

Supplemental info

# Evolution of realistic organic mixtures for the origins of life through wet-dry cycling

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Organic mixtures were prepared with the following chemicals in the listed amounts (Table S1). Table S2 is provided as a csv file and contains the dataset used to generate the PCA biplots.

**Table S1. Composition of organic mixture.**

compound	mole amount
2 and 3-methylbutanoic acid	0.00014742
2-ethylhexanoic acid	8.2028E-05
2-hexanone	4.5431E-05
2-hydroxyisobutyric acid	1.1527E-05
2-methylheptanoic acid	9.059E-05
2-methylhexanoic acid	6.4171E-05
2-pentanone	4.6473E-05
2-propylpentanoic acid	3.9335E-05
2-pyrrolidone	0.00217131
2,2-dimethylhexanoic acid	4.0392E-05
3-pentanone (diethyl ketone)	6.1506E-05
4-methyloctanoic acid	6.4408E-05
4-methylpentanoic acid	5.3159E-05
acetamide	0.00084476
acetone	8.5937E-05
adipic	0.00034898
alanine	8.4185E-05
alpha-aminobutyric acid	3.685E-05
alpha-aminoisobutyric acid	0.00022304
ammonia	0.12101462
aspartic acid	0.00111637
benzaldehyde	0.00023513
benzoic acid	8.8438E-05
beta-alanine	2.9183E-05
butyraldehyde	2.6733E-05

**Citation:** Foster, K.; Hillman, B.; Rajaei, V.; Seng, K.; Maurer, S. Evolution of Realistic Organic Mixtures for the Origins of Life through Wet–Dry Cycling. *Sci* **2022**, *4*, 22. <https://doi.org/10.3390/sci4020022>

Academic Editor: Claus Jacob

Received: 21 February 2022

Accepted: 23 May 2022

Published: 27 May 2022

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cyclohexanone	0.00011442
D-2-hydroxy-3-methylbutyric acid	1.1005E-05
D,L-2-hydroxycaproic acid	2.8753E-05
decanoic acid	3.309E-05
erythronic/threonic acid	0.00036957
ethanol	0.09287998
	bubbled for 10 seconds
ethylamine	0.03285208
ethylsulfonic acid	1.8481E-05
formaldehyde	2.6504E-05
formic acid	3.6023E-05
glutamic acid	0.00163292
glutarimide	0.00014965
glyceric acid	0.00029924
glycerol	0.00019582
glycine	2.7613E-05
glycolic acid	8.9028E-06
hexanal	0.00044456
hexanoamide	0.00303982
iminodiacetic	5.2603E-05
isovaline	4.0164E-05
L-lactic acid	0.00055562
lactamide	0.00088121
malonic acid	0.15510772
methanol	0.00335059
methyl nicotinic acid	2.7078E-05
methyl phosphonic acid	0.00029824
methyl succinic acid	0.06544584
methyl sulfonic acid	0.00093484
methylaniline	0.0026379
N-acetyl-glutamic acid	0.0004321
N-acetyl-glycine	0.00463112
N-propyl sulfonic acid	0.00375357
nicotinic acid	0.00011681
nonanoic acid	6.8655E-05
octanoic acid	0.00163773
parabanic acid	0.0010005
phosphoric acid (15 M)	2.9532E-05
proline	1.9494E-05
propionaldehyde	0.00143289
pyroglutamic acid	

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sodium bicarbonate	0.00998785
sodium triphosphate	0.00273742
succinic acid	0.00071725
succinimide	0.00190938
sulfuric acid (18.05 M)	0.01001775
urea	0.05678322
valine	2.4754E-05