ASSEMBLY THIRD READING
AB 1864 (Berman)
As Amended May 18, 2026
Majority vote

SUMMARY

Prohibits a manufacturer from producing, selling, or delivering benchtop nucleic acid synthesis equipment and prohibits a provider from producing, selling, or delivering synthetic nucleic acids subject to screening unless the provider or manufacturer adheres to the Framework for Nucleic Acid Synthesis Screening issued by the Fast Track Action Committee on Synthetic Nucleic Acid Procurement Screening of the National Science and Technology Council, as revised in September 2024 (the framework), as specified. Specifies that the version of the framework described in this bill is the sole operative version, and any subsequent revision, supplement or successor to the framework that is issued by a federal entity is prohibited from modifying or being incorporated into the meaning of "framework" as defined in this bill unless the Legislature expressly amends the meaning of "framework." Makes a violation of this bill subject to civil penalties, as specified. Prohibits this bill from being interpreted to regulate the activities of a customer that is not a provider or manufacturer, including with respect to medical or pharmaceutical research and development or manufacturing, drug screening assays, reagent production, tests employed in preclinical and clinical studies, manufacturing of biologics, gene therapy, and ribonucleic acid (RNA) therapeutics.

COMMENTS

Biosecurity scholars and experts have long recognized there is a great potential for misuse of synthetic biological techniques, including gene synthesis or the artificial process of using chemicals and specialized equipment to build deoxyribonucleic acid (DNA) or RNA sequences, rather than copying them from a living organism. Though the benefits of synthetic biology and gene synthesis are widely recognized, there are concerns that specific nucleic acid sequences (or sequences of concern) can be used to create dangerous pathogens that could then be weaponized and used as biological weapons.

The federal framework was developed by the Fast Track Action Committee on Synthetic Nucleic Acid Procurement Screening of the National Science and Technology Council, spurred in part by an October 2023 executive order by then-President Biden. The executive order emphasized the need to reduce the risk of misuse of synthetic nucleic acids, which could be substantially increased by the capabilities of artificial intelligence.

Under the framework, a manufacturer is an entity that produces and distributes benchtop nucleic acid synthesis equipment. A provider is an entity that synthesizes and distributes synthetic nucleic acids and which may provide synthetic nucleic acids to a customer or third-party vendor as a transactional service, rather than as a research scientist collaborating with a colleague. A customer is an individual or entity, such as an institution, that orders or requests synthetic nucleic acids from a provider or purchases nucleic acid synthesis equipment from a manufacturer.

According to the framework, providers and manufacturers should take the following six actions:

1) Attest to implementing this screening framework through a statement that either is posted on a public website or provided to the federally funded customer and federal funding agency upon request;

2) Screen purchase orders for synthetic nucleic acids to identify sequences of concern (SOCs), which at the time of the framework's issuance, includes a nucleotide sequence or its corresponding amino acid sequence that is a best match to a sequence of federally regulated agents, except when the sequence is also found in an unregulated organism or toxin. As of and after October 13, 2026, this definition will include sequences known to contribute to pathogenicity or toxicity, even when not derived from or encoding regulated biological agents;

3) Screen customers submitting purchase orders of synthetic nucleic acids with SOCs, and purchase orders of benchtop nucleic acid synthesis equipment, to verify legitimacy;

4) Report potentially illegitimate purchase orders of synthetic nucleic acids involving SOCs or of benchtop nucleic acid synthesis equipment;

5) Retain records relating to purchase orders for synthetic nucleic acids and benchtop nucleic acid synthesis equipment; and,

6) Take steps to ensure cybersecurity and information security.

At the time of this analysis' publication, a new framework has not been issued, and it is unclear whether the 2024 framework is still in place. The 2025 Executive Order does not explicitly rescind the 2024 framework, yet Pennsylvania State University's website states that it has been paused.

This bill prohibits providers and manufacturers from producing, selling, or delivering benchtop nucleic acid synthesis equipment and synthetic nucleic acids subject to screening in this state unless they adhere to the framework.

According to the Author
From Silicon Valley to Biotech Beach, California is the undisputed cradle of innovation, which has led to great technological advancements and the development of lifesaving vaccines and treatments. However, innovation cannot come at the expense of protecting public health and we must implement enforceable guardrails to ensure that gene synthesis technology is not misused to create dangerous bioweapons. The author states that this bill would protect Californians against the misuse of gene synthesis technology by requiring providers of synthetic genes and manufacturers of gene synthesis equipment to screen customer orders for dangerous pathogen sequences and confirm the legitimacy of customers. The author concludes that this bill is a commonsense approach to standardize federally recognized best practices in order to keep Californians safe and defend against biological threats.

Arguments in Support
This bill is sponsored by ENCODE AI and the Secure AI Project, who state in support that this bill would align California law with existing federal guidelines, safeguarding public health and protecting California's life sciences enterprise from misuse. The cosponsors state that the history of biological threats demonstrates the existence of malicious and irresponsible actors. The cosponsors note that in 2023, local authorities discovered an illegal biolab in Reedley, California,

operating without proper containment or oversight, storing pathogens including human immunodeficiency virus, malaria, and SARS-CoV-2 (which is the virus that causes COVID-19). The cosponsors further state that in the 1990s, the Japanese cult Aum Shinrikyo attempted to acquire Ebola, cultivate anthrax, and produce botulinum toxin. Those efforts failed in part because the group needed to collect physical samples from nature. The cosponsors contend that gene synthesis removes that barrier: a bad actor with access to synthesis services or equipment no longer needs a physical sample to obtain a dangerous biological agent. Gene synthesis screening is the primary defense against misuse. Screening checks orders against databases of dangerous pathogen sequences and verifies that customers are legitimate researchers at known institutions. The cosponsors applaud efforts related to screening [including the creation of the International Gene Synthesis Consortium (IGSC), AB 1963 (Salas), Chapter 179, Statutes of 2022, and the framework] and recognize that each of them relies on voluntary compliance and self-attestation with no independent verification. The cosponsors continue that voluntary compliance creates an uneven playing field that punishes responsible firms for doing the right thing and leaves a gap that bad actors can exploit. The cosponsors state this bill would make compliance with the federal government's 2024 Framework mandatory. The cosponsors conclude that this bill will not only safeguard Californians from severe public health threats, but also protect industry against incidents that could jeopardize public trust and result in backlash.

Arguments in Opposition
None to the current version of this bill.

FISCAL COMMENTS

According to the Assembly Committee on Appropriations, the Department of Justice (DOJ) estimates costs of $1.2 million in fiscal year (FY) 2026-27 and $2.3 million per year in FY 2027-28 and ongoing (General Fund). DOJ states it will work with an expert to assess when there is a violation and to litigate violations of this bill. DOJ projects it will need three deputy attorneys general, two legal secretaries, and $1 million for external consultant costs. Cost pressures of an unknown amount to the courts in additional workload to adjudicate additional filings resulting from this bill. Costs will depend on the number of cases filed and the amount of court time needed to resolve each case (Trial Court Trust Fund, General Fund). It generally costs approximately $1,000 to operate a courtroom for one hour. Although courts are not funded based on workload, increased pressure on the Trial Court Trust Fund may create a demand for increased funding for courts from the General Fund.

VOTES

ASM HEALTH: 16-0-0
YES: Bonta, Chen, Addis, Aguiar-Curry, Pacheco, Caloza, Carrillo, Mark González, Johnson, Patel, Patterson, Rogers, Sanchez, Schiavo, Sharp-Collins, Stefani

ASM JUDICIARY: 12-0-0
YES: Kalra, Macedo, Bauer-Kahan, Bryan, Connolly, Dixon, Harabedian, Pacheco, Papan, Sanchez, Stefani, Zbur

ASM APPROPRIATIONS: 11-0-4
YES: Wicks, Aguiar-Curry, Calderon, Caloza, Fong, Mark González, Krell, Pacheco, Pellerin, Sharp-Collins, Solache
ABS, ABST OR NV: Hoover, Dixon, Ta, Tangipa

UPDATED

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