

Environmental Sustainability Assessments of Pharmaceuticals: an emerging Need for Simplification in Life Cycle Assessments

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ELECTRONIC SUPPLEMENTARY INFORMATION

2 Pages, no tables or figures

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**SI 1. Correlation models of cumulative resource consumption at overall industrial level
(γ) in terms of Cumulative Exergy Extraction from the Natural Environment (CEENE)**

γ_A

$$\begin{aligned} \text{LOG}(CEENE_A) = & 3.575 + 0.269 * \text{LOG}(\text{Organic Solvent}) - 0.693 * \text{LOG}(\text{Molar Efficiency}) \\ & + 0.550 * \text{LOG}(\Delta t) - 0.201 * \text{LOG}(\Delta T) - 0.043 * \text{LOG}(\# \text{ Reactors}) \end{aligned}$$

γ_B

$$\begin{aligned} \text{LOG}(CEENE_B) = & 3.766 + 0.264 * \text{LOG}(\text{Organic Solvent}) - 0.685 * \text{LOG}(\text{Molar Efficiency}) \\ & + 0.518 * \text{LOG}(\Delta t) - 0.198 * \text{LOG}(\Delta T) \end{aligned}$$

γ_C

$$\begin{aligned} \text{LOG}(CEENE_C) = & 4.280 + 0.266 * \text{LOG}(\text{Organic Solvent}) - 0.709 * \text{LOG}(\text{Molar Efficiency}) \\ & + 0.328 * \text{LOG}(\Delta t) \end{aligned}$$

γ_D

$$\text{LOG}(CEENE_D) = 4.946 + 0.543 * \text{LOG}(\text{Organic Solvent}) - 0.770 * \text{LOG}(\text{Molar Efficiency})$$

γ_E

$$\text{LOG}(CEENE_E) = 5.032 + 0.648 * \text{LOG}(\text{Organic Solvent})$$