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1 VITEX (VITEX AGNUSCASTUS): A PROMISING MEDICINAL PLANT 2 FOR
WOMEN'S REPRODUCTIVE HEALTH 3 4 Abstract: 5 Vitex agnus-castus (family:
Lamiaceae), commonly known as chaste tree or monk's pepper, 6 is a well-known
medicinal plant traditionally used for the management of various 7 gynecological and
reproductive disorders in women. The plant has gained considerable 8 scientific attention
due to its role in hormonal regulation, particularly in conditions associated 9 with menstrual
irregularities, premenstrual syndrome (PMS), mastalgia, and 10 hyperprolactinemia. This
review comprehensively analyzes the traditional uses, 11 phytochemical constituents,
pharmacological properties, and clinical relevance of Vitex 12 agnus-castus in women's
reproductive health. Available evidence suggests that the 13 therapeutic effects of this
plant are largely mediated through dopaminergic mechanisms that 14 influence prolactin
secretion and restore hormonal balance. The review highlights the 15 potential of Vitex
agnus-castus as a safe and effective herbal remedy and emphasizes the need 16 for
further well-designed clinical trials to strengthen its integration into evidence-based 17
women's healthcare. 18 Keywords: Vitex agnus-castus, women's health, reproductive
disorders, phytotherapy, 19 hormonal balance 20 1. Introduction 21 Medicinal plants have
played a pivotal role in the healthcare systems of various cultures since 22 ancient times.
In recent decades, there has been a renewed global interest in herbal medicines 23 due to
their perceived safety, cost-effectiveness, and holistic mode of action. Among the 24
numerous medicinal plants used for women's health, Vitex agnus-castus occupies a 25
prominent position. 26 Vitex agnus-castus is a deciduous shrub or small tree native to the
Mediterranean region and 27 parts of Central Asia. Traditionally, it has been used to treat
female reproductive disorders, 28 regulate menstrual cycles, and alleviate symptoms
associated with hormonal imbalance. 29 Modern pharmacological and clinical studies have
begun to validate many of these traditional 30 claims, making Vitex agnus-castus an
important subject of contemporary research in 31 phytomedicine. 32 33 34 35

Botanical Description and Distribution: 36 Vitex agnus-castus is a perennial shrub

belonging to the family Lamiaceae. It grows up to 3–5 37 meters in height **2** and is characterized by palmately compound leaves with 5–7 lanceolate 38 leaflets. The plant bears fragrant violet to pale blue flowers arranged in terminal panicles, 39 followed by small, dark-colored drupes resembling peppercorns. 40 The plant is widely distributed in the Mediterranean basin, Southern Europe, West Asia, and 41 parts of India. It thrives in riverbanks, coastal regions, and well-drained soils under warm 42 climatic conditions.

43 44 Traditional and Ethnomedicinal Uses: 45 In traditional systems of medicine such as Ayurveda, Unani, and European folk medicine, 46 *Vitex agnus-castus* has been extensively used for women’s reproductive health. The 47 driedfruits are the most commonly used plant part. 48 Traditionally, the plant has been employed for:

49 Regulation of menstrual cycles 50 **1** Management of premenstrual syndrome (PMS) 51 Relief from mastalgia (breast pain) 52 Treatment of infertility associated with luteal phase defects 53 Reduction of menopausal symptoms 54 The name —chaste treell originates from its historical use in suppressing libido, particularly 55 among monks, reflecting its influence on hormonal pathways. 56 57 2. Objectives: 58 The present review was undertaken with the following objectives: 59 60 1. To compile and analyze traditional and ethnomedicinal uses of *Vitex agnus-castus* 61 related to women’s reproductive health. 62 2. To summarize the major phytochemical constituents responsible for its therapeutic 63 activity. 64 3. To review pharmacological and clinical evidence supporting its role in managing 65 reproductive and hormonal disorders. 66 4. To discuss the possible mechanisms of action involved in hormonal regulation. 67 5. To identify research gaps and future prospects for the use of *Vitex agnus-castus* in 68 evidence-based medicine. 69 70 71

3. Materials and Methods: 72 This review is based on an extensive survey of published literature related to *Vitex agnus*73 *castus*. Relevant research articles, review papers, clinical trial reports, and regulatory 74 documents were collected from scientific databases such as PubMed, Google Scholar, 75 ScienceDirect, and Springer. 76 Keywords including

—Vitex agnus-castus, —women's reproductive health, —premenstrual syndrome, —mastalgia, —hyperprolactinemia, and —herbal medicine were used for literature retrieval. Articles published in English **1 with a focus on** phytochemistry, 79 pharmacology, and clinical applications were considered. Duplicate and irrelevant studies 80 were excluded. The collected literature was critically analysed and organised into thematic 81 headings. 82 83 4. Results and Discussion: 84 The reviewed literature clearly indicates that Vitex agnus-castus possesses significant 85 therapeutic potential in managing women's reproductive health disorders. The presence of 86 bioactive compounds such as iridoid glycosides, flavonoids, and diterpenoids contributes to 87 its multifaceted pharmacological effects. 88 One of the most important findings across clinical studies is the plant's dopaminergic 89 activity, which leads to suppression of prolactin secretion from the pituitary gland. Elevated 90 prolactin levels are commonly associated with menstrual irregularities, mastalgia, and 91 infertility. By normalizing prolactin levels, Vitex agnus-castus helps restore hormonal 92 balance and improve reproductive function. 93 Clinical trials have demonstrated significant improvement in symptoms of premenstrual 94 syndrome, including breast tenderness, mood changes, headache, and bloating. Compared to 95 placebo, standardized extracts of Vitex agnus-castus showed superior efficacy with minimal 96 side effects. Its role in managing cyclic mastalgia has also been well documented. 97 Although evidence regarding its effectiveness in polycystic ovary syndrome (PCOS) is still 98 limited, preliminary findings suggest that Vitex agnus-castus may support luteal phase 99 function and improve menstrual regularity. The overall safety profile of the plant further 100 supports its use as a complementary or alternative therapeutic option. 101 The results discussed in this review strongly support traditional claims and highlight the 102 relevance **1 of Vitex agnus-castus in** modern phytotherapy. However, variability in extract 103 composition and dosage across studies emphasizes the need for standardization and large 104 scale randomized controlled trials. 105

Phytochemical Constituents 106 Phytochemical investigations of Vitex agnus-castus have

revealed the presence of a wide 107 range of bioactive compounds. Major constituents include: 108 Iridoid glycosides:agnuside, aucubin 109 Flavonoids:casticin, vitexin, isovitexin 110 Diterpenoids:vitexilactone 111 Essential oils:limonene, cineole, sabinene 112 These compounds are believed to contribute synergistically to the plant's pharmacological 113 activities, particularly its endocrine-modulating effects. 114 115 Pharmacological Activities Relevant to Women's Health: 116 Hormonal Regulation: 117 **1 One of the most** significant pharmacological properties of Vitex agnus-castus is its ability to 118 regulate hormonal balance. The plant exhibits dopaminergic activity by binding to dopamine 119 D2 receptors in the pituitary gland, leading to reduced prolactin secretion. This mechanism is 120 particularly beneficial in conditions such as hyperprolactinemia, **1 which is associated with** 121 menstrual irregularities and infertility. 122 Premenstrual Syndrome (PMS): 123 Several clinical studies have **demonstrated the effectiveness of Vitex agnus-castus in** 124 alleviating PMS symptoms, including mood swings, irritability, breast tenderness, and 125 bloating. The reduction in prolactin levels 126 and modulation of estrogen-progesterone 127 balance **2 play a key role in** symptom relief. 128 Mastalgia (Breast Pain): 129 Vitex agnus-castus has shown promising 130 results **in the treatment of cyclic** 131 mastalgia. Regular administration of 132 standardized extracts has been associated 133 with significant pain reduction, making it 134 a preferred herbal alternative to synthetic drugs. 135 Polycystic Ovary Syndrome (PCOS): 136 Although evidence is still emerging, Vitex agnus-castus has been reported to improve 137 menstrual regularity in women with PCOS by supporting luteal phase function and hormonal 138 balance. 139 140 141

142 Tables: 143 Table 1. Major Phytochemical Constituents of Vitex agnus-castus
144 145 PHYTOCHEMICAL GROUP MAJOR COMPOUNDS REPORTED BIOLOGICAL
ROLE Iridoid glycosides Agnuside, Aucubin Hormonal regulation, antioxidant activity
Flavonoids Casticin, Vitexin, Isovitexin Anti-inflammatory, estrogenic modulation
Diterpenoids Vitexilactone Dopaminergic activity, prolactin suppression Essential oils

Cineole, Limonene, Sabinene Anti-spasmodic, aromatic properties 146 Table 2. Clinical Evidence **1** of *Vitex agnus-castus* in Women's Reproductive Disorders 147 CONDITION STUDY TYPE KEY FINDINGS Premenstrual Syndrome (PMS) Randomized clinical trials Significant reduction in breast pain, mood swings, and irritability Mastalgia Controlled clinical studies Effective reduction of cyclic breast pain Hyperprolactinemia Observational & clinical trials Decreased prolactin levels via dopaminergic action PCOS Preliminary clinical studies Improved menstrual regularity and luteal phase support 148 Table 3. Mechanisms of Action of *Vitex agnus-castus* 149 TARGET SITE MECHANISM PHYSIOLOGICAL OUTCOME Pituitary gland, dopamine D2 receptor agonism Reduced prolactin secretion Pituitary gland, dopamine D2 receptor agonism Hypothalamic–pituitary Hormonal modulation Balanced estrogen–

axis progesterone ratio Mammary tissue Prolactin inhibition Relief from mastalgia 150 Figures: 151 152 Figure 1. Morphology of *Vitex agnus-castus*. 153 Figure 2. **1** **Mechanism of Action of *Vitex agnus-castus* in Women's Reproductive Health.** 154 155 5. Conclusion: 156 This review clearly establishes *Vitex agnus-castus* as a scientifically validated, reliable, and 157 highly promising medicinal plant **for the management of** women's reproductive health 158 disorders. Both traditional knowledge and contemporary clinical evidence strongly support its 159 effectiveness in conditions such as menstrual irregularities, premenstrual syndrome (PMS), 160 mastalgia, and hyperprolactinemia, which are largely associated with hormonal imbalance. 161 The therapeutic efficacy of *Vitex agnus-castus* is primarily attributed to its rich 162 phytochemical composition, including iridoid glycosides, flavonoids, and diterpenoids, which 163 exert dopaminergic activity at the pituitary level and regulate prolactin secretion. Through 164 modulation of the hypothalamic–pituitary–ovarian axis, the plant helps restore hormonal 165

equilibrium, improve luteal phase function, and alleviate a wide range of gynaecological 166 symptoms. 167 These findings highlight the potential of *Vitex agnus-castus* as a safe,

effective, and well-tolerated over-the-counter herbal alternative to prescription medications for PMS management. Its favourable safety profile, clinical acceptance, and patient compliance further strengthen its role in integrative, evidence-based women's healthcare. Nevertheless, standardized formulations and well-designed, large-scale clinical trials remain essential to optimize dosage, confirm long-term safety, and facilitate wider clinical adoption.

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