SENATE JUDICIARY COMMITTEE
Senator Thomas Umberg, Chair
2025-2026 Regular Session

AB 1864 (Berman)
Version: May 18, 2026
Hearing Date: June 23, 2026
Fiscal: Yes
Urgency: No
AM

SUBJECT

Gene synthesis equipment manufacturers and providers

DIGEST

This bill prohibits a manufacturer from producing benchtop nucleic acid synthesis equipment in this state or selling or delivering such equipment to a customer in this state unless the manufacturer adheres to the Framework for Nucleic Acid Synthesis Screening ("the framework") guidance document 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, except as provided. Under the bill, violation of this prohibition by a provider or manufacturer is subject to a civil penalty not to exceed $1,000, which can only be brought in a cause of action by the Attorney General.

EXECUTIVE SUMMARY

In October of 2023, then President Biden signed Executive Order 14110 with the purpose of governing the development and use of artificial intelligence (AI) safely and responsibly under a coordinated federal wide approach. (88 Fed. Reg. 75191) The Executive Order (EO) required specified actions to be taken related to the risk of misuse of synthetic nucleic acids. The Framework for Nucleic Acid Synthesis Screening that this bill references was established as a result of this EO by the National Science and Technology Council's (NSTC) Fast Track Action Committee on Synthetic Nucleic Acid Procurement Screening. Regrettably, this EO was rescinded mere hours after President Trump was inaugurated for his second term. For a detailed analysis of the framework and how it provides for the screening of sequences of concern (SOCs), see the Senate Health Committee analysis of this bill.[1] This analysis will focus on the provisions of the bill in this Committee's jurisdiction, specifically the civil penalty enforcement and potential Commerce Clause implications.

[1] Sen. Health Comm. analysis of AB 1864 (2025-26 reg. sess.) as amended May 18, 2026.

This bill is sponsored by Encode AI Corporation and Secure AI Project. The bill is supported by the American Nurses Association/California, Anthropic, the California Medical Association, the California Initiative for Technology & Democracy, the Kapor Center Advocacy, and 12 individuals. No timely opposition was received by the Committee. The bill passed the Senate Health Committee on a vote of 10 to 0.

PROPOSED CHANGES TO THE LAW

Existing law:

1) Requires the California State University (CSU), and requests the University of California (UC), to develop systemwide guidance for purchasing gene synthesis equipment or products from gene synthesis providers that prevent the misuse of synthetic genes and safeguard the benefits of gene synthesis technology while minimizing risk, and to consider including International Gene Synthesis Consortium (IGSC) criteria in their guidance. (Ed. Code § 66361.)

2) Defines the following terms:
   a) "Gene synthesis product" is double-stranded DNA, double-stranded nucleic acids, RNA, or oligonucleotides, designed and created without an existing DNA template.
   b) "Gene synthesis equipment" is equipment needed to produce gene synthesis products that is not readily used for any other purpose.
   c) "Gene synthesis provider" is an entity that does any of the following:
      i) An entity that creates gene synthesis products for delivery to a customer;
      ii) A distributor of gene synthesis products, including, but not limited to, entities that manufacture gene synthesis products for use by other parties, both inside and outside of the entity; or,
      iii) A third-party entity that is not the end user of a gene synthesis product and does not make gene synthesis products, but otherwise fills, completes, modifies, or purifies gene synthesis products. (Ed. Code § 66360.)

3) Clarifies that "gene synthesis provider" does not include a research scientist making gene synthesis products for the research scientist's own use or for use by another research scientist or an entity that manufactures gene synthesis products for the entity's own use. (Ed. Code § 66360.)

This bill:

1) Prohibits a manufacturer from producing benchtop nucleic acid synthesis equipment in the state or selling or delivering such equipment to a customer in the state unless the manufacturer adheres to the framework with respect to the produced, sold, or delivered equipment.
   a) Defines "framework" as the Framework for Nucleic Acid Synthesis Screening ("the framework") guidance document issued by the Fast Track Action

Committee on Synthetic Nucleic Acid Procurement Screening of NSTC as revised in September 2024.

b) States that the September 2024 version of the framework is the sole operative version and prohibits any subsequent revisions, supplements, or successors issued by a federal entity from modifying or being incorporated into the meaning of "framework" unless the Legislature expressly amends the meaning of "framework."

2) Prohibits a provider from producing synthetic nucleic acids subject to screening in the state or selling or delivering such nucleic acids to a customer in the state unless the provider adheres to the framework with respect to the produced, sold, or delivered nucleic acids.

3) Specifies that if the framework uses the term "should," it is a requirement for a provider or manufacturer, and if the framework uses the term "encouraged," it is a recommendation, but not a requirement, for a provider or manufacturer.

4) Makes a provider or manufacturer who violates this bill subject to a civil penalty not to exceed $1,000 per day that the violation continues dependent on the severity of the violation.
   a) A civil penalty assessed is to be recovered in a civil action brought only by the Attorney General.

5) Specifies that this bill does not regulate the activities of a customer who is not a provider or manufacturer, including, but not limited to, activities related 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 RNA therapeutics.

6) Defines the following terms for these purposes.
   a) "Benchtop nucleic acid synthesis equipment" means equipment sold by manufacturers that is intended to be used to synthesize nucleic acids for use within a research laboratory or within an institution. While it may not necessarily be small enough to be placed on a benchtop, it is still considered benchtop equipment if it is sold with the intent that it will be used by researchers individually or in a core facility at an institution;
   b) "Customer" means an individual or entity (such as an institution) that orders or requests synthetic nucleic acids from a provider, or that purchases nucleic acid synthesis equipment from a manufacturer;
   c) "Manufacturer" means an entity that produces and distributes benchtop equipment for synthesizing nucleic acids. Manufacturers may provide equipment to a customer or third-party vendor;
   d) "Provider" means an entity that synthesizes and distributes synthetic nucleic acids. Providers may provide nucleic acids to a customer or third-party vendor. A provider is understood to be synthesizing and distributing nucleic acids as a

transactional service, rather than as a research scientist collaborating with a colleague; and,

e) "Synthetic nucleic acids subject to screening" means single-or double-stranded DNA or RNA, 200 nucleotides or longer (including the corresponding amino acid sequence, if applicable). As of October 13, 2026, this screening window will be decreased to 50 nucleotides, and providers should implement screening mechanisms that detect the potential for shorter nucleotides to be assembled into Sequences of Concern (SOC) when multiple synthetic nucleic acids are ordered by the same customer in a bulk order or in multiple orders over time.

7) Makes the provisions of this bill severable.

COMMENTS

1. Stated need for the bill

The author writes:

> 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. AB 1864 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. This bill is a commonsense approach to require federally recognized best practices in order to keep Californians safe and defend against biological threats.

2. Risks of synthetic biology

The Senate Health Committee analysis of this bill provides a detailed background on the emerging risks of synthetic biology amidst the growing prevalence of artificial intelligence. That Committee analysis notes:

> In June 2018, in response to a request from the Department of Defense, the National Academy of Sciences released "Biodefense in the Age of Synthetic Biology." According to this report, synthetic biology and related biotechnologies expand the landscape of potential biodefense concerns. These capabilities could enable new modes of attack, some of which may not be detectable or treatable with current approaches to disease containment and biodefense mitigation. The age of synthetic biology also lowers some of the barriers to developing and using biological and chemical weapons, potentially putting such weapons within the reach of adversaries with relatively low expertise, financing, and access to scientific equipment and

> resources. The advent of sophisticated algorithms and artificial intelligence (AI) have also heightened biosecurity risks by reducing the scientific expertise required to create bioweapons. The *California Report on Frontier AI Policy* highlights that AI models can help users access dual-use biological knowledge, allowing novices to create known biological threats. Open AI's o3 large language model was able to outperform 94% of expert virologists on questions of troubleshooting complex virology laboratory protocols, according to a 2025 preprint.[2]

This bill seeks to address these risks by prohibiting a manufacturer from producing benchtop nucleic acid synthesis equipment in the state or selling or delivering such equipment to a customer in the state unless the manufacturer adheres to the Framework for Nucleic Acid Synthesis Screening ("the framework") guidance document issued by the Fast Track Action Committee on Synthetic Nucleic Acid Procurement Screening of the National Science and Technology Council (NSTC) as revised in September 2024.

The framework contains the following requirements for synthetic nucleic acid providers and benchtop synthesis equipment manufacturers:

- attest to implementing the 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;
- screen purchase orders for synthetic nucleic acids to identify SOCs;
- screen customers submitting purchase orders of synthetic nucleic acids with SOCs, and purchase orders of benchtop nucleic acid synthesis equipment, to verify legitimacy;
- report potentially illegitimate purchase orders of synthetic nucleic acids involving SOCs or of benchtop nucleic acid synthesis equipment;
- retain records relating to purchase orders for synthetic nucleic acids and benchtop nucleic acid synthesis equipment; and
- take steps to ensure cybersecurity and information security.

3. Enforcement

Under the bill, a violation of its provisions subjects a provider or manufacturer to a civil penalty not to exceed $1,000 per day that the violation continues, dependent on the severity of the violation. This provision will provide the court flexibility in assessing a civil penalty to take into account any and all mitigating factors that may exist. The bill does not create a private right of action and only authorizes the Attorney General to enforce the provisions of the bill.

[2] Sen. Health Comm. analysis of AB 1864 (2025-26 reg. sess.) as amended May 18, 2026, at pp. 3-4.

4. Dormant Commerce Clause

Section 8 of Article I of the United States Constitution grants the United States Congress the power to regulate interstate commerce. The converse proposition—that states may not usurp Congress's express power to regulate interstate commerce—is known as the Dormant Commerce Clause—"the Clause also contains a further, negative command, one effectively forbidding the enforcement of certain state economic regulations even when Congress has failed to legislate on the subject." [3] The United States Supreme Court affirmed that the Dormant Commerce Clause generally does not prohibit a state from regulating commerce within its borders, even if the prohibition affects out-of-state sellers, unless the prohibition acts to discriminate against out-of-state interests for the benefit of in-state commerce. [4] The Court has held that "[s]tate laws that 'regulat[e] even-handedly [across all in-state and out-of-state businesses] to effectuate a legitimate local public interest…will be upheld unless the burden imposed upon such commerce is clearly excessive in relation to the putative local benefits.'"[5] The bill seems to meet these requirements, and as such should not conflict with the Dormant Commerce Clause.

5. Stakeholder statements

A coalition of supporters, including Encode AI Corporation and Secure AI Project (sponsors of the bill), write in support stating:

> […] AB 1864 would mandate compliance with the federal government's 2024 Framework. Gene synthesis providers would need to screen orders against a database of dangerous pathogen sequences and conduct follow-up screening to verify customer legitimacy if a match is found. It would extend similar requirements to manufacturers of benchtop nucleic acid synthesis machines, which can produce DNA on-site. The 2024 Framework incorporated extensive input from industry, academia, and national security experts — many firms already adhere to it, and it imposes minimal burdens on legitimate research.
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> Under AB 1864, companies would need to have a process for reporting orders to law enforcement if concerns about legitimacy cannot be resolved, and they would need to take steps to protect proprietary and other sensitive information. The bill would give the California Department of Public Health limited rulemaking authority to adopt future federal screening guidelines in place of the 2024 Framework, helping avoid conflicting requirements and navigate a changing threat landscape. By empowering the Attorney General to seek civil penalties, AB 1864 would create real enforcement that levels the playing field for responsible firms. This would not only safeguard Californians from severe public health threats, but also protect industry against incidents that could jeopardize public trust and result in backlash. […]

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[3] *National Pork Producers Council v. Ross* (2023) 143 S.Ct. 1142, 1152 (internal quotation marks and alterations omitted).
[4] *Id.* at pp. 1152-1153.
[5] *South Dakota v. Wayfair, Inc.* (2018) 138 S.Ct. 2080, 2091.

SUPPORT

Encode AI Corporation (sponsor)
Secure AI Project (sponsor)
American Nurses Association/California
Anthropic
California Medical Association
California Initiative for Technology & Democracy
Kapor Center Advocacy
12 individuals

OPPOSITION

None received

RELATED LEGISLATION

Pending Legislation: None known.

Prior Legislation:

AB 70 (Salas, 2021) would have required a gene synthesis provider and manufacturer of gene synthesis equipment to either be a member of the International Gene Synthesis Consortium (IGSC) or be verified by the California Department of Public Health (CDPH) as using customer and sequence screening protocols that are equivalent to or stronger than the IGSC's Harmonized Screening Protocol. AB 70 was vetoed by Governor Newsom, who wrote, in part: "In order to fund the establishment of the program, the bill would authorize CDPH to begin charging fees from the entities to be regulated before the program is established and before businesses are required to be in compliance. This structure is not implementable and General Fund resources needed to support the establishment of a new regulatory program should be considered in the annual budget process. Furthermore, consideration should be given to whether a patchwork of state and federal regulations on biosecurity is the most effective way to approach an issue of international magnitude."

AB 1966 (Salas, 2020) would have required CDPH to develop gene sequence and customer screening guidelines and a certification process for gene synthesis providers and manufacturers of gene synthesis equipment operating in California. AB 1966 died in the Assembly Health Committee.

PRIOR VOTES

Senate Health Committee (Ayes 10, Noes 1)
Assembly Floor (Ayes 78, Noes 0)
Assembly Appropriations Committee (Ayes 11, Noes 0)
Assembly Judiciary Committee (Ayes 12, Noes 0)
Assembly Health Committee (Ayes 16, Noes 0)

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