

# Salvia divinorum

## Profile

*Salvia divinorum*, also known as *S. divinorum* or Salvia, is a hallucinogenic plant native to the northeastern Sierra Mazateca mountain region of Mexico, where the native Mazatecs have used it for centuries as a healing and divining tool. Though this is the only known location where this perennial herb grows naturally, Salvia is cultivated in some areas of the United States.<sup>1</sup> *Salvia divinorum* is not likely to be found at a local nursery although it is one among many of the cooking and medicinal herbs in the mint family. It is also one among many that share the genus name *Salvia*; for example, *Salvia officinalis* is also known as common sage.<sup>2</sup> The psychoactive component (that which produces the hallucinogenic effects) of *Salvia divinorum*, Salvinorin A, is the most potent naturally occurring hallucinogen.<sup>3</sup> Currently, neither *Salvia divinorum* nor its active ingredient Salvinorin A are listed as controlled substances in the United States, though there are efforts to criminalize Salvia and its active ingredients and classify them as Schedule I controlled substances.<sup>4</sup> To date, Australia is the only country that has criminalized *Salvia divinorum* and its active ingredients.<sup>5</sup>

## History

The first recorded mention of Salvia was made in 1938 by Jean B. Johnson, who heard of Mazatecs making a tea from the leaves of “hierba Maria,” which induced visions in users. In 1952, Roberto G. Weitlaner, Johnson’s father-in-law, reported the preparation of “yerba de Maria.”<sup>6</sup> R. Gordon Wasson and Albert Hofmann acquired the first specimen of *Salvia divinorum* from the Mazatecs in 1962; they described it as “a less desirable substitute” for hallucinogenic mushrooms.<sup>7</sup>

It was not until August 2002 that researchers discovered that *Salvia divinorum* acts at the kappa opiate receptor (KOR) site, where much of human perception is regulated. This puts *Salvia divinorum* in a class of drugs known as KOR agonists, which are thought to play psychotherapeutic roles in perception-altering diseases such as schizophrenia and Alzheimer’s disease.<sup>8</sup>

## Methods of Use

Only when enough of Salvia’s highly active compound, Salvinorin A, is absorbed through the oral mucosa and into the blood stream can a psychoactive effect be produced.<sup>9</sup> There are several methods of ingesting Salvia with varying durations of hallucinogenic effects.

- Dried leaves of Salvia can be smoked like marijuana, in a bong, pipe, or as a joint, with effects lasting up to 15 minutes. Fresh leaves of Salvia can be chewed and swallowed or chewed as a quid.<sup>10</sup>
- When chewed as a quid, the leaves of Salvia produce extractions of Salvinorin A before the leaves are removed from the mouth. The extractions are absorbed

- through the oral mucosa and produce visual hallucinations, lasting 1 to 2 hours; the longer the herb remains in the mouth, the stronger the effect will be.<sup>11</sup>
- Salvinorin A extracts can be mixed in a drink or vaporized and inhaled
  - When Salvia's leaves are crushed, the extracted Salvinorin A can be mixed with water to make a drink. Since Salvinorin A is deactivated by the gastrointestinal system before entering the blood stream this method may produce a more moderate effect than other methods.<sup>12</sup>
  - Salvinorin A can also be vaporized and inhaled – Salvinorin A is heated on a piece of tin foil and the vapors are inhaled through a glass pipe.<sup>13</sup>

### **Psychological and Physical Effects**

Recent research suggests that *Salvia divinorum* acts at the kappa opiate receptor (KOR) site of the brain where much of human perception is regulated.<sup>14</sup> Although the Mazatec Indians have been using this herb for centuries with no obvious ill effects, it is still unclear whether *Salvia divinorum* causes long-term effects on the brain or on the rest of the body. There have been no reports of health problems or hospitalizations as a result of Salvia use, few dangers related to its use have been identified, and no evidence exists that it is addictive.<sup>15</sup>

Although the dosage ingested and the method of ingestion affects the user's experience, some common effects include:

- Intense hallucinations, such as sensations of traveling through time and space, of floating or flying; sensations of twisting and spinning, heaviness or lightness of the body, and "soreness."<sup>16</sup>
- Less intense effects (that occur only when the eyes are closed) include visual hallucinations of various patterns and shapes. The hallucinogenic visions produced by this herb terminate when interrupted by noise or light.<sup>17</sup>

Physical effects include:<sup>18</sup>

- Dizziness
- Nausea
- Lack of coordination
- Slurred speech and awkward sentence patterns
- Decreased heart rate
- Chills

### **Terminology<sup>19</sup>**

Many of the names used for *Salvia divinorum* indicate how the Mazatecs honor this herb for its healing and divination qualities; they believe it is the incarnation of the Virgin Mary. It has also been reported that visions of a woman are common during hallucinations. The genus name, *Salvia*, comes from the Latin word, *salvare*—meaning "to save," while the specific name, *divinorum*, means "of the seers."

*English*

- Leaves (or herb) of the Shepherdess
- Leaves of Mary, the Shepherdess
- The Female
- Sage of the Seers
- Magic Mint
- Diviner's Mint
- Diviner's Sage

### Spanish

- Hojas de la Pastora
- Hojas de Maria Pastora
- Le hembra
- Hierba (yerba) Maria
- La Maria

### Mazatec

- Ska Pastora
- Ska Maria Pastora

### Links

- [DEA Drugs and Chemicals of Concern: Salvia Divinorum and Salvinorum A](#)
- [NDIC Information Bulletin: Salvia divinorum](#)

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<sup>1</sup> Rovinsky, S.A., and Cizadlo, G.R. (1998). Salvia divinorum Epling et Jativa-M. (Labiatae): An Ethnopharmacological Investigation. *The McNair Scholarly Review*, 3: 142-156.

<sup>2</sup> Boire, R.G., Russo, E., Fish, A.R., Bowman, J. (2001). Salvia divinorum: Information concerning the plant and its active principle. *The Center for Cognitive Liberty & Ethic (CCLE)*; Valdes, L.J., Diaz, J.L., and Paul, A.G. (1983). Ethnopharmacology of Ska Maria Pastora (Salvia Divinorum, Epling and Jativa-M.). *Journal of Ethnopharmacology*, 7: 287-312.

<sup>3</sup> Ott, J. (1996). Salvia divinorum Epling et Jativa. *Eleusis*, 4: 31-39; Valdes, L.J. 1994. Salvia divinorum and the Unique Diterpene Hallucinogen, Salvinorin (Divinorin) A. *Journal of Psychoactive Drugs*, 26(3): 277-283.

<sup>4</sup> Boire, R.G., Russo, E., Fish, A.R., Bowman, J. (2001).

<sup>5</sup> Epstein, R.J. (2002). Mexican Plant is Used as Legal Marijuana Alternative. *Wisconsin State Journal*, A1.

<sup>6</sup> Rovinsky, S.A., and Cizadlo, G.R. (1998); Valdes, L.J., Diaz, J.L., and Paul, A.G. (1983).

<sup>7</sup> Wasson, R. Gordon. (1962). A new Mexican psychotropic drug from the mint family. *Botanical Museum Leaflets Harvard University*, 20(3): 77-84.

<sup>8</sup> Boire, R.G., Russo, E., Fish, A.R., Bowman, J. (2001); Roth, B.L., Baner, K., Westkaemper, R., Siebert, D., Rice, K.C., Steinberg, S., Ernsberger P., Rothman, R.B. (2002). Salvinorin A: A potent naturally occurring nonnitrogenous kappa opioid selective agonist. *Proc Natl Acad Sci.*: 99(18): 11934-11939.

<sup>9</sup> Siebert, D.J. (1994). Salvia divinorum and Salvinorin A: new pharmacological findings. *Journal of Ethnopharmacology*, 34: 53-56.

<sup>10</sup> Ott, J. (1996); Valdes, L.J. (1994).

<sup>11</sup> Ott, J. (1996); Siebert, D.J. (1994).

<sup>12</sup> Ibid.

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<sup>13</sup> Ott, J. (1996); Siebert, D.J. (1994); Valdes, L.J. (1994).

<sup>14</sup> Roth, B.L., Baner, K., Westkaemper, R., Siebert, D., Rice, K.C., Steinberg, S., Ernsberger P., Rothman, R.B. (2002).

<sup>15</sup> Boire, R.G., Russo, E., Fish, A.R., Bowman, J. (2001).

<sup>16</sup> Rovinsky, S.A., and Cizadlo, G.R., 1998; Valdes, L.J., 1994; Valdes, L.J., Diaz, J.L., and Paul, A.G. (1983).

<sup>17</sup> Valdes, L.J., Diaz, J.L., and Paul, A.G. (1983).

<sup>18</sup> Valdes, L.J. (1994); Valdes, L.J., Diaz, J.L., and Paul, A.G. (1983).

<sup>19</sup> Boire, R.G., Russo, E., Fish, A.R., Bowman, J. (2001); Ott, J. (1996); Rovinsky, S.A., and Cizadlo, G.R. (1998); Valdes, L.J., 2001, The Early History of *Salvia divinorum*. *The Entheogen Review*, 10(3): 73-75; Valdes, L.J., Diaz, J.L., and Paul, A.G. (1983); Wasson, R. Gordon. (1962).