

Supplementary Information

Direct Analysis of Human Hair Before and After Cosmetic Modification Using a Recent Data Fusion Method

Mônica C. Santos^a and Fabíola M. V. Pereira^{,a,b}*

^aInstituto de Química, Universidade Estadual Paulista (Unesp), 14800-060 Araraquara-SP, Brazil

^bDepartment of Chemistry, Idaho State University, 83209 Pocatello, Idaho, USA

*e-mail: fabiola.verbi@unesp.br

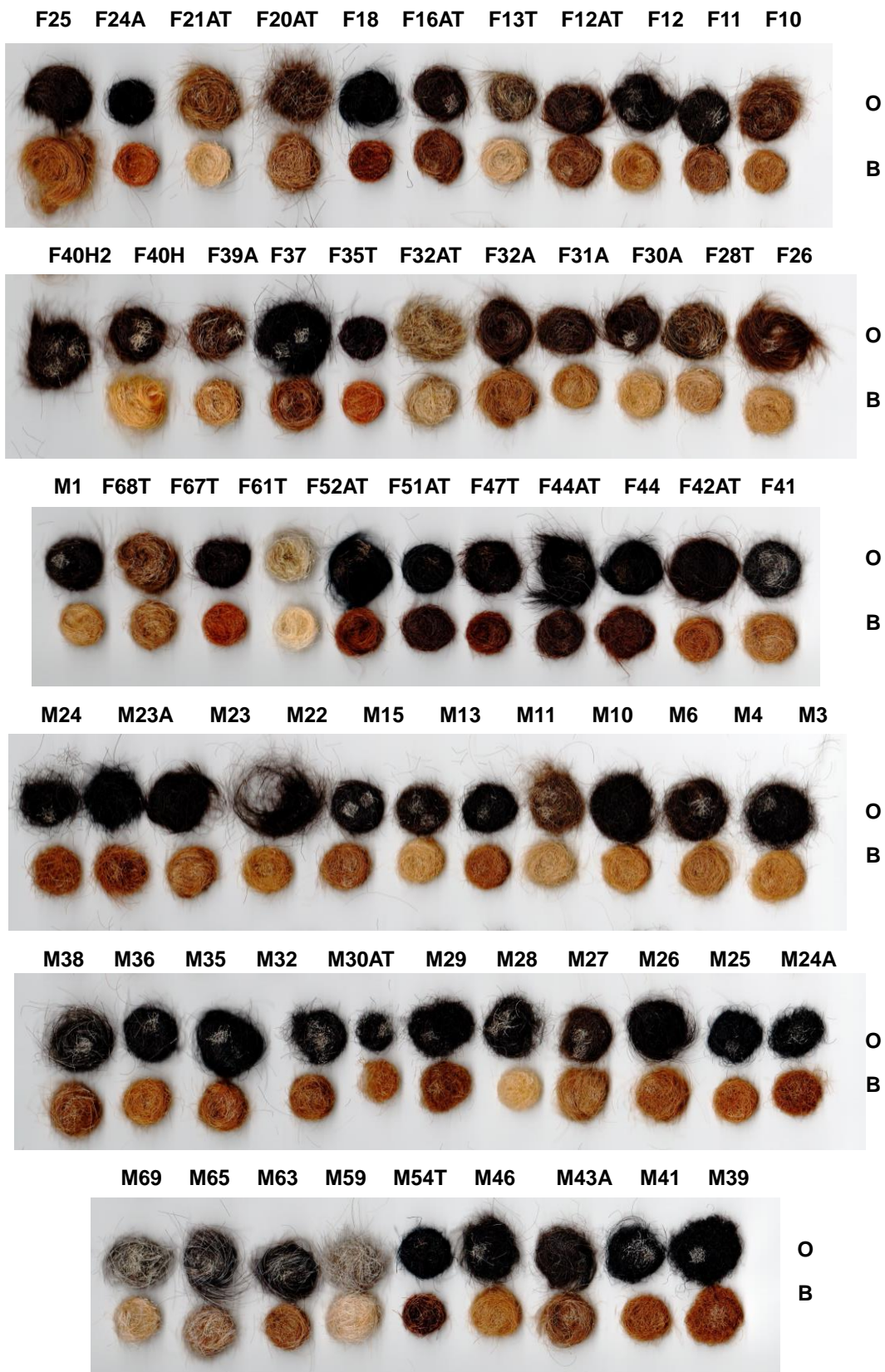


Figure S1. Pellets of hair measured using WDXRF and LIBS. The letter M is for male and F for female, other letters as A (straightening) and T (dyeing) are reference to previous cosmetic treatment and, the numbers are related to the age of donors. O: original; B: bleached.

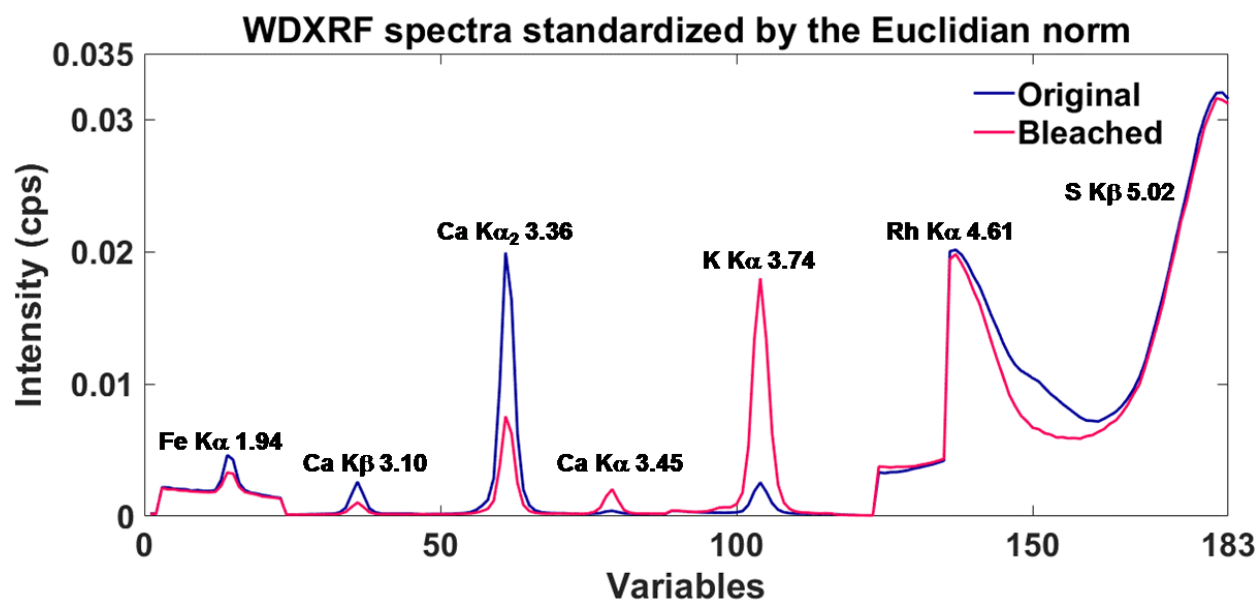


Figure S2. Averaged profiles after the selection of variables of emission lines from the pellets of original (blue line) and bleached (pink line) hair samples obtained using a WDXRF instrument and standardized according to the Euclidian norm.

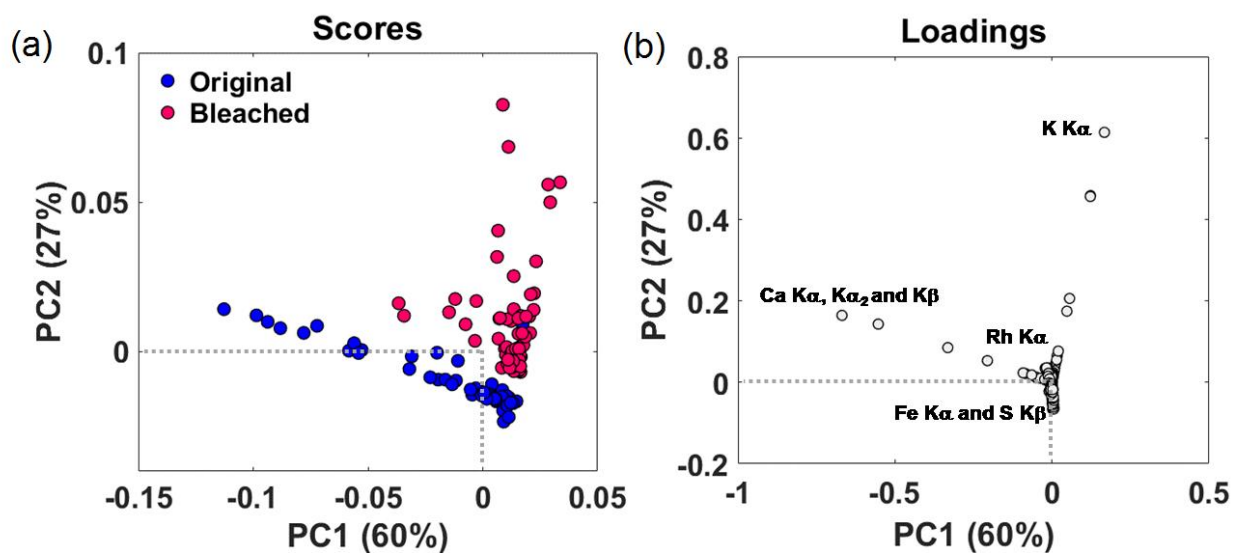


Figure S3. PCA for the WDXRF data standardized according to the Euclidian norm and performed with 183 variables representing (a) scores and (b) loadings for PC1 and PC2.

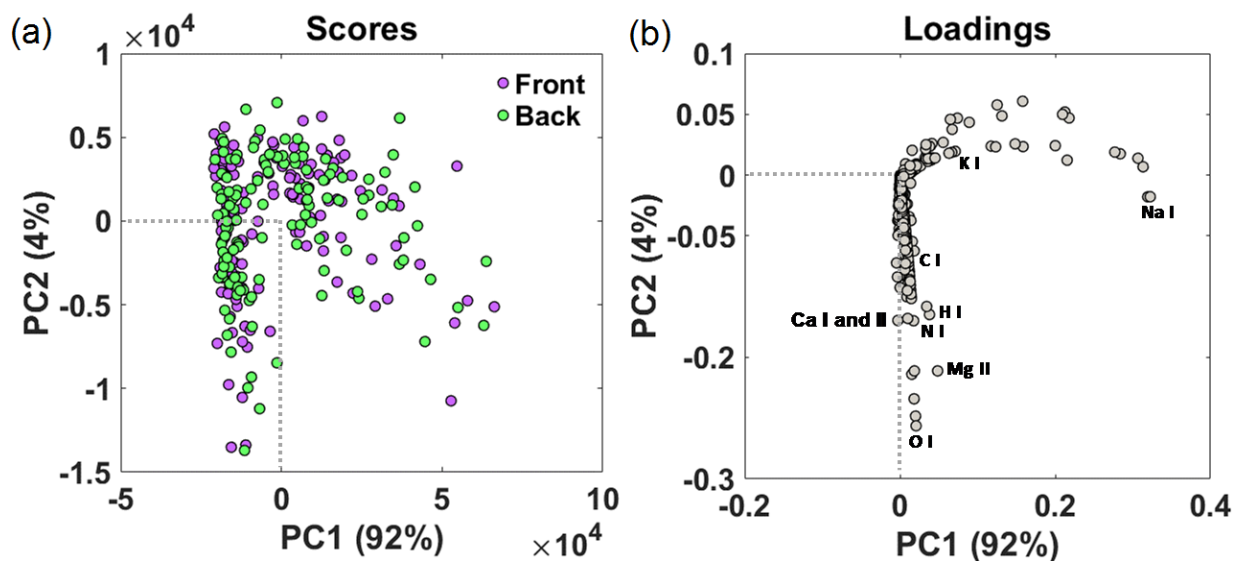


Figure S4. Plots of a PCA for the LIBS data performed with 12,288 variables representing (a) scores and (b) loadings for PC1 and PC2.

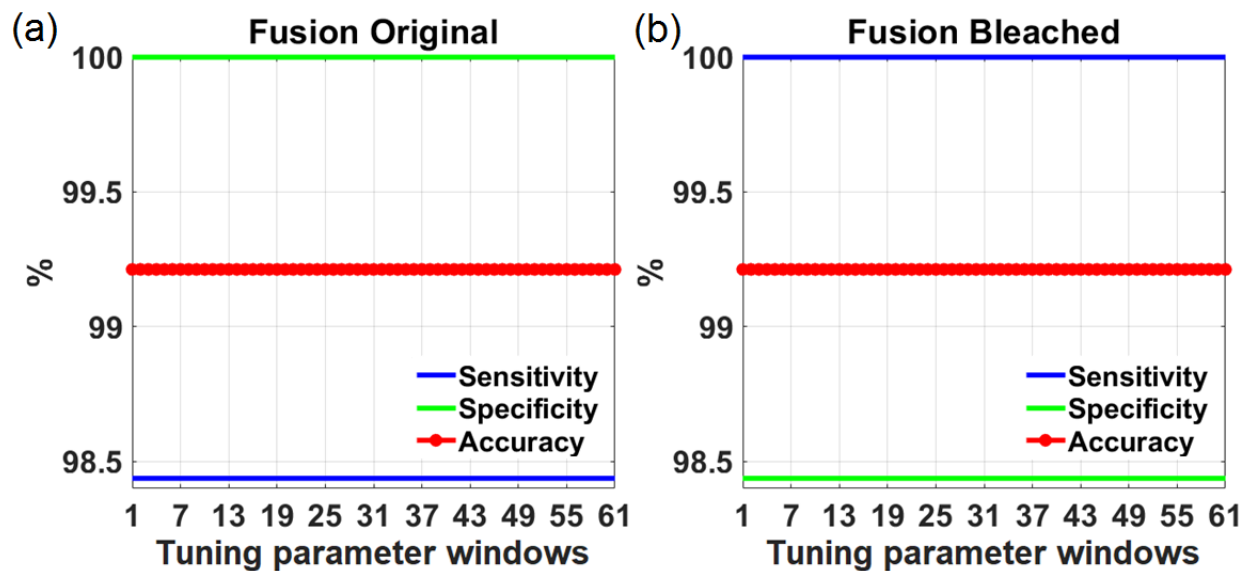


Figure S5. Classification results and fusion of all 17 classifiers using the fusion input matrix from the LIBS data for (a) range 1 and (b) range 2.

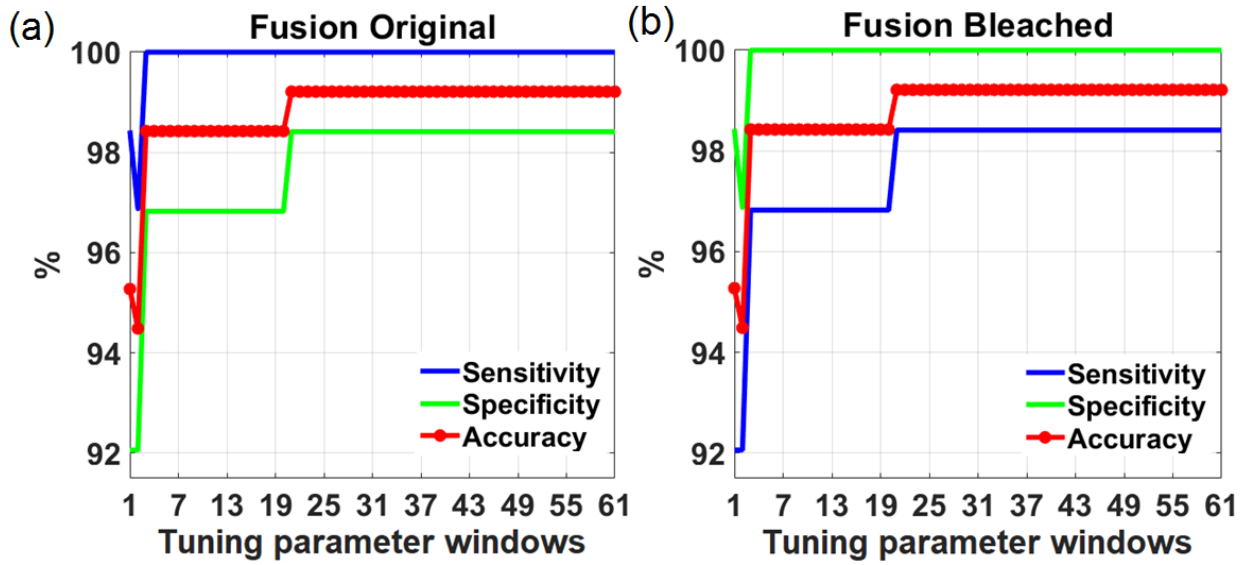


Figure S6. Classification results and fusion of all 17 classifiers using the fusion input matrix from the WDXRF data for (a) range 1 and (b) range 2.