SUPPLEMENTARY MATERIALS

Automated Analysis of Brominated Flame Retardants in Unsaturated Polyester Resins Using Hydrogen-Carrier Gas Chromatography with Flame Ionization Detection and a Micro-Bore Column

Nicola Mucci[1], Lorenzo Venturini [2], Niccolò Fanfani[3], Giovanni Cappelli[4], Ilaria Rapi[5*], Donato Squillaci[6], Jacopo Ceccarelli[7], Antonio Baldassarre[8], Veronica Traversini[9], Stefano Dugheri[10].

[1] Department of Experimental and Clinical Medicine, University of Florence, Florence, 50134, Italy; Division of Occupational Medicine, Careggi University Hospital, Florence, Italy. nicola.mucci@unifi.it
[2] Department of Experimental and Clinical Medicine, University of Florence, Florence, 50134, Italy; lorenzo.venturini@unifi.com
[3] Department of Experimental and Clinical Medicine, University of Florence, Florence, 50134, Italy; niccolo.fanfani@unifi.com
[4] Department of Experimental and Clinical Medicine, University of Florence, Florence, 50134, Italy; Giovanni.cappelli@unifi.com
[5] Department of Experimental and Clinical Medicine, University of Florence, Florence, 50134, Italy; ilaria.rapi@unifi.com
[6] Department of Experimental and Clinical Medicine, University of Florence, Florence, 50134, Italy; donato.squillaci@unifi.com
[7] Intertek Italia S.p.A., Lastra a Signa, 50055, Italy; jacopo.ceccarelli@intertek.com
[8] Department of Experimental and Clinical Medicine, University of Florence, Florence, 50134, Italy; Division of Occupational Medicine, Careggi University Hospital, Florence, Italy. antonio.baldassarre@unifi.com
[9] Department of Experimental and Clinical Medicine, University of Florence, Florence, 50134, Italy; Division of Occupational Medicine, Careggi University Hospital, Florence, Italy. veronica.traversini@unifi.com
[10] Link Campus University, Roma, 00165, Italy; s.dugheri@unilink.it
* Correspondence: ilaria.rapi@unifi.com

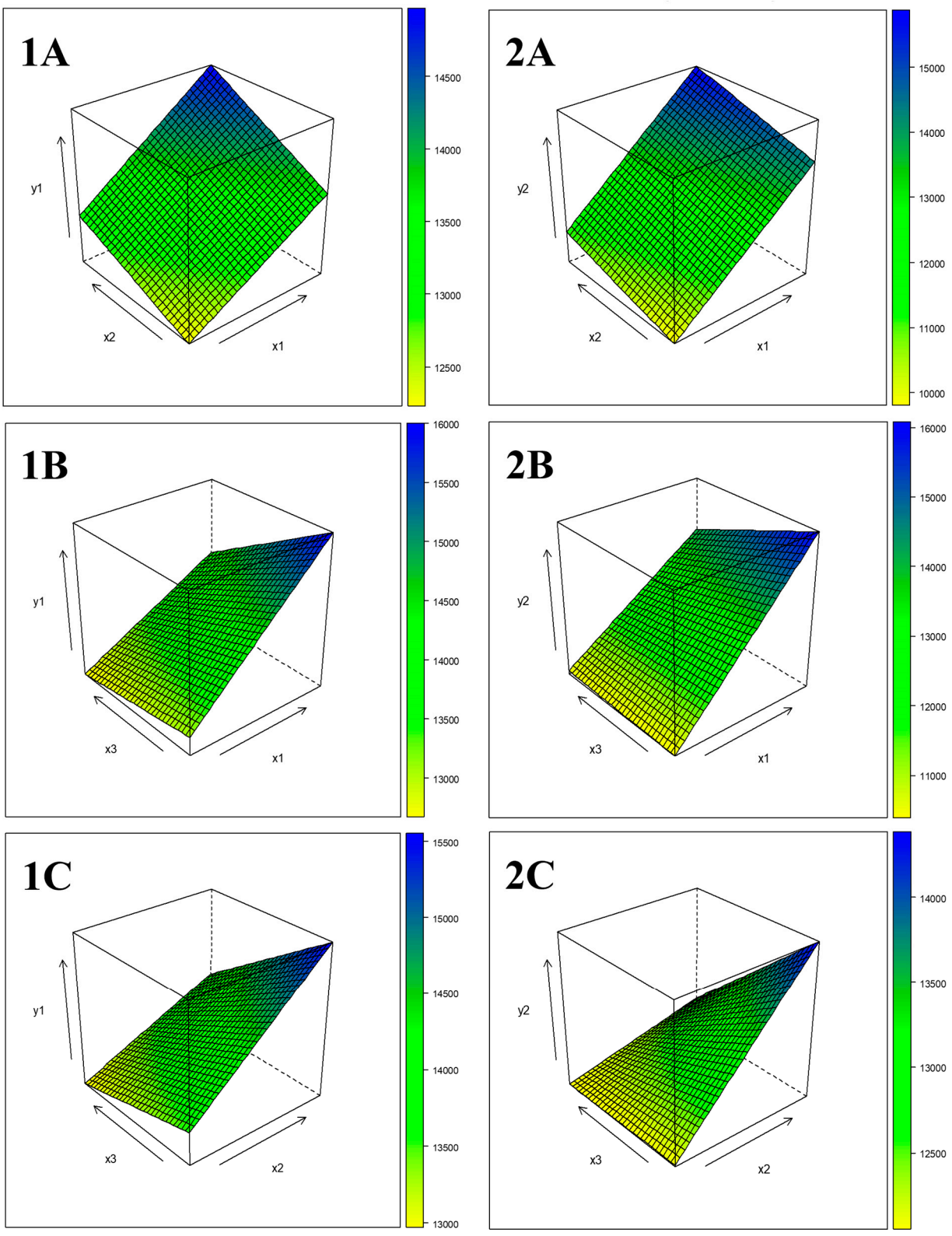


Figure S1. Comparison between the response surfaces obtained for the model describing the peak area of the acetylated DBNPG (panels 1A, 1B and 1C) and for the one describing the peak area of the acetylated TBBPA (panels 2A, 2B and 2C)

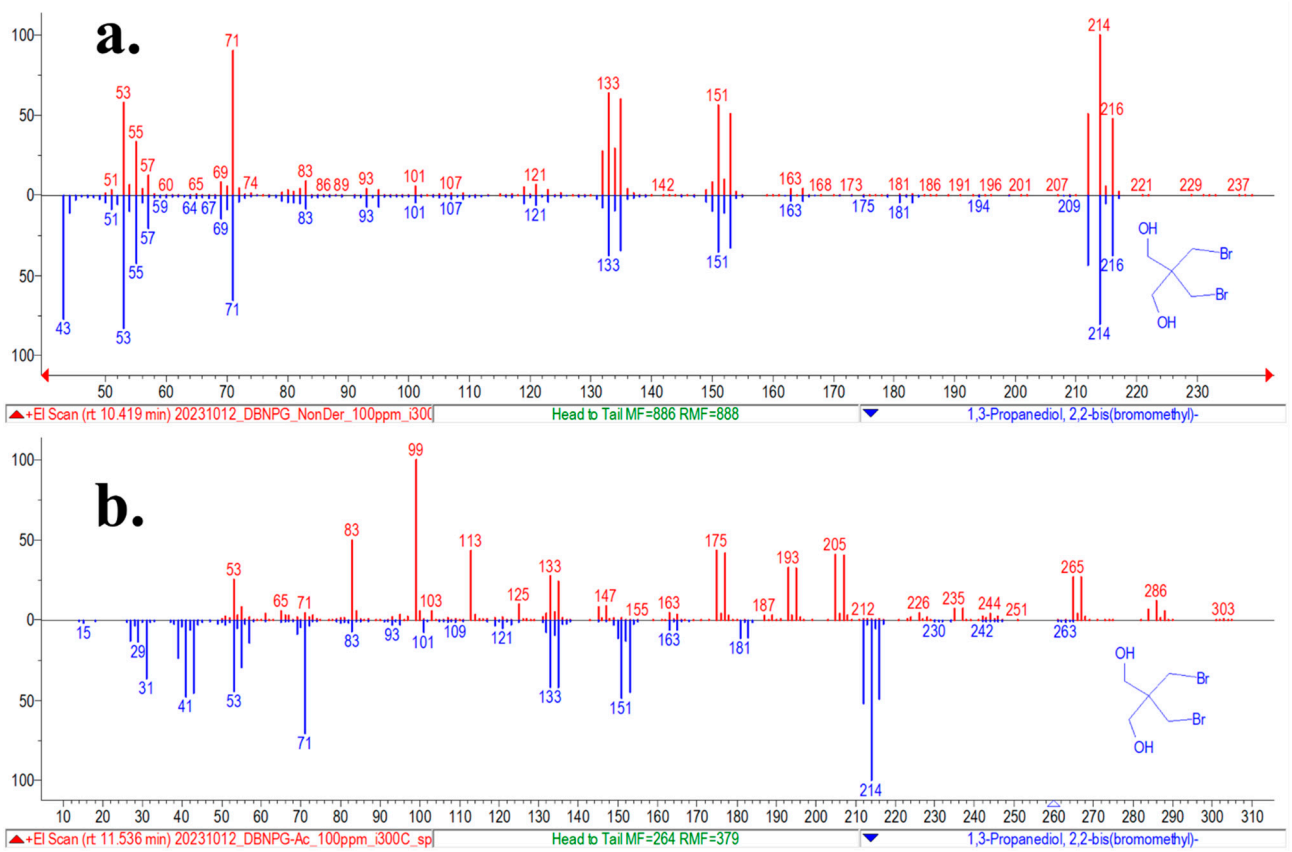


Figure S2. EI Mass spectra of non-derivatized (a) and derivatized (b) DBNPG

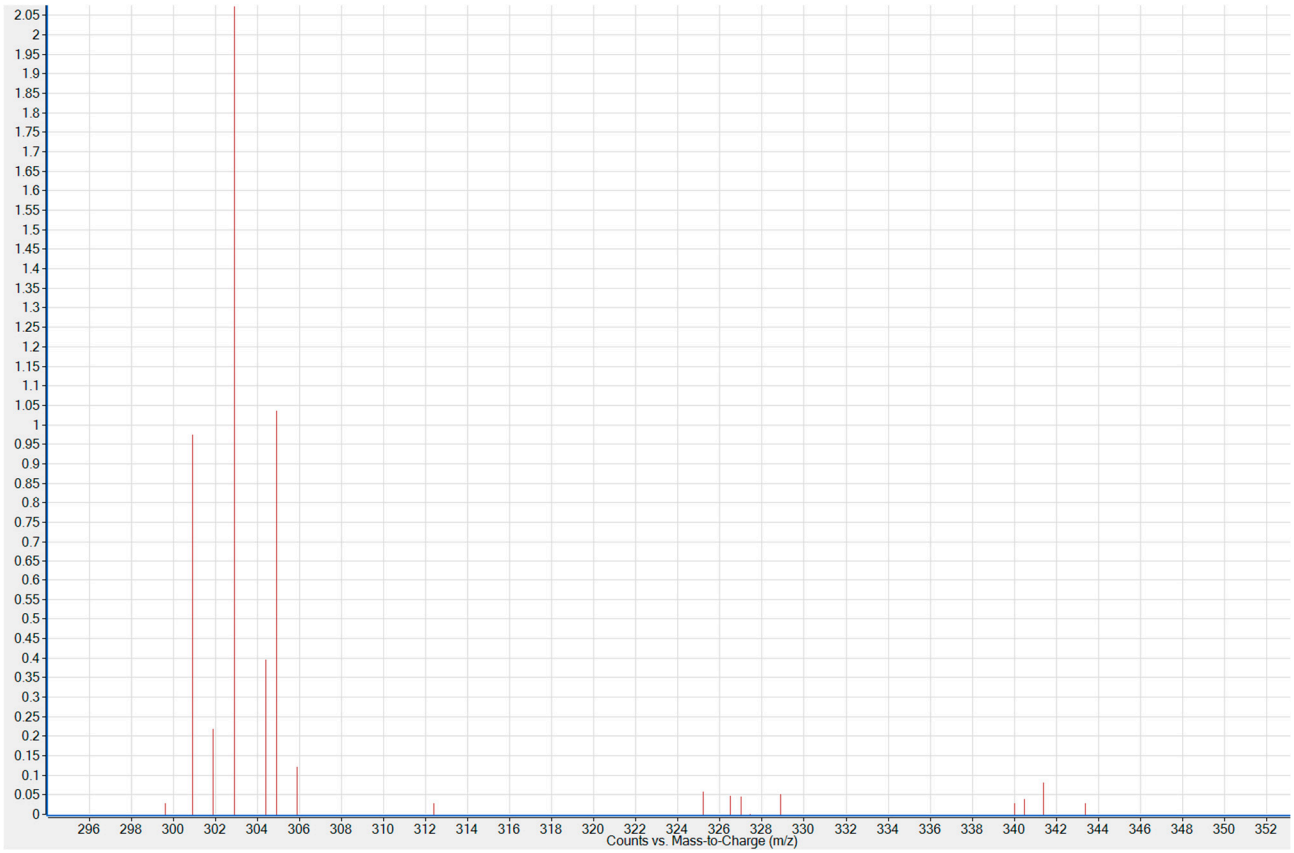


Figure S3. Detail on molecular ion of derivatized DBNPG

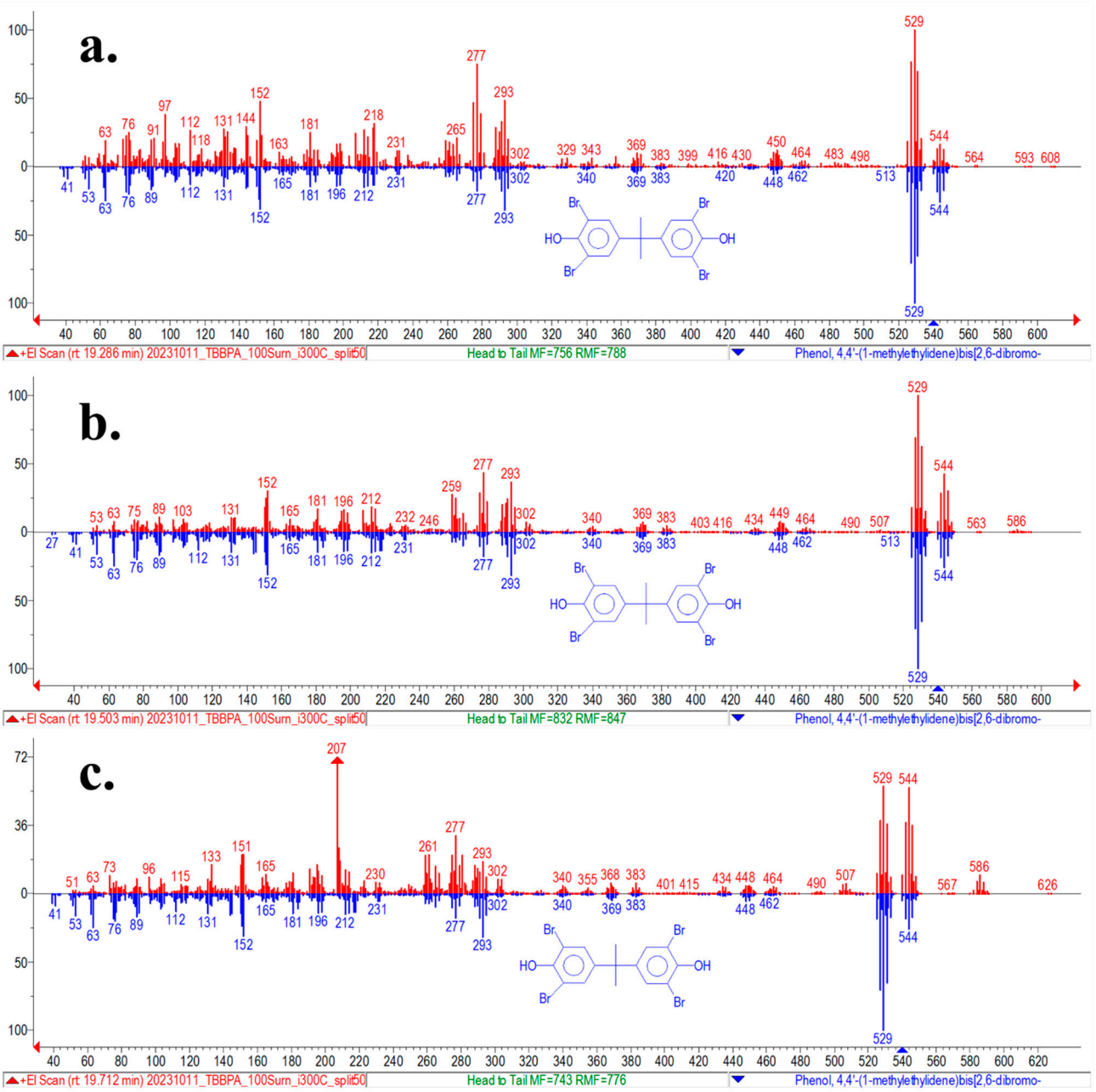


Figure S4. EI Mass spectra of (a) tetrabromobisphenol A (TBBPA), (b) mono-acetylated tetrabromobisphenol A (TBBPA-Ac), (c) bi-acetylated tetrabromobisphenol A (TBBPA-2Ac)

BFR	LOD (µg/mL)	LOQ (µg/mL)	RSD (n=5)		Acc (%)		R^2
			25µg/mL	75µg/mL	25µg/mL	75µg/mL	
DBNPG	1.3	4.2	2.6	4.6	97%	104%	0.998
TBBPA	4.6	15.3	13.5	4.5	134%	110%	0.981

Table S1. Performance evaluation of the method without derivatization on standard mixtures