

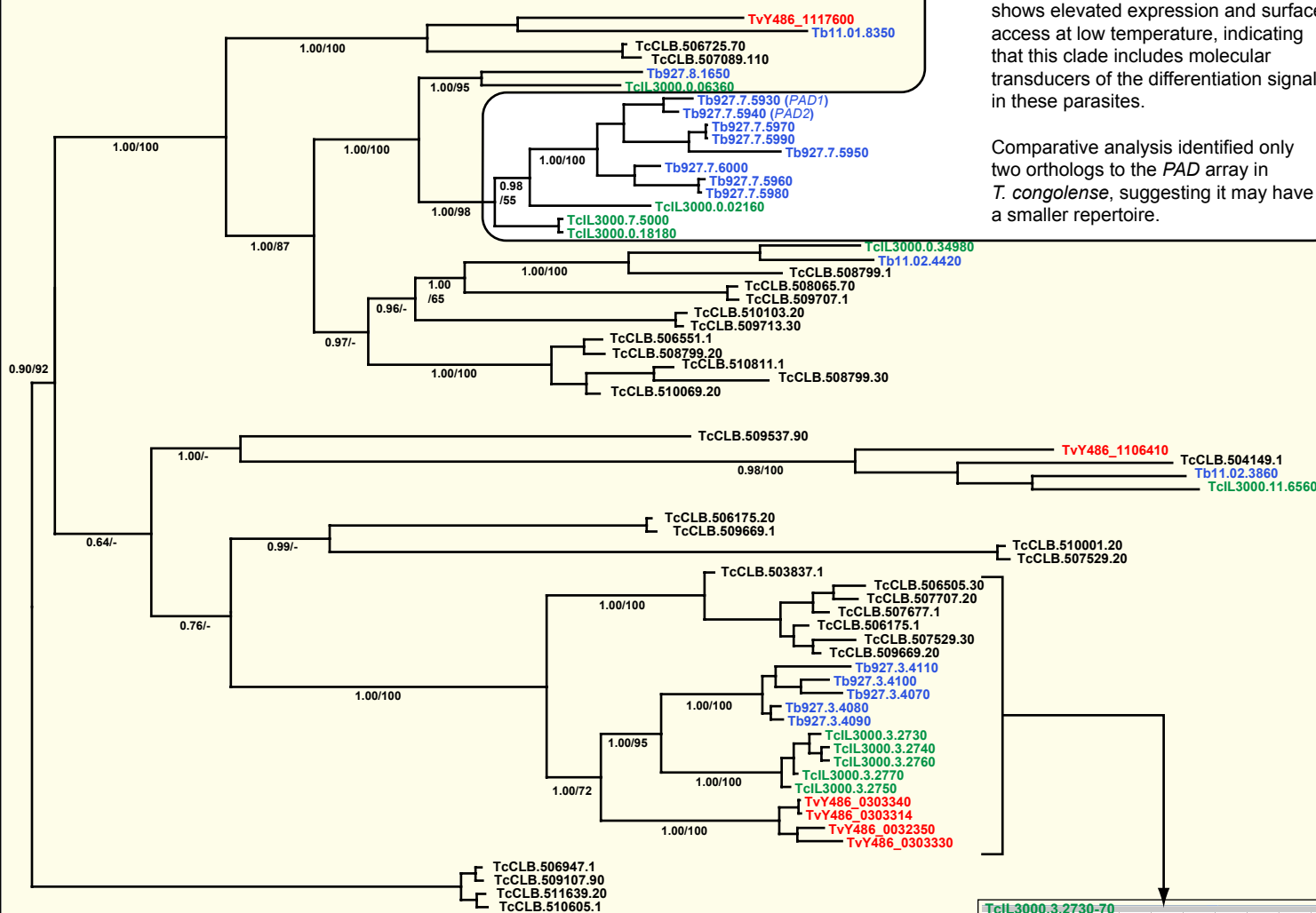
If you use these data, please cite:

Jackson, AP et al. 2012. A cell surface phylome for African Trypanosomes. *Manuscript submitted.*

Fam58: Major facilitator superfamily transporter

! This clade comprises the 'Proteins Associated with Differentiation' (PAD) gene family*. PAD proteins are carboxylate-transporters expressed on the surface of the 'stumpy-form' parasites in the bloodstream, which occur just prior to entry into the insect vector. At least one member (*PAD2*) shows elevated expression and surface access at low temperature, indicating that this clade includes molecular transducers of the differentiation signal in these parasites.

Comparative analysis identified only two orthologs to the *PAD* array in *T. congolense*, suggesting it may have a smaller repertoire.

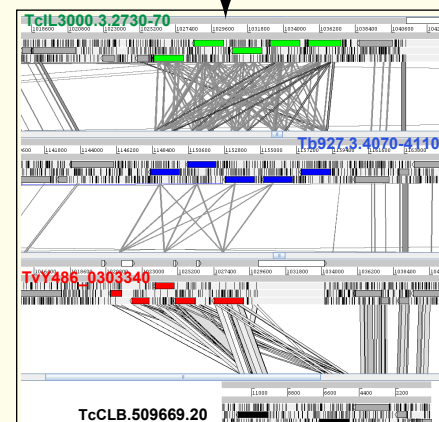


0.1 rep/site

Key: **Tb927.** **TvY486_**
T. brucei *T. vivax*
TcIL3000. **TcCLB.**
T. congolense *T. cruzi*



This family of MFS transporters is found in all species. A tandem gene array on chromosome 3 in *T. brucei* is conserved across all species (*inset showing an ACT comparison in which vertical grey bars represent significant BLASTp matches and Fam58 members are coloured*). *T. brucei* and *T. congolense* share an expansion of gene copies on chromosome 7 (see above), which are tandemly arrayed in *T. brucei* (data lacking for *T. congolense*).



NOTES: Fam58 includes all annotated MFS transporter genes and homologous genes encoding hypothetical proteins.

* Dean *et al.* 2009. *Nature*, **459**: 213-217.

The Bayesian phylogram was estimated from a multiple protein sequence alignment of 777 characters, using MrBayes under default settings. The tree is rooted with an outgroup of divergent *T. cruzi* homologs. Selected nodes are supported by posterior probabilities and non-parametric bootstraps generated from a maximum likelihood analysis using an LG model with rate heterogeneity.