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ADDITION/CORRECTION

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Label-Free Detection of Drug-Membrane Association Using Ultraviolet−Visible Sum-Frequency Generation [*Journal of the American Chemical Society* **2009**, *131*, 1401–1403. DOI: 10.1021/ja8070607]. Trang T. Nguyen Kelvin Rembert and John C. Conboy*

Upon further experimentation, we have found that tetracaine is photochemically degraded upon prolonged exposure, >10 h, during continual irradiation with UV light at 355 nm during the course of the UV−Vis sum-frequency generation (SFG) experiments. The other drugs studied, ibuprofen, azithromycin, and tolnafate, showed no signs of photochemical degradation under the same conditions. The degradation of tetracaine does alter the measurement of its association to a 1,2-dioleoyl-*sn*-glycero-3-phosphocholine (DOPC) bilayer when using UV−Vis SFG. Therefore, our experiments measuring tetracaine adsorption to a DOPC membrane were repeated with a reduced exposure time of 1.5 h, which was achieved by blocking the laser beams during tetracaine injection and incubation with the membrane. As a result, the association constant K_a, $\sqrt{I_{SFG}^{MAX}}$, and g values in Table 1, the maximum surface excess (Γ^{max}) and LOD in Table 2, the binding curve in Figure 3, and the surface excess curve in Figure 4 for tetracaine should be corrected as shown here.

Page 1403. The discussion about surface excess of the drugs in the second paragraph should be changed: The calculated surface excess (in molecules/cm^2) is plotted as a function of bulk concentration in Figure 4. Although the affinity constants for the drugs are in the order ibuprofen < tetracaince < azithromycin < tolnaftate, the same cannot be said of the saturation concentration of the drugs in the membranes. Azithromycin has the lowest surface saturation ($(1.58 \pm 0.16) \times 10^{10}$ molc/cm^2) while tolnaftate is considerably larger ($(1.00 \pm 0.03) \times 10^{13}$ molc/cm^2). Ibuprofen and tetracaine have similar surface saturation values ($(0.922 - 2.08) \times 10^{12}$ molc/cm^2). The difference in the surface excess of the drugs could be due to a combination of the effects of the binding constant and the repulsive interaction between the drug molecules.

Page 1403. In the fourth paragraph, the lowest calculated LOD should be changed: The lowest calculated LOD is 3.6 ± 0.3 pg/cm^2 for azithromycin.

Supporting Information. The percentage of tetracaine incorporated into the DOPC bilayer at surface saturation should be changed to 1.35%.

A typographical error has been found in the standard deviation of K_a for ibuprofen listed in Table 1. The correct value is given here in the updated Table 1. In addition, the K_a value and its standard deviation for ibuprofen at 100 mM NaCl and 50 mM NaH_2PO_4 listed in Table S3 in the Supporting Information should be $(4.37 \pm 0.33) \times 10^4$.

The authors apologize for these errors.

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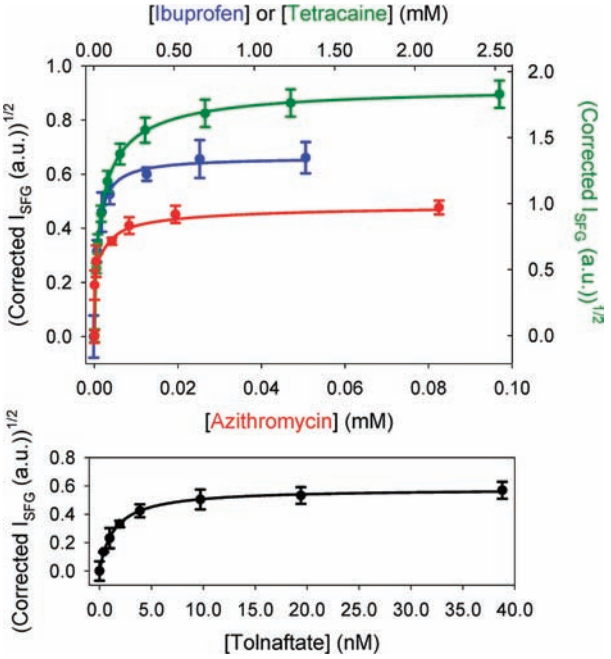

Figure 3. UV−Vis SFG adsorption isotherms for: (top) ibuprofen (blue), azithromycin (red), tetracaine (green, *y*-axis on the right); (bottom) tolnaftate. The solid lines are the fits to the data using the Frumkin isotherm (tetracaine and azithromycin) and Langmuir isotherm (ibuprofen and tolnaftate).

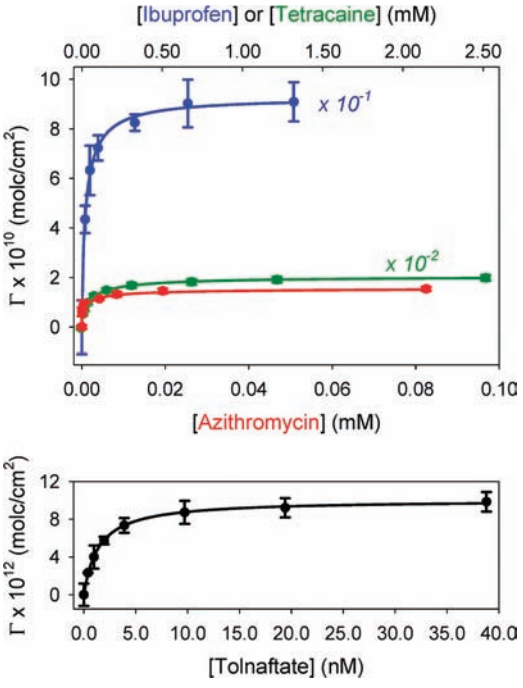

Figure 4. Surface excesses Γ for: (Top) ibuprofen (blue), azithromycin (red), tetracaine (green); (Bottom) tolnaftate. Solid lines are the fits to the data using the Frumkin isotherm (tetracaine and azithromycin) and Langmuir isotherm (ibuprofen and tolnaftate).

Table 1. Measured Equilibrium Association Constant K, $\sqrt{I_{SFG}^{MAX}}$, and g Values for Ibuprofen, Azithromycin, Tetracaine, and Tolnaftate

drug	K_a (M^{-1})	$\sqrt{I_{SFG}^{MAX}}$ (a.u.)	g
ibuprofen	$(4.37 \pm 0.33) \times 10^4$	0.67 ± 0.01	
tetracaine	$(5.14 \pm 0.01) \times 10^4$	1.88 ± 0.01	-1.51 ± 0.06
azithromycin	$(1.25 \pm 0.09) \times 10^8$	0.49 ± 0.05	-6.51 ± 2.19
tolnaftate	$(7.00 \pm 0.26) \times 10^8$	0.58 ± 0.02	

Table 2. Partition Constants, Normalized Surface Densities, and Limits of Detection (LOD) for the Drugs Studied

drug	P_i	Γ^{max} (molc/cm^2)	LOD (pg/cm^2)
ibuprofen	64.6	$(9.22 \pm 0.14) \times 10^{11}$	46.9 ± 4.7
tetracaine	128.8	$(2.08 \pm 0.01) \times 10^{12}$	116.7 ± 10.9
azithromycin	131.8[a]	$(1.58 \pm 0.16) \times 10^{10}$	3.6 ± 0.3
tolnaftate	147 910.8[a]	$(1.00 \pm 0.03) \times 10^{13}$	1306.8 ± 52.8

[a] See SI.

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