

# CaseSolver update

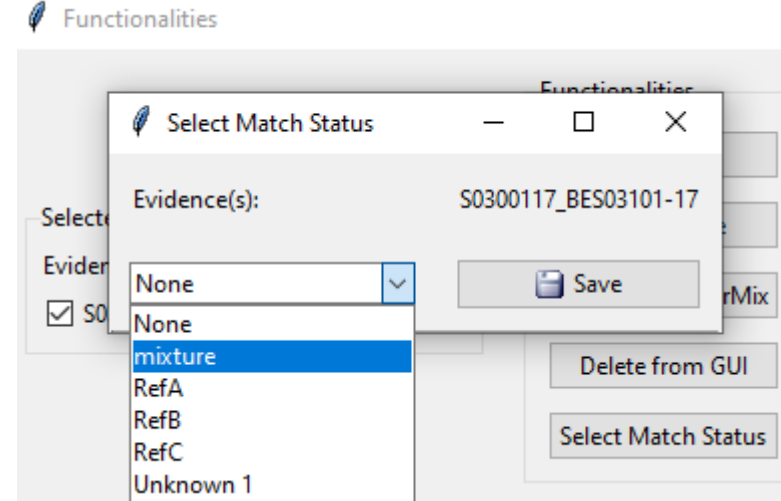
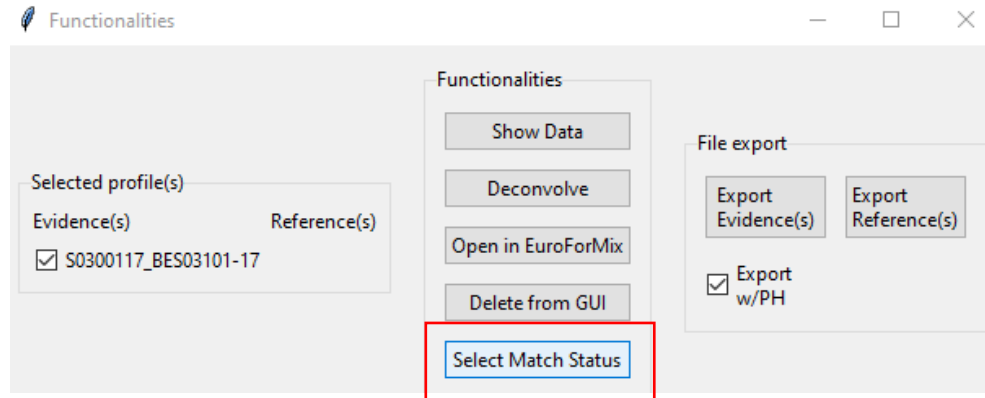
Version 2.0

By Øyvind Bleka, 16.11.22, Oslo University Hospital

# Summary

- Utilizes new version of EuroForMix (v4.0). **Requirement**
  - **Faster** qualitative and quantitative calculations (~4x)
- Emphasize on conservative LR calculations.
  - Utilizes EFM4 which enables Traceplot and “extended MCMC chain”.
- Other features:
  - IBS calculations now also shows number of mismatch
    - ✓ Useful for recognizing Unknowns that actually are reference profiles.
  - The user can modify the MatchStatus of any evidence profile.
    - ✓ Useful when mixtures are indicated as single source profiles (and visa versa).
  - Verbal statement for reporting is now only up to a certain LR threshold

## Modify MatchStatus of any evidence profile:



## Calculate IBS (Ref-Ref comparison):

The screenshot shows the 'Concordance of reference profiles (IBS)' window. The table below is the data shown in the window.

Ranl	nMismatch	Comparison	.	IBS	nLocs
1	24	Unknown 1	RefA	24	24
2	24	RefC	RefA	24	24
3	27	Unknown 1	RefB	21	24
4	28	RefB	RefA	20	24

- Table is now ranked wrt number of Mismatches. Also showing IBS value and number loci used in comparison (nLocs)
- Very useful when checking if Unknown is same as a imported Reference (nMismatches close to 0)!
- Be sure that IBS threshold is low enough to recognize partial profiles (14 is new default value)

# New WoE features:

1)

Set all cond(s) to None

Hypothesis window for weight of evidence

Add hyp. set   Select all   Unselect all   Evaluate

CONS:   Select all   Unselect all   **Uncondition all**

Set	Evid(s)	POI	Cond(s)	NOC	CONS
<input type="checkbox"/> #1	S0300117_BES03201-17	RefB	None	3	<input type="checkbox"/>
<input type="checkbox"/> #2	S0100217_BES01202-17	RefA	None	2	<input type="checkbox"/>
<input type="checkbox"/> #3	S0300117_BES03101-17	RefB	None	3	<input type="checkbox"/>
<input type="checkbox"/> #4	S0100217_BES01201-17	RefA	RefC	2	<input type="checkbox"/>
<input type="checkbox"/> #5	S0100217_BES01201-17	RefC	RefA	2	<input type="checkbox"/>
<input type="checkbox"/> #6	S0100217_BES01203-17	RefA	RefC	2	<input type="checkbox"/>
<input type="checkbox"/> #7	S0100217_BES01203-17	RefC	RefA	2	<input type="checkbox"/>
<input checked="" type="checkbox"/> #8	S0200117_BES02101-17	RefA	RefC	3	<input type="checkbox"/>
<input type="checkbox"/> #9	S0200117_BES02101-17	RefC	RefA	3	<input type="checkbox"/>

2)

Possible to select multiple WoE results

Data   Match Matrix   Match List (Qual.LR)   Match List (Quan.LR)   Matches   Deconvoluted   Weight-of-evidence

Further

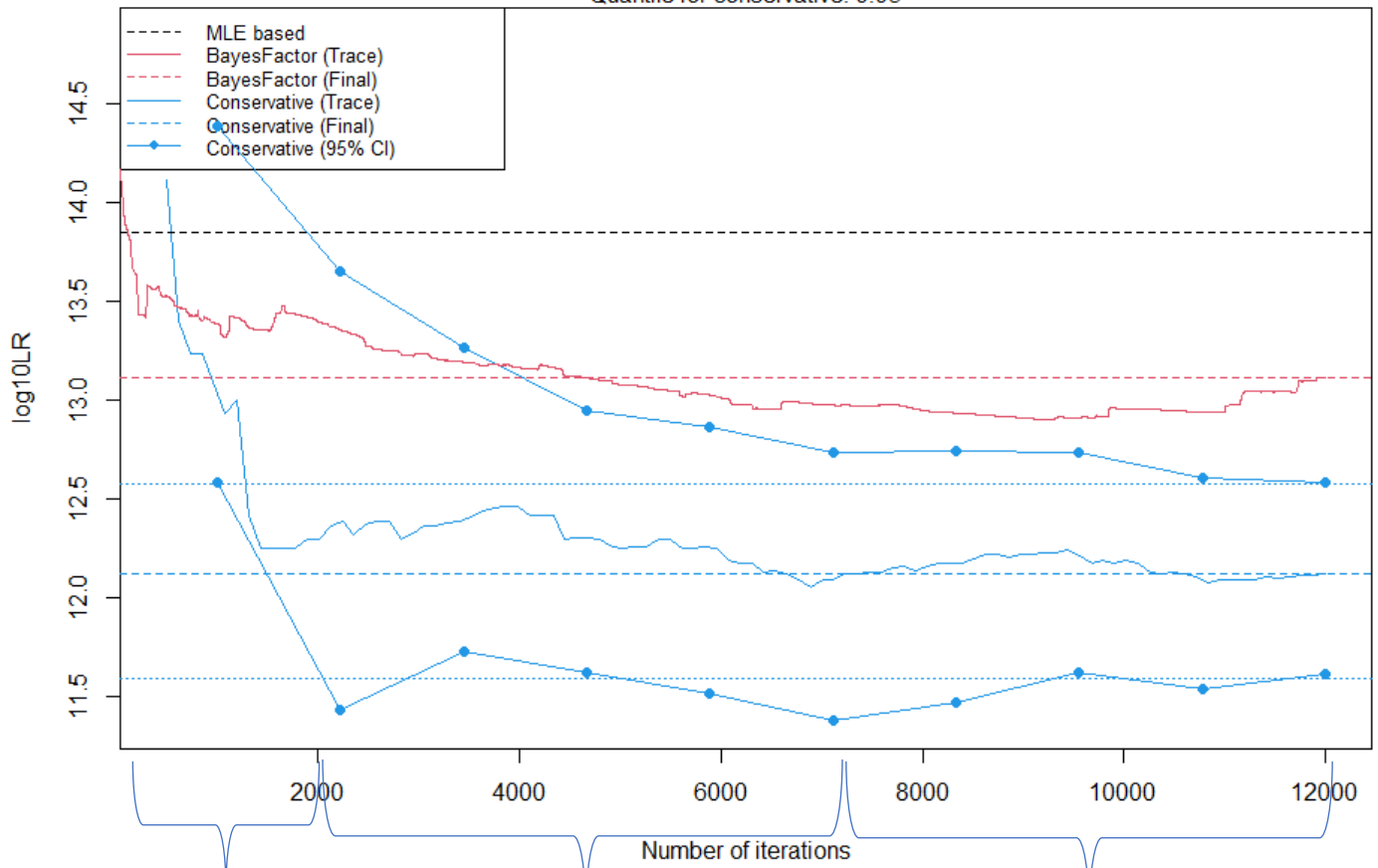
Export Table   Show LR-per marker (MLE)   Show param est.   Show model validation   Show model fitted PH   Show statement   **Calc. CONS**   Delete Selected

.	Evidence(s)	Person of int	Conditional(s)	NOC	MLE	Bayes	Conserv	MxPOI	Num. Failed (Hp/Hd)
#1	S0200117_BES02101-17	RefA	RefC	3	13.85	13.12	12.12	0.41	0/0
#2	S0100217_BES01202-17	RefA		2	29.84	-	-	0.88	0/0

3)

## Trace plot (MCMC)

Quantile for conservative: 0.05



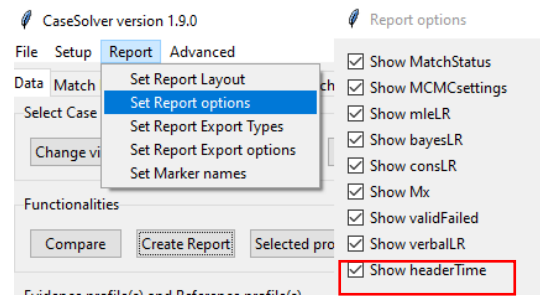
First run with 2000 iterations (default)

2<sup>nd</sup> and 3<sup>rd</sup> run with 5000 iterations (modified in MCMC settings)

Click again for more iterations in MCMC chain (and show updated Traceplot)

# Other features

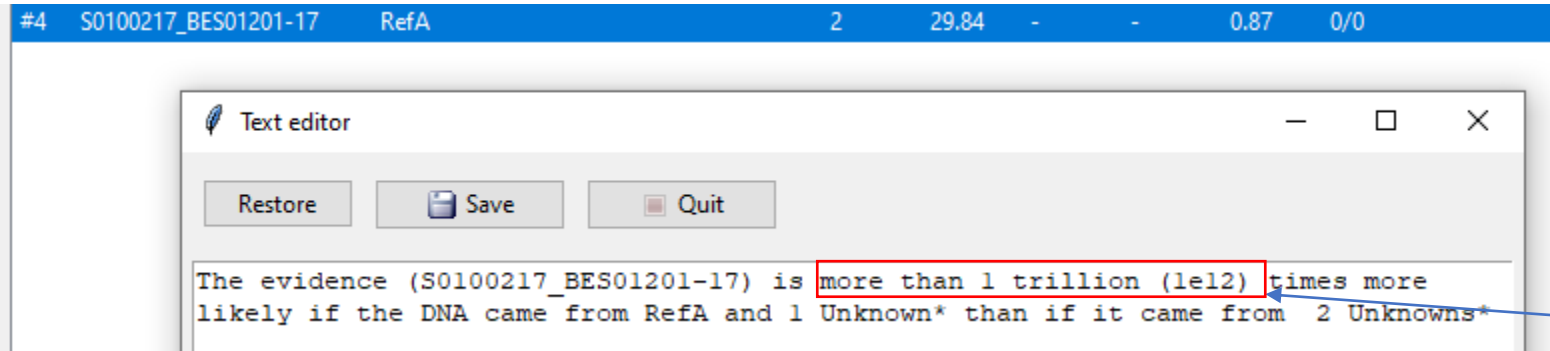
- Added date stamp to title:



Day-Month-Year

Report for Case 2017000001 (16-11-22)

- Verbal statement reporting only up to a specific threshold:



Can be modified  
in language file

264	statementScheme	The evidence (\$evid
265	numword_2	hundred
266	numword_3	thousand
267	numword_6	million
268	numword_9	billion
269	numword_12	trillion
270	numword_more	more than
271	numwordPlural	s

- Now exporting following to EuroForMix: Frequencies, kit, settings