters' and 'logLik per marker' buttons.
- Estimates under Hp:** Maximum Likelihood value: nContr= 2, nParam= 9, adj.loglik= -1575.58. A 'Show more' section contains 'Parameters' and 'logLik per marker' buttons.

At the bottom, there is a 'Further Action' section with 'Model validation' and 'Deconvolution' buttons.

Many post-result possibilities:

- Go back and run new calculations from **Model Panel**
 - Explore other model variants
 - Possible to go back to previous model fits.
 - Compare different runs with **Model comparison**
- Create a report for the calculation
- Show LR per marker
- Show estimated parameters (Hp/Hd)
- Show logLik per marker (Hp/Hd)
- Obtain Model validation (Hp/Hd)
- Obtain Deconvolution results (Hp/Hd)