

Title	Exploration of solubilisation effects facilitated by the combination of Soluplus® with ionic surfactants
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Publication date	2025-02-01
Original Citation	Lange, J. J., Enzner, L., Kuentz, M., O'Dwyer, P. J., Saal, W., Griffin, B. T. and Wyttenbach, N. (2025) 'Exploration of solubilisation effects facilitated by the combination of Soluplus® with ionic surfactants', European Journal of Pharmaceutical Sciences, 205, 106957 (11pp). https://doi.org/10.1016/j.ejps.2024.106957
Type of publication	Article (peer-reviewed)
Link to publisher's version	10.1016/j.ejps.2024.106957
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Download date	2026-09-20 00:46:15
Item downloaded from	https://hdl.handle.net/10468/17020

Exploration of Solubilisation Effects Facilitated by the Combination of Soluplus® with Ionic Surfactants

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1. Supplementary Material

The solubility values determined at the highest concentration of incorporated ionic surfactant are illustrated in Figure 1.

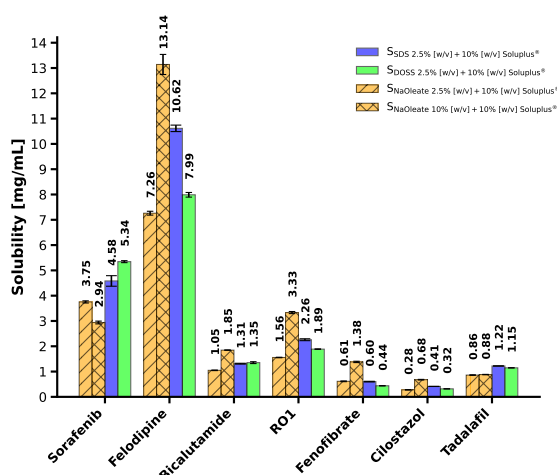


Figure 1: Drug solubility in 10% [w/v] Soluplus® solutions including 2.5% [w/v] ionic surfactant and 10% [w/v] NaOleate.

The solubilisation ratio was calculated based on Equation 1, in which C_x corresponds to the concentration of the drug in the composite vehicle at 1% [w/v] ionic surfactant incorporated, and C_y to the solubility in 10% [w/v] Soluplus®. The values are depicted in Figure 2.

$$SR = \frac{C_{x(1\% [w/v])}}{C_y} \quad (1)$$

The standard error was calculated as reported previously and outlined in Equation 2. Where the σ values

correspond to the respective standard deviations (Bennett-Lenane et al., 2021).

$$SE_{SR} = SR \cdot \sqrt{\left(\frac{\sigma_{x(1\% [w/v])}}{C_{x(1\% [w/v])}}\right)^2 + \left(\frac{\sigma_y}{C_y}\right)^2} \quad (2)$$

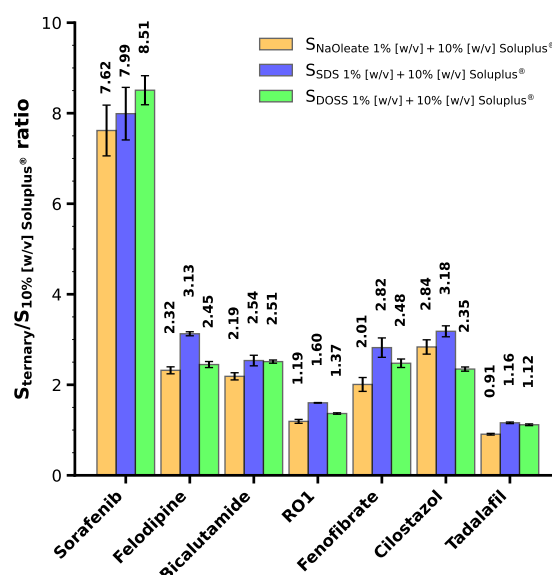


Figure 2: Solubilisation ratio of the composite systems at 1% [w/v] ionic surfactant incorporated over the solubility in 10% [w/v] Soluplus®.

References

- Bennett-Lenane, H., O'Shea, J.P., Murray, J.D., Ilie, A.R., Holm, R., Kuentz, M., Griffin, B.T., 2021. Artificial neural networks to predict the apparent degree of supersaturation in supersaturated lipid-based formulations: A pilot study. *Pharmaceutics* 13, 1398. URL: <http://dx.doi.org/10.3390/pharmaceutics13091398>, doi:10.3390/pharmaceutics13091398.

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