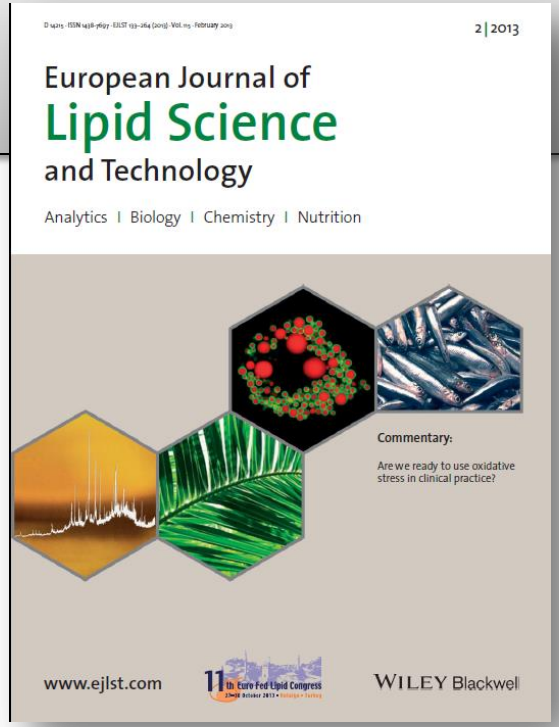


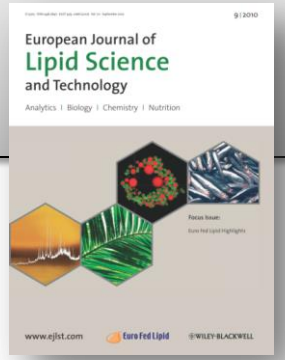
Euro Fed Lipid Board Meeting

European Journal of Lipid Science and Technology
Lipid Technology

-short report from the Editorial Office-

Frankfurt, Germany
March 2014

EJLST Editors – two new in 2014



Uwe T. Bornscheuer,
Greifswald,
Germany

Ronald Pegg,
Athens, GA,
USA

Charlotte
Jacobsen,
Lyngby,
Denmark

Ryszard Amarovicz,
Olsztyn,
Poland

Emma De Fabiani,
Milano,
Italy

Eckhard Flöter,
Berlin,
Germany

Anna Nicolaou,
Bradford,
UK

Susan E. Carlson,
Kansas City,
USA

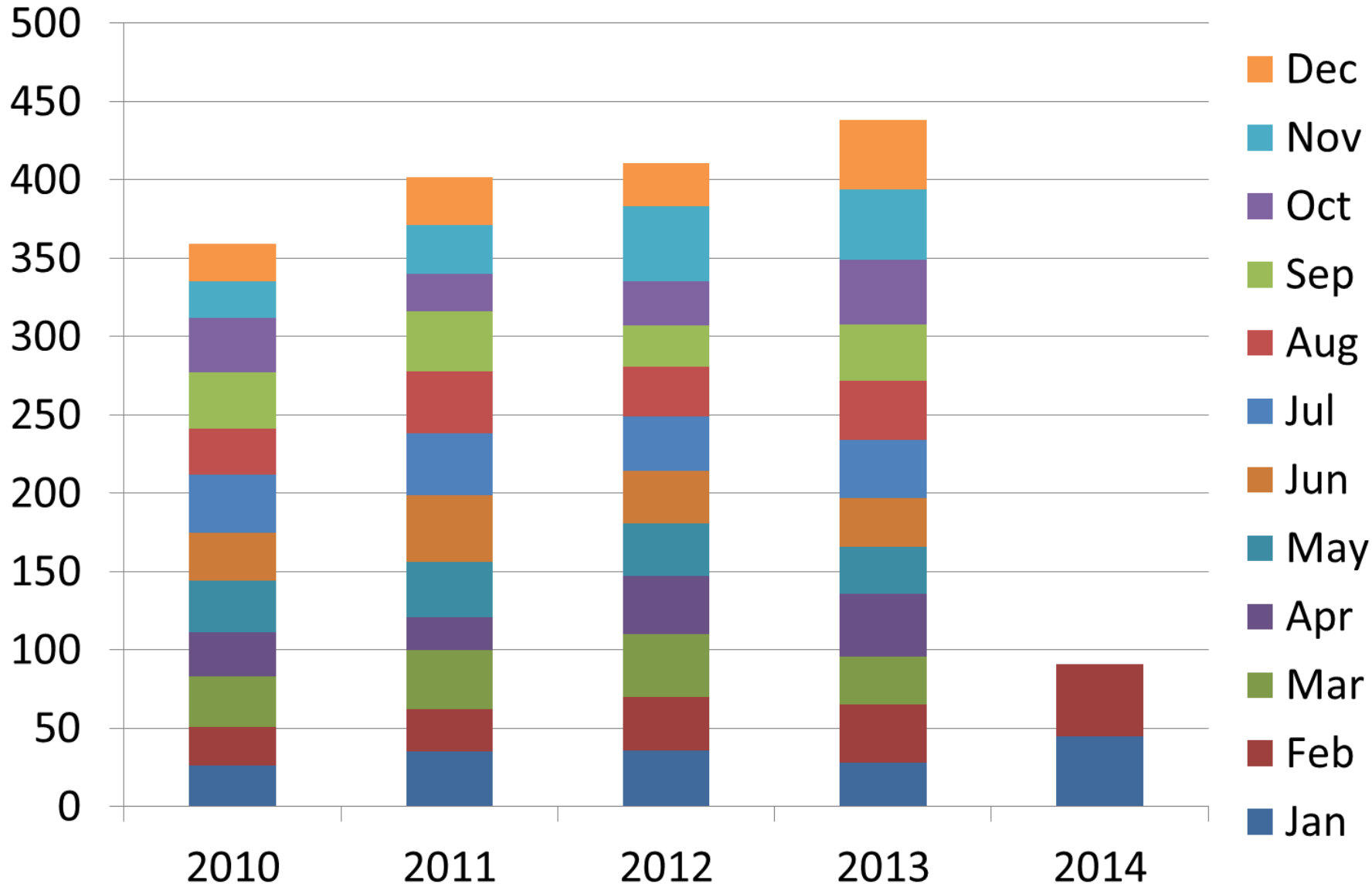
Michael Meier,
Karlsruhe,
Germany

Jean-Michel Chardigny,
Clermont-Ferrand,
France

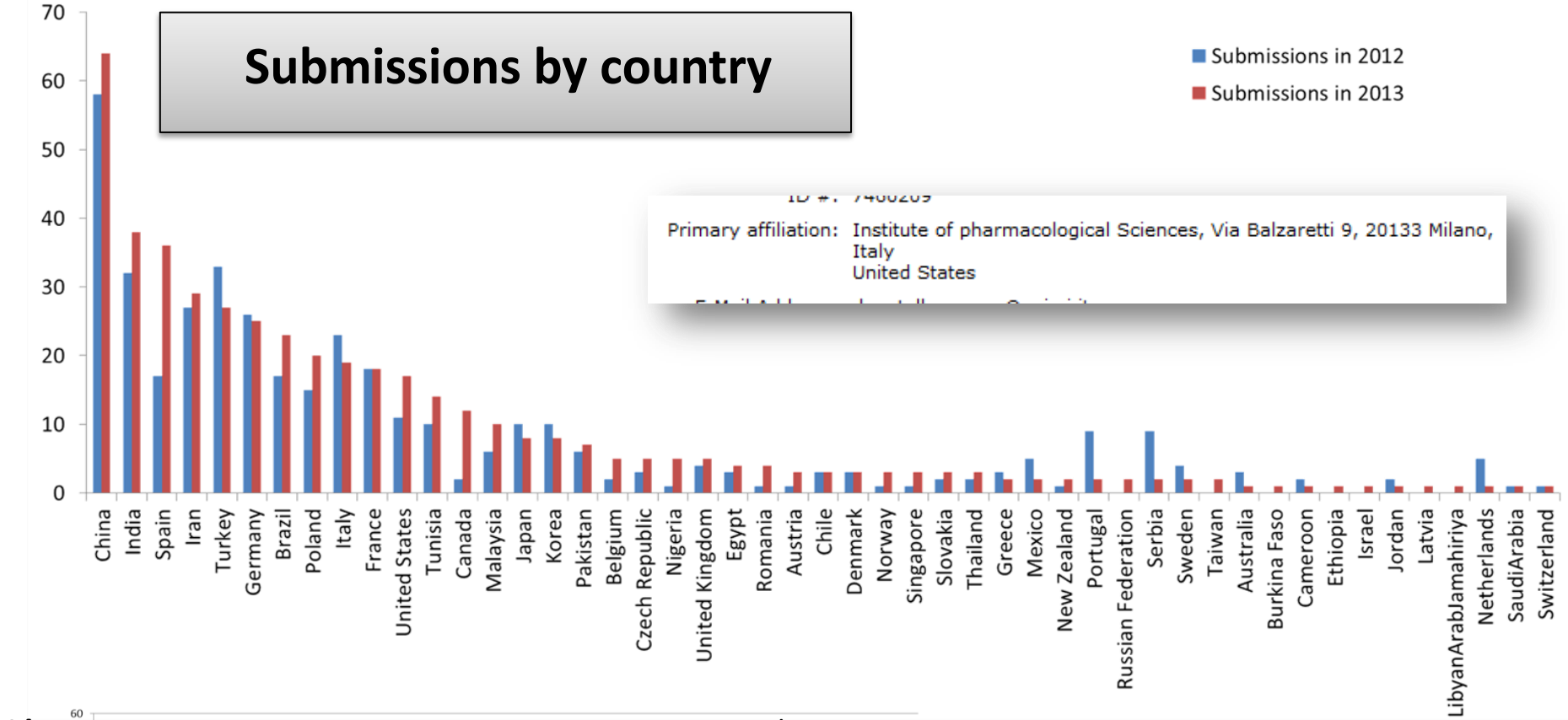
Maria Tsimidou,
Thessaloniki,
Greece

Bertrand Matthäus,
Detmold,
Germany

Submissions 2010-2014: Publish more!



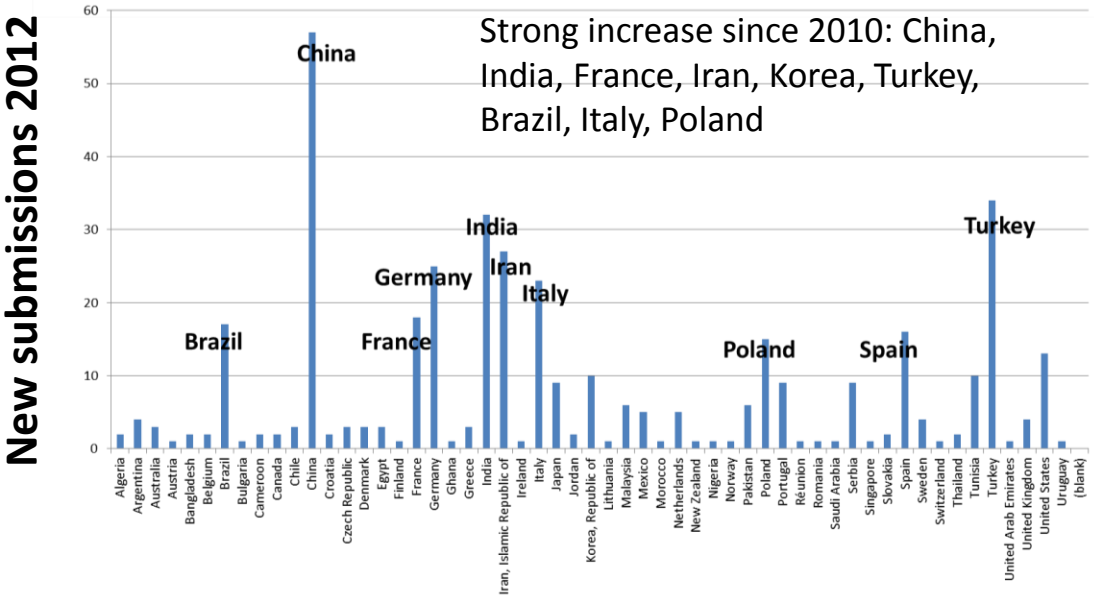
Submissions by country



ID #: 7466269

Primary affiliation: Institute of pharmacological Sciences, Via Balzaretti 9, 20133 Milano, Italy
United States

New submissions 2012

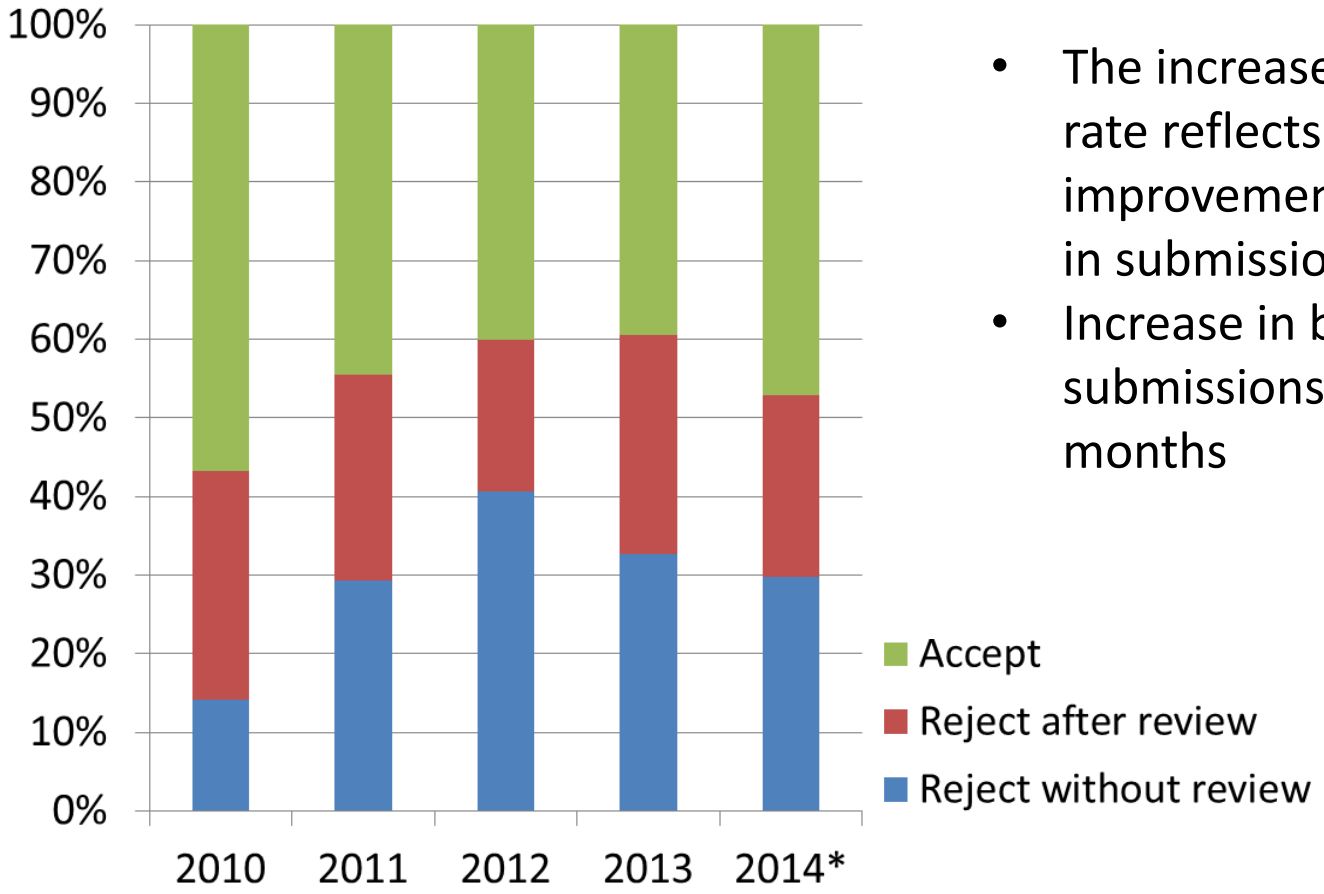


Strong increase since 2010: China, India, France, Iran, Korea, Turkey, Brazil, Italy, Poland

2013 vs 2012: Submissions from countries which showed strong increase between 2010 and 2012 still among top submitting countries. Submissions from Spain continue to increase.

Newly strong submissions also from Canada (and US?).

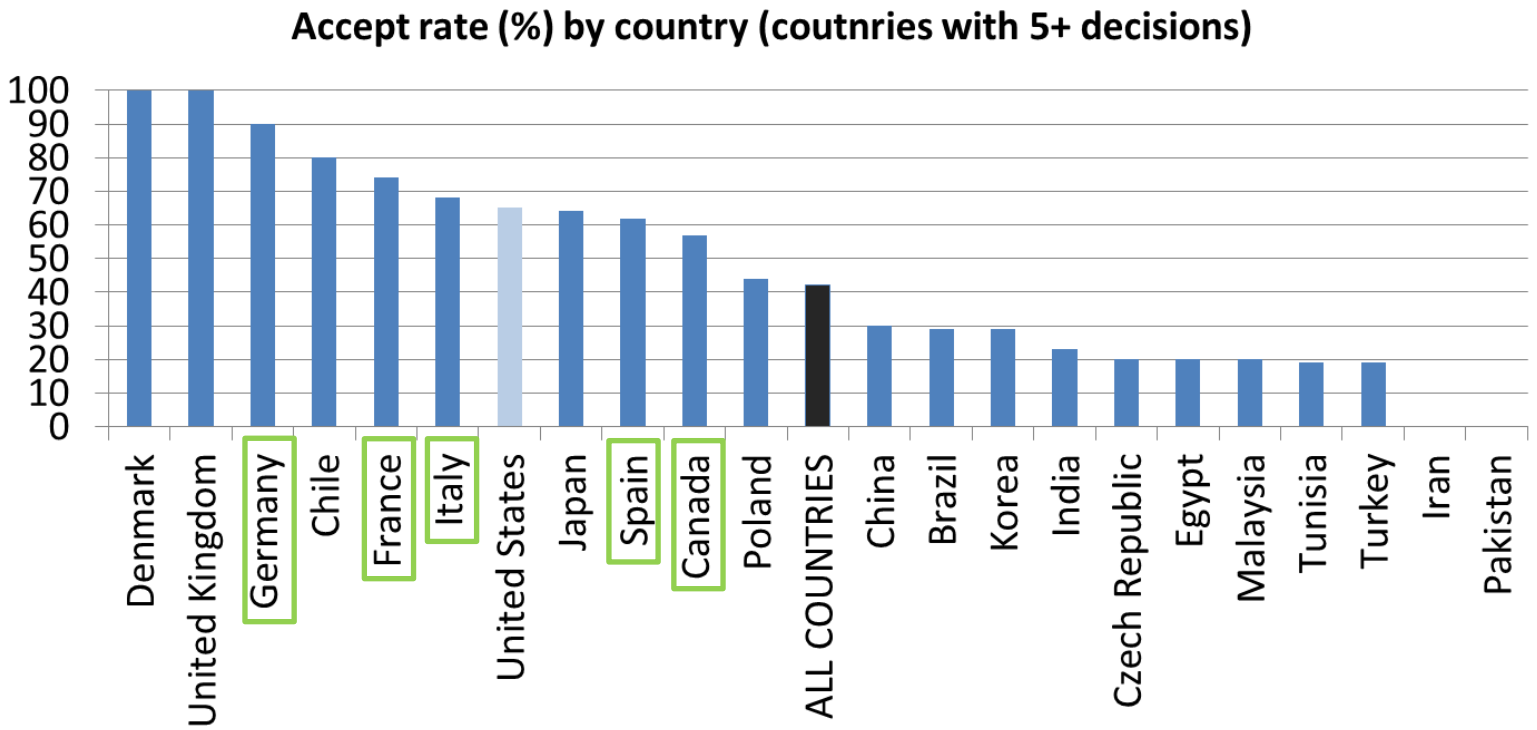
Final decisions 2010-2014*: Publish more!



- The increased accept rate reflects the improvement of quality in submissions
- Increase in biomedical submissions in the last 3 months

*Mar 17, 2014

Acceptance by country 2013



>10 submissions and >50% accept rate (in 2013)

*Mar 17, 2014

Impact Factor

Impact Factor development:

IF 2010 = 1.487
IF 2011 = 1.733
IF 2012 = 2.266

	2011 vs 2010	2012 vs 2011	2013f vs 2012	2013f vs 2011
EJLST	↑ 17%	↑ 31%	↓ -12%	↑ 15%
JAOCS	→ 12%	↓ -10%	↓ -5%	↓ -15%
Lipids	→ -1%	↑ 20%	↓ -12%	→ 6%
Lipids in Health and Disease	→ -3%	↓ -7%	→ 1%	↓ -7%
Journal of Lipid Research	↓ -9%	↓ -21%	→ 5%	↓ -17%
Chemistry and Physics of Lipids	↓ -10%	↓ -16%	↑ 18%	→ -1%
Journal of Oleo Science	↑ 30%	↓ -12%	↓ -4%	↓ -16%

Forecast for 2013:

Currently in the public database Web of Science we have 669 citations listed in 2013 to our 337 sources published in 2011-2012.

Current **forecast** for IF 2013 is: **1.985.** The forecast has so far been always an underestimation (closest forecast was about 2.2% under the final value)

(Current forecast for the competitor JAOCS: 1.514)

Recent and planned Special Issues

April 2013

Biocatalysis in lipid modification

Based on the Greifswald meeting held in September 2012

Ed. Pierre Villeneuve

September 2013 (part 1/2)

December 2013 (part 2/2)

Novel sources of omega-3s for food and feed

Based on the Copenhagen meeting held in November 2012

Ed. Charlotte Jacobsen, Ingrid Undeland, Bente Torstensson and Jana Pickova

November 2013

EuroFedLipid Highlights 2013

Highlights of the Antalya Congress

Ed. Ed. Office & Uwe Bornscheuer

January 2014

Fats and oils as renewable feedstock for the chemical industry

Ed. Jürgen Metzger, Mike Meier

June 2014

Deep frying

Ed. Bertand Matthäus, Christian Gertz, Felix Aladedunye

Autumn 2014

Phospholipids in pharmaceutics

Based on the International Symposium on Phospholipids in Pharmaceutical Research, Heidelberg, September 2013

Ed. Peter van Hoogevest

October 2014

EuroFedLipid Highlights 2013

Papers covering the plenary and keynote lectures

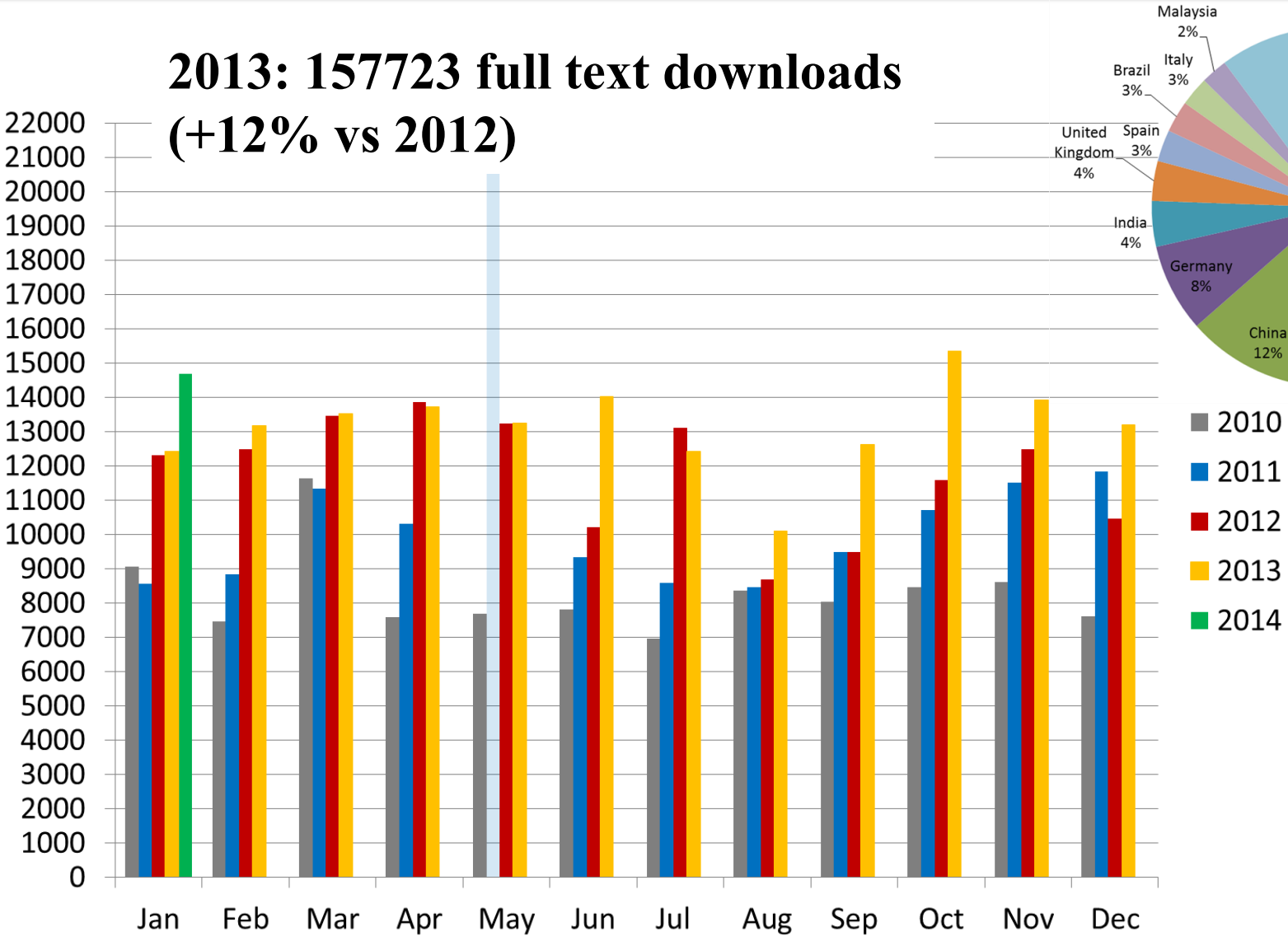
Ed. Ed. Office & Uwe Bornscheuer

2015

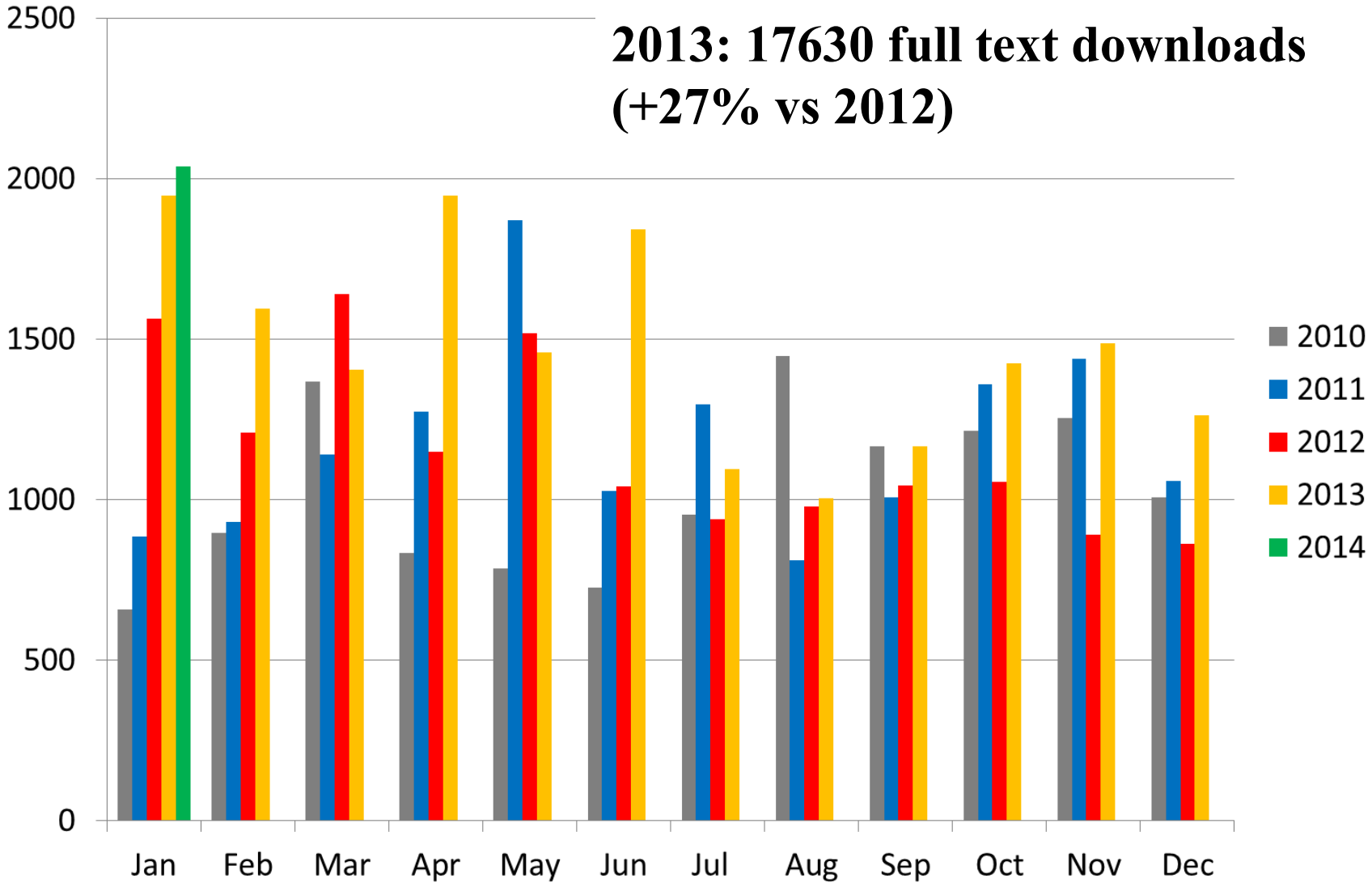
Undesirable compounds in oils

Ed. Bertrand Matthäus

EJLST full text downloads - development



LiTe full text downloads - development

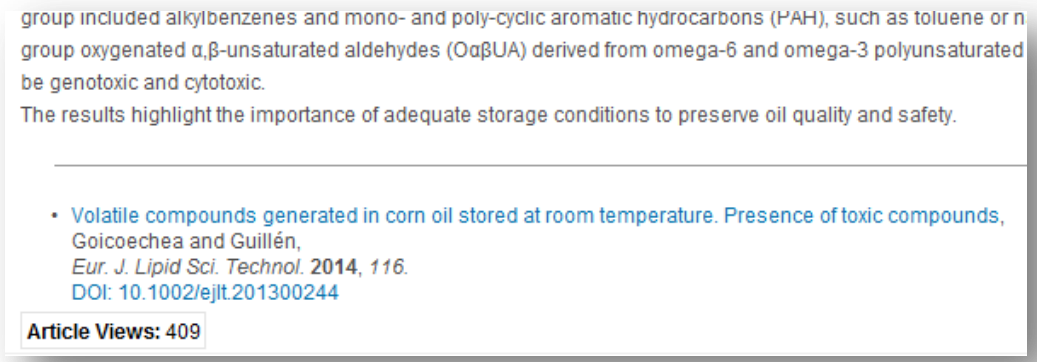


Lipid Technology developments

- Frank Gunstone retired Jan 2014
- Currently edited by Michael Eskin (U Manitoba), Peter Clough (Cobden Research), and Gary List (GR List Consulting)
- Introduced Early View in 2014
- Introduced HTML (thus also Anywhere Article aka Enhanced HTML available now)
- Expanding the scope to cover areas “beyond lipids” (eg Resveratrol in January)

Marketing and promotion

- AOCS – printed copies
- Promoting articles in Pharma & Medicinal Chemistry and Pharmacology, Food science, Biochemistry, and other **e-Newsletters**
- E-campaigns to promote **OnlineOpen**
- Featuring articles on general subject Facebook sites such as Wiley food science
- Highlighting articles at our partnering portals


group included alkylbenzenes and mono- and poly-cyclic aromatic hydrocarbons (PAH), such as toluene or n
group oxygenated α,β-unsaturated aldehydes (OαβUA) derived from omega-6 and omega-3 polyunsaturated
be genotoxic and cytotoxic.
The results highlight the importance of adequate storage conditions to preserve oil quality and safety.

- Volatile compounds generated in corn oil stored at room temperature. Presence of toxic compounds, Goicoechea and Guillén, *Eur. J. Lipid Sci. Technol.* **2014**, *116*. DOI: 10.1002/ejlt.201300244

Article Views: 409

ChemistryViews

www.chemistryviews.org

Current trends and future plans

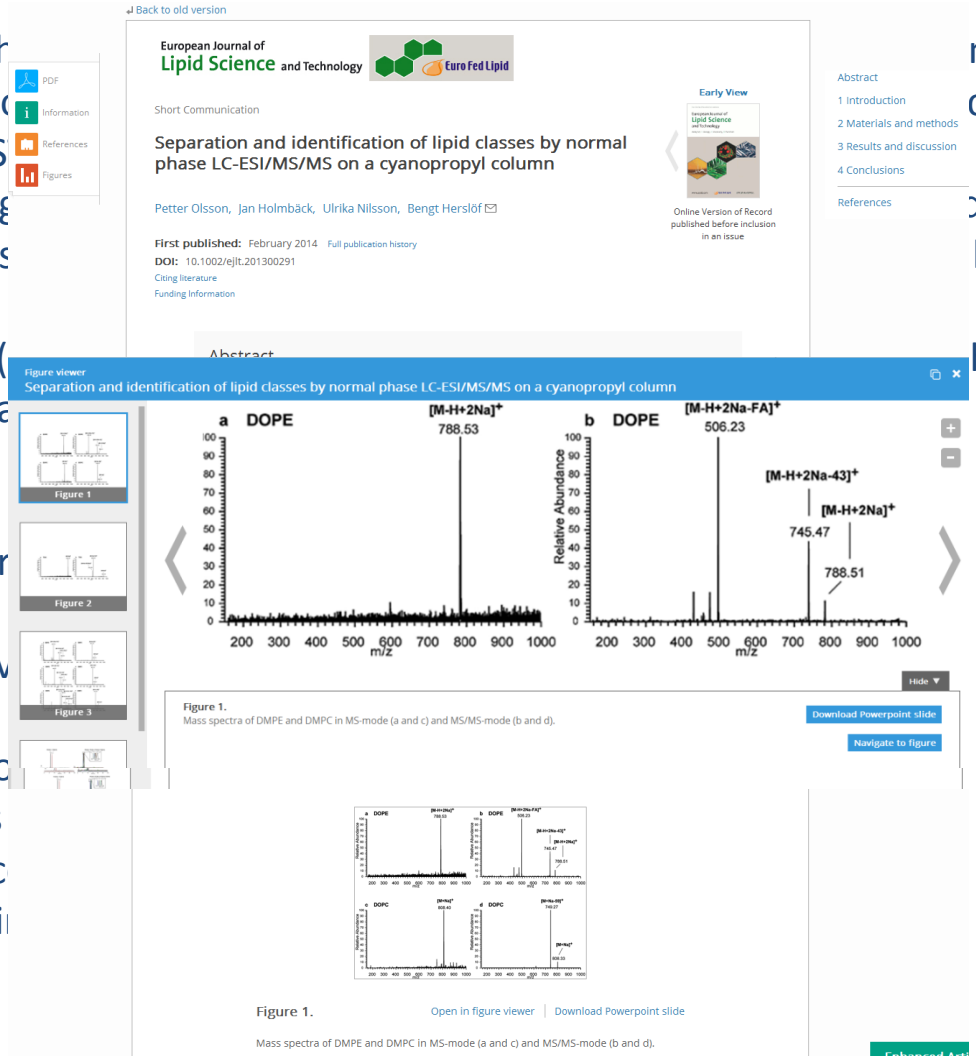
Questions, Suggestions (Special issues, Editors, etc.) ejlst@wiley.com

- Circulation: EJSLT h… minor growth in online subscriptions and c… combined (print+online) subscriptions. EJLS… LiTe had a 99% renewal rate also with a slig… d a slight drop in print and combined. LiTe has… low).

- Anywhere Article (… hancements planned: Adding value digita…
  - SEO
  - Altmetrics
  - Online featur…

- This month we hav…

- How to publish mo…
  - Data Articles
  - Expanding sc…
  - Commissioni…



Concluding remarks

Questions, Suggestions (Special issues, Editors, etc.) ejlst@wiley.com

- EJLST electronic usage shows a stable growth
- LiTe usage is more sensitive to external factors and has grown considerably (2013 and current months)
- Submissions are increasing and importantly, the quality has improved as well
- Two important strategic points: publishing more quality content and adding value digitally
- Due to ISI indexing problems, IF2013 forecast is uncertain and IF2014 forecasts absolutely impossible (last issue indexed is January 2014). A small drop in IF is expected, and we are working on special issues with high citation potential to help the IF grow again

Research Article

Lipopeptide-modified PEG-PE-based pharmaceutical nanocarriers for improved cytotoxicity against glioma cells

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[1] Leibniz-Institut für Molekulare Pharmakologie im Forschungsverbund Berlin e.V. (FMP), Robert-Roessle-Str. 10, 13125 Berlin, Germany
[2] Department of Pharmaceutical Sciences, Northeastern University, 360 Huntington Avenue, Boston, Massachusetts 02115, USA

***Correspondence:** Leibniz-Institut für Molekulare Pharmakologie im Forschungsverbund Berlin e.V. (FMP), Robert-Roessle-Str. 10, 13125 Berlin, Germany; **Fax:** +49 30 94793269 ; **Email:** sydow@fmp-berlin.de

Running Title: Lipopeptide-modified micelles improve cytotoxicity in glioma cells

Keywords: Lipopeptide, micelles, brain, glioma, drug delivery, nanoparticles

Abbreviations: LP, lipopeptide

Abstract

Surface modification of nanoparticles (NP) is a promising approach for enhancing the delivery of drugs into the brain and into cancer cells. Recently we demonstrated the selective uptake of cationic lipopeptide micelles into endothelial cells of brain microvessels. Here, we show that lipopeptides are promising tools to deliver an anticancer drug incorporated into PEGylated lipid (PEG-PE) micelles into glioblastoma cells. PEG-PE micelles containing paclitaxel (PCL) were stably modified with different arginine (R-) and lysine (K)- rich lipopeptides. The size and surface charge of the micelles did not alter after modification with lipopeptides as determined with dynamic light scattering (DLS) and zeta potential measurements. Confocal laser scanning microscopy (CLSM) studies revealed a co-localization of both the fluorescent lipopeptides and a marker lipid of the micelles in the lysosomes of human glioblastoma cells (U87MG). Flow cytometry (FACS) studies showed that the arginine-rich lipopeptide caused most efficient uptake into the cancer cells. The pronounced uptake correlated with higher cytotoxic effect of PCL incorporated into peptide-tagged micelles compared to the unmodified carriers. As a conclusion, arginine-rich lipopeptides known to enhance the uptake of different NP into blood brain barrier endothelial cells seem to be also encouraging candidates for targeting brain-located tumors.

Practical applications

The surface modification of existing carrier systems with lipopeptides to improve their applicability has been proven by this work. Furthermore, the findings in this study are the basis for further improvement of lipopeptide modified PEG-PE micelles and their possible *in vivo* application in animal models of glioblastoma. The incorporation of anti-cancer drugs as well as diagnostic agents and their delivery to and beyond the BBB can be a tool for a broad number of further investigations.

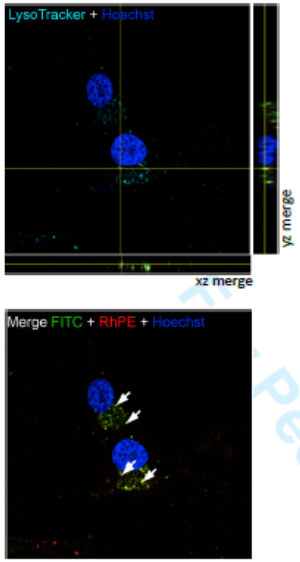

Figure 2. CLSM images of U87MG cells exposed to P2fRn PEG750-PE complexes at 37 °C for 5 h. Green = carboxyfluorescein labeled lipopeptide, red = Rhodamin-PE, blue = Hoechst 33342 nuclei staining, cyan = Lysotracker® DND22 blue

A comparable peptide loading was used for PEG-PE formulations; however, the PEG-chains appear to sterically hinder a localization of the lysine-peptide -modified as well as other lipopeptide-tagged micelles at the cell membrane. Furthermore, cell entry was not driven by high concentration gradients between inner and outer membrane of lipopeptides nor is a positive surface charge necessary for an efficient internalization [33]. Both fluorescent compounds of the PEG-PE micelles, Rhodamin-PE and the lipopeptide were co-localized in lysosomes. These findings are consistent with other studies reporting that lipopeptide and PEG-PE micelles enter cells via clathrin dependent endocytosis [18,34] which then leads to lysosomal localization.

3.2.2 Fluorescence activated cell sorting (FACS)

The uptake-mediating efficiency of lipopeptides is known to differ with respect to the characteristics of the carrier system and the peptide sequence [7]. We quantified the uptake using flow cytometry. All lipopeptides induced increased uptake of PEG-PE micelles into glioma cells compared to non-modified particles. Longer PEG-chains shield attached lipopeptides and thus reduce the uptake-promoting effect of lipopeptides as shown by the pronounced uptake of PEG750-PE compared to PEG2k-PE micelles (Figure 3).

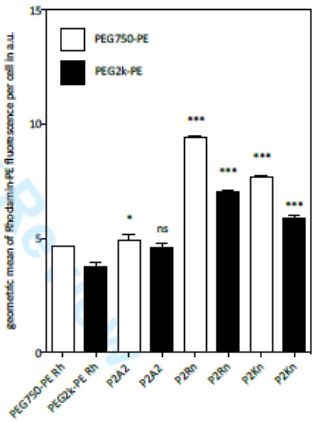

Figure 3. FACS analysis of U87MG exposed to PEG-PE lipopeptide-preparations at 37°C, 5 h incubation. Fluorescence values represent mean ± SD. Values significantly differ from unmodified PEG-PE micelles as determined with one-way ANOVA and marked with asterisk (ns $p > 0.05$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$). A minimum of 10,000 events per sample were analysed. Each experiment was performed at least twice in duplicates.

These findings further support the idea that the peptide moieties of micelle-bound lipopeptides are located between the long PEG-chains and interact with their hydrophilic part. However, in contrast to