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# SENATE COMMITTEE ON PUBLIC SAFETY

Senator Loni Hancock, Chair

2015 - 2016 Regular

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**Bill No:** SB 1036                      **Hearing Date:** April 5, 2016  
**Author:** Hernandez  
**Version:** February 12, 2016  
**Urgency:** No                                      **Fiscal:** Yes  
**Consultant:** JM

**Subject:** *Controlled Substances: Synthetic Cannabinoids: Analogs*

## HISTORY

Source: Author

Prior Legislation: SB 139 (Galgiani) Currently held at the Assembly Desk  
AB 486 (Hueso) - Ch. 656, Stats. 2011  
SB 420 (Hernandez) - Ch. 420, Stats. 2011  
AB 2420 (Hueso) - Died in Assembly Public Safety, 2012  
AB 1141 (Anderson) - Ch. 292, Stats 2007

Support: Association of Deputy District Attorneys; Association for Los Angeles Deputy Sheriffs; California Association of Code Enforcement Officers; California College and University Police Chiefs Association; California Narcotic Officers Association; California Police Chiefs Association; California State Sheriffs' Association; Consortium Management Group; Los Angeles County Professional Peace Officers Association; Los Angeles Police Protective League; Riverside Sheriffs Association

Opposition: American Civil Liberties Union; California Attorneys for Criminal Justice; California Public Defenders Association; Drug Policy Alliance

## PURPOSE

*The purpose of this bill is to provide that a synthetic cannabinoid that is an analog of another synthetic cannabinoid on the list of prohibited synthetic cannabinoids shall be treated as though it were specifically included in the list.*

*Existing federal law* classifies drugs into five schedules. (21 U.S.C. § 812.)

*Existing California law* generally follows federal law as to the assigned schedule, but does not set out the criteria for the schedules that are included in federal law. (Health & Saf, Code § 11054 et seq.)

Existing law provides that an analog of a controlled substance that is defined or listed as a Schedule I or II drug shall be "treated the same" as the specifically scheduled drug. An analog is defined as follows:

- (1) A substance the chemical structure of which is substantially similar to the chemical structure of a controlled substance classified in Section 11054 or 11055.
- (2) A substance which has, is represented as having, or is intended to have a stimulant, depressant, or hallucinogenic effect on the central nervous system that is substantially similar to, or greater than, the stimulant, depressant, or hallucinogenic effect on the central nervous system of a controlled substance classified in Section 11054 or 11055. (Health & Saf. Code § 11401, subs. (a)-(b).

*Existing law* provides the following exceptions to the analog statute:

- (1) Any substance for which there is an approved new drug application as defined under Section 505 of the federal Food, Drug, and Cosmetic Act (21 U.S.C. Sec. 355) or which is generally recognized as safe and effective for use pursuant to Sections 501, 502, and 503 of the federal Food, Drug, and Cosmetic Act (21 U.S. C. Secs. 351, 352, and 353) and 21 C.F.R. Section 330 et seq.
- (2) With respect to a particular person, any substance for which an exemption is in effect for investigational use for that person under Section 505 of the federal Food, Drug, and Cosmetic Act (21 U.S.C. Sec. 355), to the extent that the conduct with respect to that substance is pursuant to the exemption. (Health & Saf. Code § 11401, subd (c).)

*Existing law* prohibits possession of or commerce in specified drugs by individual statutes, not by reference to or inclusion in the controlled substance schedules. Such drugs include synthetic cannabinoids and nitrous oxide. (Health & Saf. § 11357.5; Pen. Code § 381b and 381c.)

*Existing law* provides that any person who possesses for sale, sells or furnishes any synthetic cannabinoid compound shall be punished by imprisonment in the county jail for up to six months, a fine of up to \$1,000, or both. (Health & Saf. Code § 11357, subd. (a.)

*Existing law* provides that, a person who “uses or possesses” a specified synthetic cannabinoid or specified synthetic stimulant is guilty of an infraction. (Health and Saf. Code § 11357.5.)

*This bill* provides that a synthetic cannabinoid will be deemed to be included in the list of prohibited synthetic cannabinoids and subject to the same penalty as those synthetic cannabinoids enumerated in current law, if the drug or chemical is an analog of any synthetic cannabinoid that is specifically included in that list.

#### RECEIVERSHIP/OVERCROWDING CRISIS AGGRAVATION

For the past several years this Committee has scrutinized legislation referred to its jurisdiction for any potential impact on prison overcrowding. Mindful of the United States Supreme Court ruling and federal court orders relating to the state’s ability to provide a constitutional level of health care to its inmate population and the related issue of prison overcrowding, this Committee has applied its “ROCA” policy as a content-neutral, provisional measure necessary to ensure that the Legislature does not erode progress in reducing prison overcrowding.

On February 10, 2014, the federal court ordered California to reduce its in-state adult institution population to 137.5% of design capacity by February 28, 2016, as follows:

- 143% of design bed capacity by June 30, 2014;
- 141.5% of design bed capacity by February 28, 2015; and,
- 137.5% of design bed capacity by February 28, 2016.

In December of 2015 the administration reported that as “of December 9, 2015, 112,510 inmates were housed in the State’s 34 adult institutions, which amounts to 136.0% of design bed capacity, and 5,264 inmates were housed in out-of-state facilities. The current population is 1,212 inmates below the final court-ordered population benchmark of 137.5% of design bed capacity, and has been under that benchmark since February 2015.” (Defendants’ December 2015 Status Report in Response to February 10, 2014 Order, 2:90-cv-00520 KJM DAD PC, 3-Judge Court, *Coleman v. Brown, Plata v. Brown* (fn. omitted).) One year ago, 115,826 inmates were housed in the State’s 34 adult institutions, which amounted to 140.0% of design bed capacity, and 8,864 inmates were housed in out-of-state facilities. (Defendants’ December 2014 Status Report in Response to February 10, 2014 Order, 2:90-cv-00520 KJM DAD PC, 3-Judge Court, *Coleman v. Brown, Plata v. Brown* (fn. omitted).)

While significant gains have been made in reducing the prison population, the state must stabilize these advances and demonstrate to the federal court that California has in place the “durable solution” to prison overcrowding “consistently demanded” by the court. (Opinion Re: Order Granting in Part and Denying in Part Defendants’ Request For Extension of December 31, 2013 Deadline, NO. 2:90-cv-0520 LKK DAD (PC), 3-Judge Court, *Coleman v. Brown, Plata v. Brown* (2-10-14). The Committee’s consideration of bills that may impact the prison population therefore will be informed by the following questions:

- Whether a proposal erodes a measure which has contributed to reducing the prison population;
- Whether a proposal addresses a major area of public safety or criminal activity for which there is no other reasonable, appropriate remedy;
- Whether a proposal addresses a crime which is directly dangerous to the physical safety of others for which there is no other reasonably appropriate sanction;
- Whether a proposal corrects a constitutional problem or legislative drafting error; and
- Whether a proposal proposes penalties which are proportionate, and cannot be achieved through any other reasonably appropriate remedy.

## COMMENTS

### 1. Need for This Bill

According to the author:

In 2011, Governor Jerry Brown signed into law SB 420 (Hernandez), banning the sale of a specific formulation of synthetic cannabis, or “spice.” Subsequently, spice manufacturers began making slightly different variations, thus staying one step ahead of the law. This presents a uniquely difficult situation for lawmakers, given the deliberate pace with which any new legislation moves, making it impossible to quickly outlaw new substances as they come on the market. SB

1036 will allow for the banning of even slight variations in synthetic marijuana, provided that the chemical makeup and intoxicating effects are similar to the already-banned formulation.

According to the National Conference on State Legislatures (NCSL) which tracks legislation, analogue laws are: "...to ban drugs that are not classified as a controlled substance but are very similar to ones that have been identified and outlawed. Generally, these laws require that the analogue drug be substantially similar in chemical structure and intoxicating (pharmacological) effects as a scheduled controlled substance. According to the National Alliance for Model State Drug Laws, 34 states have analogue laws, and a number of states have amended their analogue laws to specifically address emerging synthetic substances."

While outlawing certain families of substances can be helpful, the ingenuity of the criminal mind ensures that new, potentially more dangerous drugs, will take their place. Putting a comprehensive ban in place will assist in forestalling these efforts.

## **2. Controlled Substance Analogs – Health and Safety Code Sections 11400 and 11401**

California law treats a substance that is the chemical or functional equivalent of a drug listed in Schedule I or II of the controlled substance schedules the same as a scheduled drug. Such a drug is defined as a controlled substance analog. Schedule I drugs are deemed to have no medical utility and a high potential for abuse. Schedule II drugs have legitimate medical uses, but also a high potential for abuse.

Newly developed synthetic cannabinoids, or synthetic cannabinoids that are not on the existing list of prohibited synthetic cannabinoids, are not covered by the California analog statute. That is because they are not included in Schedule I or II of the controlled substances schedules, or any of the five schedules. Illegal synthetic cannabinoids are separately defined and prohibited. T

As described elsewhere in this analysis, synthetic cannabinoids are chemically and functionally unusual and variable.

Health and Safety Code Section 11401 defines an analog as follows:

- (1) A substance the chemical structure of which is substantially similar to the chemical structure of a controlled substance classified in Section 11054 or 11055.
- (2) A substance which has, is represented as having, or is intended to have a stimulant, depressant, or hallucinogenic effect on the central nervous system that is substantially similar to, or greater than, the stimulant, depressant, or hallucinogenic effect on the central nervous system of a controlled substance classified in Section 11054 or 11055.

It is difficult to predict how this bill would be implemented in practice. As noted in the comments below, the main commonality among the extremely varied synthetic cannabinoids is that they bind to the same receptors in the brain and elsewhere in the body. It appears that it has been difficult to develop known samples against which seized drugs or chemicals can be

compared to determine if a chemical is a synthetic cannabinoid, if it is a synthetic cannabinoid on a list of prohibited chemicals, or to determine if the chemical is an analog of specifically prohibited synthetic cannabinoid.

Discussions with experts at <sup>1</sup>RTI International, a scientific research firm that contracts with the Drug Enforcement Administration, various government entities and private firms, indicated that determining in litigation that any particular chemical is an analog of a prohibited synthetic cannabinoid might not be an easy task. This would be particularly true if a defendant presented an expert to raise questions about whether a questioned drug is substantially similar in chemical structure to a prohibited synthetic cannabinoid. Commonalities have been found in structure and composition among known synthetic cannabinoids, but it appears that these commonalties do not necessarily mean particular chemicals are analogs. Further, the effects of synthetic cannabinoids are quite varied. Difficult issues could be raised about whether a questioned drug has substantially similar “effect on the central nervous system” of a user.

Possession of a synthetic cannabinoid is an infraction. Commerce is a misdemeanor. A defendant charged with an infraction is not likely to hire scientific experts to challenge an allegation that the drug seized from him or her is a synthetic cannabinoid analog. A person who is in the business of selling synthetic cannabinoids may be motivated to mount such a challenge.

Finally, RTI experts expressed concerns that entirely new classes of synthetic cannabinoids could be developed that are much different in composition and effect than even the varied versions of synthetic cannabinoids that are known at this time. As is discussed more fully below, the newer versions of synthetic cannabinoids appear to be more dangerous and unpredictable than the first generation of chemicals, particularly those developed through academic research. Arguably, the development of an analog standard that can apply to new classes of synthetic cannabinoids may be necessary to avoid creation of ever more dangerous chemicals. Without such a standard, illicit drug makers will attempt to create compounds not covered by current law. RTI is working to develop analytical techniques to screen for and identify new designer drugs and establish that questioned chemicals are analogs of currently prohibited synthetic cannabinoids.<sup>2</sup>

### 3. Background – Synthetic Cannabinoids

Synthetic cannabinoids come in two basic forms. CB1 cannabinoids bind to CB1 cannabinoid receptors in the brain. CB2 cannabinoid receptors bind to cells throughout the body that are largely involved in regulating the immune system. THC binds to CB1 and CB2 receptors. CB1 cannabinoids have psychoactive properties.<sup>3</sup> Typically statutes, news reports and academic works concern CB1 synthetic cannabinoids. Synthetic cannabinoid compounds were developed in basic medical research for controlled studies of the functions of cannabinoid receptors in the brain and body. These receptors bind with endogenous cannabinoids (produced naturally in the body) and with the active chemicals in cannabis.

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<sup>1</sup> <http://www.rti.org/search.cfm?cx=015240139217186871124%3Axuvfq1dycqy&cof=FORID%3A11&ie=UTF-8&q=synthetic+cannabinoids&sa=Search>

<sup>2</sup> <https://www.rti.org/pubs/grabenaueranalysisofsyntheticcannabinoidssummaryfinal.pdf>

<sup>3</sup> <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3567606/>

The European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) is a European Union agency that “exists to provide the EU ... with a factual overview of European drug problems and a solid evidence base to support the drugs debate.”

The EMCDDA website includes the Following Information about Synthetic Cannabinoids:

Synthetic cannabinoids .... bind to the same cannabinoid receptors in the brain [as THC] ... More correctly designated as cannabinoid receptor agonists, they were developed over the past 40 years as therapeutic agents. ... However, it proved difficult to separate the desired properties from unwanted psychoactive effects. ...[M]any of the substances are not structurally related to the so-called “classical” cannabinoids like THC...[L]ittle is known about the detailed pharmacology and toxicology of the synthetic cannabinoids and few formal human studies have been published. It is possible that, apart from high potency, some cannabinoids could have... long half-lives...leading to a prolonged psychoactive effect. ... [T]here could [also] be considerable ... batch variability...

Recent EMCDDA reports and data on synthetic cannabinoids include:

- A synthetic cannabinoid, JWH-018, was first detected in “Spice” products in 2008.
- 29 synthetic cannabinoids were reported to EMCDDA in 2013.
- 105 synthetic cannabinoids were monitored by EU warning system in January of 2014.
- 14 recognizable chemical families of synthetic cannabinoids are known.

The EMCDDA reports that most synthetic cannabinoids are manufactured in China and shipped through legitimate distribution networks.<sup>4</sup> The White House Office of National Drug Control Policy<sup>5</sup> states that most synthetic cannabinoids originate overseas.

The EMCDDA reported on adverse consequences of synthetic cannabinoid use:

The adverse health effects associated with synthetic cannabinoids are linked to both the intrinsic nature of the substances and to the way the products are produced. There have been numerous reports of non-fatal intoxications and a small number of deaths associated with their use. As noted above, some of these compounds are very potent; therefore the potential for toxic effects is high. Harm may result from uneven distribution of the substances within the herbal material, result[ing] in products containing doses that are higher than intended. The reported adverse effects of synthetic cannabinoid products include agitation, seizures, hypertension, emesis (vomiting) and hypokalemia (low potassium levels). ...There is some evidence...that synthetic cannabinoids can be associated with psychiatric symptoms, including psychosis. There are also investigations underway in the US regarding links between the use of synthetic cannabinoids... and acute kidney injury and recently, a case report associated the use of the cannabinoid JWH-018 with...strokes in two otherwise healthy males.

<sup>4</sup> <http://www.emcdda.europa.eu/topics/pods/synthetic-cannabinoids>

<sup>5</sup> <https://www.whitehouse.gov/ondcp/ondcp-fact-sheets/synthetic-drugs-k2-spice-bath-salts>

#### 4. Emergency Room Visits Related to Synthetic Cannabinoids

From 2010 through 2011, reported emergency room (ER) visits linked to synthetic cannabinoids increased from 11,406 to 28,531. The vast majority of patients were young males, ages 12 through 20.<sup>6</sup> This is a relatively small number of ER visits, as total drug-related ER visits numbered 2,460,000 in 2011. Of the 2,300,000 ER visits in 2010, approximately 460,000 concerned marijuana and approximately 11,000 concerned synthetic cannabinoids. However, the reported number of synthetic cannabinoid ER visits likely understates actual visits, as testing availability is limited and some medical personnel might not be familiar with the drugs. The ER studies reported that very few patients engaged in follow-up treatment. It is not clear whether ER doctors did not make referrals for additional care, or if patients chose not to seek it.

Very recently, ER visits for synthetic cannabinoids have spiked. As use of these drugs appears to be dropping, the surge in ER visits is likely the result of a dangerous change in chemical composition of the drugs. One who obtains a synthetic cannabinoid can only guess as to its composition and effects.<sup>7</sup>

The New York Times explained in an April 24, 2015 article: “[Synthetic cannabinoids ... typically imported from China by American distributors, come in hundreds of varieties; new formulations appear monthly, with molecules subtly tweaked to try to skirt the DEA's list of illegal drugs as well as drug-detecting urine tests. ... [E]ach new variety can present distinct health risks caused by its underlying chemistry or contaminants in renegade manufacturing facilities.”

#### 5. Synthetic Cannabinoid and Synthetic Stimulant Use is Falling Rapidly Among Young People – Growing Problems with use of Spice by the Homeless

The University of Michigan Monitoring the Future survey first asked 8<sup>th</sup> and 10<sup>th</sup> graders about their use of synthetic [cannabinoids] in 2011. The survey found that in 2012 annual prevalence rates were 4.4% and 8.8%, respectively. Use in all grades dropped in 2013, and the decline was sharp and significant among 12<sup>th</sup> graders. The declines continued into 2014 and were significant for both 10<sup>th</sup> and 12<sup>th</sup> graders; use for all grades declined 40% in 2014 from peak use in 2011. Awareness of the dangers of synthetic cannabinoid was up sharply among 12 graders.<sup>8</sup>

The use of synthetic stimulants among 8, 10<sup>th</sup> and 12 graders was first reported in the survey in 2012, with approximately 1% of students having tried the drug. Use of synthetic stimulants has also declined significantly – down approximately 20% from 2012 to 2014.<sup>9</sup>

The decline in the use of synthetic cannabinoids and synthetic stimulants was preceded by a precipitous drop in the use of the psychedelic salvia divinorum – another drug that gained popularity and some infamy around 2008. Since peak use (of 3.6%) by students in 2011 and 2012, use of salvia declined 61%. Sale or distribution of salvia was made a misdemeanor in

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<sup>6</sup> <http://www.samhsa.gov/data/sites/default/files/SR-1378/SR-1378.pdf>

<sup>7</sup> <http://www.nytimes.com/2015/04/25/health/surge-in-hospital-visits-linked-to-a-drug-called-spice-alarms-health-officials.html>

<sup>8</sup> <http://monitoringthefuture.org/pubs/monographs/mtf-overview2014.pdf>

<sup>9</sup> <http://www.monitoringthefuture.org/pubs/monographs/mtf-overview2014.pdf>

2008, but no penalties exist for possession or use.<sup>10</sup> The decline in use appears to result from negative experiences by users, such as a frightening sensation of falling through space, not criminal penalties.<sup>11</sup>

Numerous recent reports have documented growing use of synthetic cannabinoids by homeless person in cities such as New York and Los Angeles. The drugs are cheap, powerful and often long-lasting, attracting persons with few resources and very harsh and difficult living conditions. Newer versions of the drugs may be particularly dangerous and the drugs are often adulterated.<sup>12</sup>

## **6. Related Bill – SB 139 (Galgiani) adds 14 Chemical Families and Hundreds of Individual Chemicals to the List of Prohibited Synthetic Cannabinoids**

SB 139 (Galgiani) would add 14 chemical families of synthetic cannabinoids and hundreds of individual chemicals to the list of prohibited synthetic cannabinoids. SB 139 appears to be consistent with the current state of knowledge about the range of existing synthetic cannabinoids. The background provided in connection with SB 139 includes model statutes for prohibiting synthetic cannabinoids and synthetic stimulants. The model statute was drafted by the National Alliance for Model State Drug Laws.<sup>13</sup> The chemicals SB 139 appear to be copied from the model statute. The purpose of describing synthetic cannabinoids by class or family is to include any new chemical in each class as a prohibited substance. That is, if a new drug is developed in any of the 14 classes, the chemical is prohibited, regardless of whether the individual chemical is included in the statute. It is not known whether many new synthetic cannabinoid classes can or will be developed. Synthesis of a new class or family of cannabinoids would not be included in the list of prohibited chemicals.

Including chemical families in the list of prohibited chemicals is similar to the use of an analog statute in prosecuting drug crimes. The analog statute provides that a drug that is structurally or functionally similar to an illegal drug illegal to the same extent as the specifically prohibited drug. Structural differences among various synthetic cannabinoids and substantial differences in effects produced by synthetic cannabinoids have hindered use of analog statutes or generic definitions of synthetic cannabinoids, as the only commonality many of these drugs may have is that they are all cannabinoid agonists, meaning the chemicals bind to cannabinoid receptors in the brain. It is concerning that researchers have begun to find evidence that illicit drug makers are developing chemicals that bind to multiple receptors in the brain, likely making testing and prohibition more difficult. Further, once a synthetic cannabinoid is discovered, it has been difficult to produce pure samples of the drug that are necessary for testing drugs that have been seized from potential criminal defendants.

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<sup>10</sup> <http://www.monitoringthefuture.org/pubs/monographs/mtf-overview2014.pdf>

<sup>11</sup> [http://www.drugpolicy.org/sites/default/files/FactSheet\\_Salvia.pdf](http://www.drugpolicy.org/sites/default/files/FactSheet_Salvia.pdf)

<sup>12</sup> <http://www.vice.com/read/policing-synthetic-marijuana-on-las-skid-row-731>

<sup>13</sup> <http://www.namsdl.org/about.cfm>. According to its website, NAMSDL is funded by Congress and coordinates policy initiatives with the Office of National Drug Control Policy.

## 7. Argument in Support

Consortium Management Group argues in support of this bill:

Synthetic cannabinoids in the last decade have found a substantial market, especially among young people who are looking for an arguably legal alternative to marijuana. Sold under familiar brand names such as Spice, Scooby Snax and Ks, they seek to mimic the effects of THC in natural cannabinoids. However, they are toxic and unpredictable, and thus more dangerous than cannabis. The deadly impact is getting worse. Deaths have tripled in the first half of 2015 compared to the first half of 2014. During the same period, [synthetic cannabinoid-related] calls to poison centers grew by 229%. These harms are further highlighted by the comparable safety of natural cannabinoids. Tragic consequences of use of these drugs have led to new federal and state laws that ban synthetic cannabinoids. However, manufacturers have tried to stay a step ahead of the law by changing the chemicals so that the new compound is legal. In some cases, these changes have made synthetic cannabinoids more unpredictable and dangerous. SB 1036 endeavors to stay ahead of the manufacturers by adding synthetic cannabinoids to current law that makes analogs of specified controlled substances subject to the same prohibitions as the controlled substances themselves.

CMG works with Caliva, a major medical marijuana dispensary in San Jose. CMG strongly supports new laws enacted to create structure for and ensure oversight of the growing medical cannabis industry. A goal of this new statutory scheme is to ensure protection for medical marijuana patients. Allowing the perpetuation of an unpredictable, life-threatening synthetic compound that is inappropriately characterized as an alternative to cannabis is antithetical to that goal.

## 8. Argument in Opposition

The Drug Policy Alliance argues in opposition:

DPA opposes punishing people for simple possession of a controlled substance. There is no evidence that criminalizing drug possession reduces drug use or harm. Forty-five years of the war on drugs demonstrates that prohibition and punishment have not reduced drug use, but have exacerbated associated harms.

California criminalized possession of specified synthetic cannabinoids in legislation that became effective on January 1st of this year. Laws criminalizing synthetic compounds have not contributed to decreasing the already low rates of use anywhere in the United States. And there is no urgent need to widen the net of punishment in California. On the contrary, criminalization can exacerbate health risks by pushing risky behavior underground where people who need help the most are the least likely to get it. This is particularly true for synthetic cannabinoid compounds which can be easily acquired through online retailers, many based in foreign countries – a threat that will not be removed by California prohibitions. Moreover, expanding drug prohibition to include new synthetic

drugs will result in significantly more wasteful drug war spending without decreasing rates of distribution or use.

Rather than enact more prohibitions, the state and federal governments should fund research to better understand the potential harms of synthetic cannabis and educate the public. Comprehensive education and prevention are working to greatly reduce tobacco use, a drug that has contributed to more deaths than alcohol and illicit drugs combined. Lawmakers across the country are calling for a public health, rather than criminal justice, approach to dealing with illicit drugs. AB 1036 (Hernandez) takes the wrong approach by perpetuating the criminalization of a health issue.

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