

CBD Notification 2026-032 - Peer review of the independent scientific study on synthetic biology

Hereby, I endorse the submission in response to notification 2026-032 in the annex.


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CBD National Focal Point

Date: 13 April 2026

Annex

**Peer review comments on:
Draft independent scientific study on synthetic biology**

Comments on the independent scientific study on synthetic biology		
Page #	Line #	Comment
5	166	in the abbreviation of "GMO", it should be "Genetically" not "Genetic"
7	252	The European Commission does not consider that "genome editing" and "de novo gene synthesis" in themselves meet the operational definition of synthetic biology recalled in lines 246 to 249. Synthetic biology should be understood as a multi-disciplinary approach to biology/biotechnology not a defined technique. For that reason, it is incorrect to declare the techniques "genome editing" or "de novo gene synthesis" as synthetic biology. They are, like other techniques, a tool that can be used for synthetic biology applications, but not all uses of genome editing and de novo gene synthesis can be classified as synthetic biology. Furthermore minimal genomes, synthetic cells and engineered gene drives are not techniques on their own, but rather synthetic biology applications. Therefore, the sentence in lines 251 to 253 should be amended as follows: "It encompasses a wide array of developing and increasingly reported applications, including minimal genomes, synthetic cells and engineered gene drives".
10	314	It's unclear what baseline or reference point the term "larger" is comparing to in this sentence.
10	321	"synthetic" should be inserted before "fertilizer"
12	352	Reference 94 is most likely wrong here
19	640	Reference 94 should be included here

19	634	Reference should also be made to work by the European Food Safety Authority (EFSA), in particular to the following scientific opinions: EFSA Scientific Committee (2020). Scientific Opinion on the evaluation of existing guidelines for their adequacy for the microbial characterisation and environmental risk assessment of microorganisms obtained through synthetic biology. EFSA Journal 2020;18(10):6263, https://doi.org/10.2903/j.efsa.2020.6263 EFSA Scientific Committee (2020). Scientific Opinion on the evaluation of existing guidelines for their adequacy for the microbial characterisation and environmental risk assessment of microorganisms obtained through synthetic biology. EFSA Journal, 18(10), 6263. https://doi.org/10.2903/j.efsa.2020.6263 EFSA Panel on GMOs (2021). Evaluation of existing guidelines for their adequacy for the molecular characterisation and environmental risk assessment of genetically modified plants obtained through synthetic biology: EFSA Journal 20(7), https://doi.org/10.2903/j.efsa.2021.6301. EFSA GMO Panel (2021). Scientific Opinion on the evaluation of existing guidelines for their adequacy for the molecular characterisation and environmental risk assessment of genetically modified plants obtained through synthetic biology. EFSA Journal 19(2):6301, https://doi.org/10.2903/j.efsa.2021.6301 EFSA GMO Panel (2022). Scientific Opinion on the evaluation of existing guidelines for their adequacy for the food and feed risk assessment of genetically modified plants obtained through synthetic biology. EFSA Journal 2022;20(7):7410, https://doi.org/10.2903/j.efsa.2022.7410 EFSA Scientific Committee (2022). Scientific Opinion on the evaluation of existing guidelines for their adequacy for the food and feed risk assessment of microorganisms obtained through synthetic biology. EFSA Journal 2022;20(8):747, https://doi.org/10.2903/j.efsa.2022.7479
20	670	It should be clarified that the documents identified for "Europe" are academic papers describing the research landscape and are not official policy documents.
20	676	Finland should be moved up to the previous paragraph
25	Figure 6	The entry "European Union" should be replaced by "European Patent Office" (EPO). The EPO's jurisdiction spans 39 European states (27 EU Member States + 12 other European states).
33	980	Also here it should be clarified that EPO's jurisdiction extends beyond the EU
35	Figure 12	The entry "European Union (EPO)" should be replaced by "EPO"
63	2082	If possible, a link should be provided for reference 31
70	2307	Details are missing for reference 97
71	2323	Reference 103 appears to be incomplete
71	2325	If possible, a link should be provided for reference 104
72	2351	Reference 114 appears to be incomplete

73-74	2391-2413	The distinction between synthetic biology and other biotechnological approaches—such as classical genetic engineering—is often blurred in the scientific literature. Older and emerging techniques are often subsumed under the category of synthetic biology, making a precise delimitation of synthetic biology difficult. The study relies, in the absence of standardised criteria, on self-identification to decide whether a study uses synbio approaches or not. It should be acknowledged in the text that the papers included use a wide range of techniques, and that it may be open to interpretation whether certain approaches qualify as synbio or not (see also the comment above on page 7, line 252).
74	2388	It is the European Commission's understanding that the exclusion and inclusion criteria only apply to the literature compiled in the supplementary data and not to the references in the maintext. This should be clarified.
74	2428	An impact factor of larger than 4 as an inclusion criterion may discriminate against journals addressing relevant research fields, in particular in plant science. Plant science journals, especially when they are focussed on specific, comparatively narrow research fields like photosynthesis or mycorrhizha generally have lower impact factors than molecular biology journals but are potentially still highly relevant for synthetic biology. It should at least be acknowledged that some relevant studies could have been excluded.
74	2432	The European Commission assumes that all four criteria must be fulfilled for inclusion in the study. It is, however, not clear what "direct synthetic biology tools" means, given that there is no definition of synthetic biology

