



UNIVERSITY OF LEEDS

This is a repository copy of *Calcium Alters the Interfacial Organization of Hydrolyzed Lipids during Intestinal Digestion*.

White Rose Research Online URL for this paper:
<http://eprints.whiterose.ac.uk/132081/>

Version: Supplemental Material

Article:

Torcello-Gómez, MA, Boudard, C and Mackie, AR orcid.org/0000-0002-5681-0593 (2018)
Calcium Alters the Interfacial Organization of Hydrolyzed Lipids during Intestinal Digestion.
Langmuir, 34 (25). pp. 7536-7544. ISSN 0743-7463

<https://doi.org/10.1021/acs.langmuir.8b00841>

(c) 2018 American Chemical Society, This is an author produced version of a paper published in Langmuir. Uploaded in accordance with the publisher's self-archiving policy.

Reuse

Items deposited in White Rose Research Online are protected by copyright, with all rights reserved unless indicated otherwise. They may be downloaded and/or printed for private study, or other acts as permitted by national copyright laws. The publisher or other rights holders may allow further reproduction and re-use of the full text version. This is indicated by the licence information on the White Rose Research Online record for the item.

Takedown

If you consider content in White Rose Research Online to be in breach of UK law, please notify us by emailing eprints@whiterose.ac.uk including the URL of the record and the reason for the withdrawal request.



eprints@whiterose.ac.uk
<https://eprints.whiterose.ac.uk/>

SUPPORTING INFORMATION

CALCIUM ALTERS THE INTERFACIAL ORGANISATION OF HYDROLYSED LIPIDS DURING INTESTINAL DIGESTION

Amelia Torcello-Gómez^{a,*}, Chloé Boudard^{a,b} and Alan R. Mackie^a

^aSchool of Food Science and Nutrition, University of Leeds, Leeds, LS2 9JT, United Kingdom.

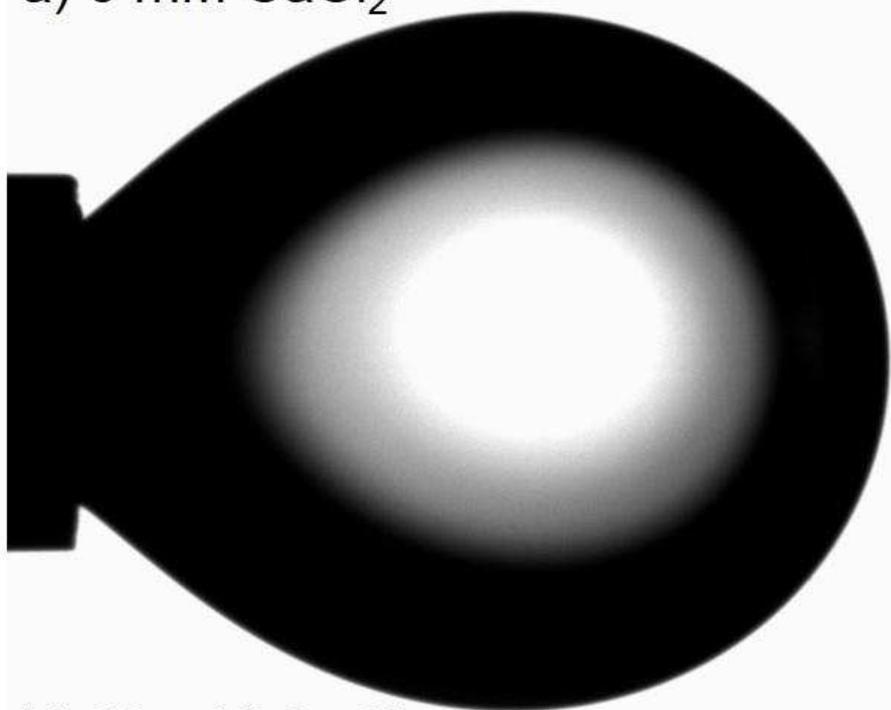
^bLycée Agro-Viticole de Bordeaux-Blanquefort, 33290 Blanquefort, France.

*Corresponding author: M.A.TorcelloGomez@leeds.ac.uk (A. Torcello-Gómez)

TABLE OF CONTENTS:

- Images of calcium soaps formed at the oil droplet surface during lipolysis in the absence and presence of bile salt.
- Interfacial tension and dilatational modulus results:
 - Effect of calcium on adsorption of inactive lipase and/or bile salt.
 - Effect of lipase concentration on calcium soap formation.

a) 0 mM CaCl_2



b) 20 mM CaCl_2

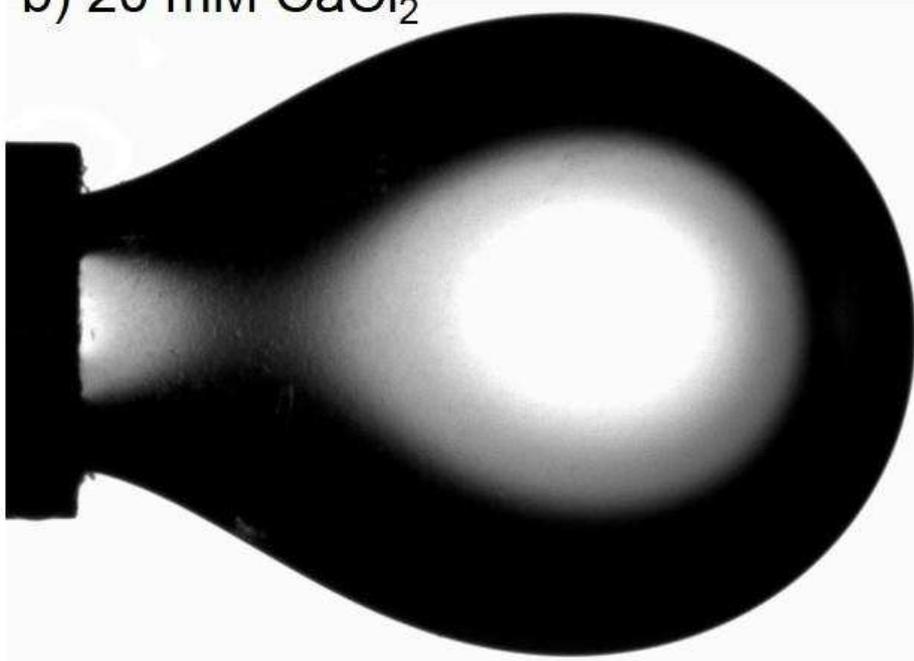


Figure S1: Purified sunflower oil droplets formed at the tip of the capillary immersed in 1 mg/mL active lipase aqueous solution (2 mM BIS-TRIS, 150 mM NaCl, pH 7, 37 °C) in the absence a) or presence of CaCl_2 b).

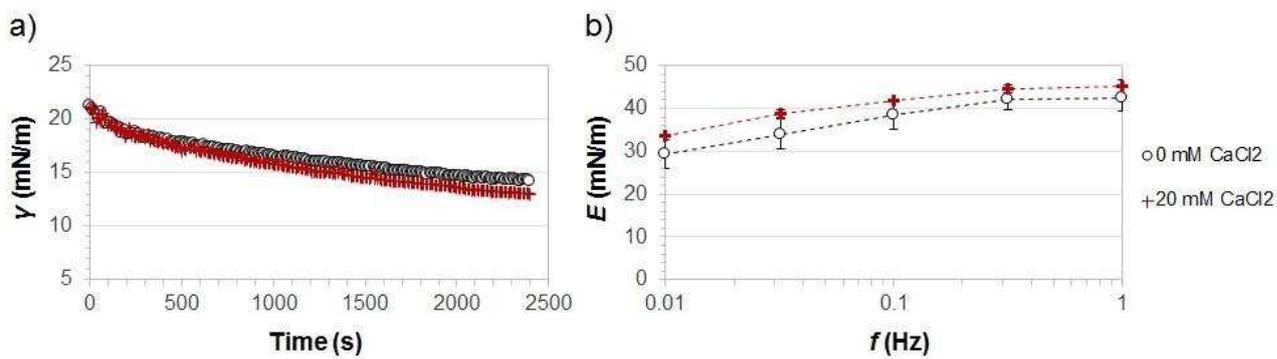


Figure S2: a) Interfacial tension versus time and b) dilatational modulus versus frequency after 40 min of interfacial layer formation, for inactive lipase (1 mg/mL) aqueous solutions (2 mM BIS-TRIS, 150 mM NaCl, pH 7, 37 °C) containing different CaCl₂ concentrations (0 and 20 mM). Lines in b) are a guide for the eye.

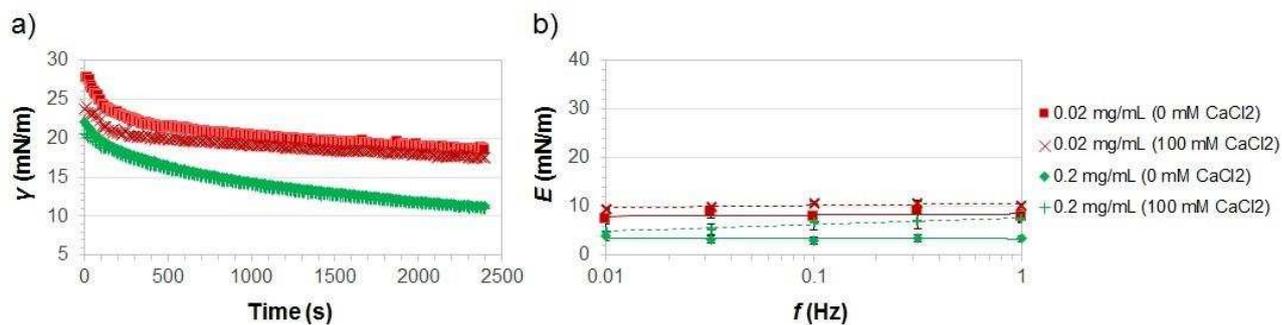


Figure S3: a) Interfacial tension versus time and b) dilatational modulus versus frequency after 40 min of interfacial layer formation, for active lipase aqueous solutions (2 mM BIS-TRIS, 150 mM NaCl, pH 7, 37 °C) at different bulk concentrations (0.02 and 0.2 mg/mL) containing different CaCl₂ concentrations (0 and 100 mM). Lines in b) are a guide for the eye.

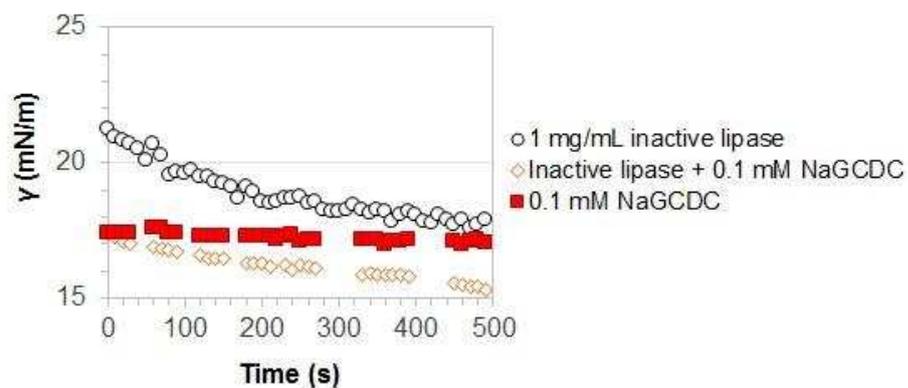


Figure S4: Insert from Figure 6b. Interfacial tension versus time for 1 mg/mL inactive lipase (open symbols) aqueous solutions (2 mM BIS-TRIS, 150 mM NaCl, pH 7, 37 °C) in the absence and presence of 0.1 mM NaGCDC). The curve corresponding to 0.1 mM NaGCDC alone (closed squares) is also included as a reference.

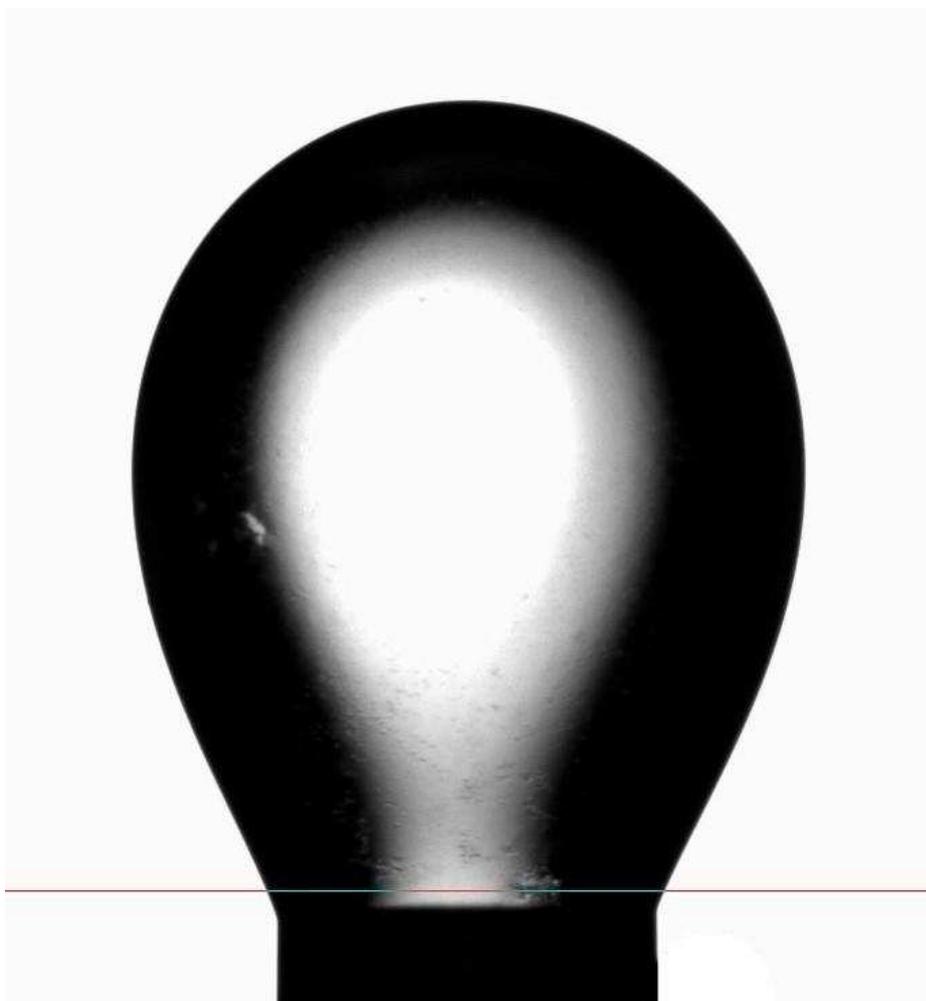


Figure S5: Purified sunflower oil droplet formed at the tip of the capillary immersed in 1 mg/mL active lipase aqueous solution (2 mM BIS-TRIS, 150 mM NaCl, pH 7, 37 °C) in the presence of 0.1 mM NaGDC and 10 mM CaCl₂.

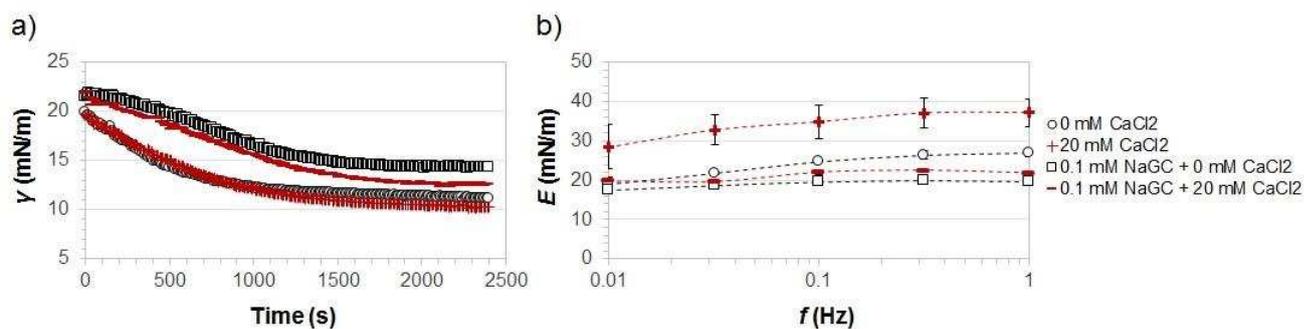


Figure S6: a) Interfacial tension versus time and b) dilatational modulus versus frequency after 40 min of interfacial layer formation, for inactive lipase (1 mg/mL) + 0.1 mM NaGC aqueous solutions (2 mM BIS-TRIS, 150 mM NaCl, pH 7, 37 °C) containing different CaCl_2 concentrations (0 and 20 mM). The curves of pure NaGC are also included. Lines in b) are a guide for the eye.