



WORLD'S BEST ASHWAGANDHA

FROM THE ASHWAGANDHA EXPERTS. THAT'S ALL WE DO.

Scientific Studies



THE MOST CLINICALLY STUDIED ASHWAGANDHA ROOT EXTRACT IN THE WORLD

- Industry leader in clinical trials and research investigating the effectiveness of Ashwagandha.
- Largest pool of research studies with 50 studies: 24 published studies, 9 additional studies completed and in peer review, and 17 ongoing studies.
- Following the gold standard: Double-blind, Placebo-controlled, Randomized studies.
- Our trials are on healthy populations to mirror our mainstream customer base.
- Our publications are of academia standard, all in PubMed-indexed medicine journals.
- The principal investigators are leading researchers with established publication records.

For Stress and Anxiety



OBJECTIVE	DOSE	DURATION	NO. OF PARTICIPANTS
To evaluate the safety and efficacy of KSM-66 Ashwagandha in reducing stress and anxiety and in improving the general well-being of adults under stress.	300mg Twice daily	8 Weeks	64

Chandrasekhar, K., Kapoor, J., & Anishetty, S. (2012) A Prospective, Randomized Double-blind, Placebo-controlled Study of safety and efficacy of a high-concentration full-spectrum extract of Ashwagandha root in reducing stress and anxiety in adults. Indian Journal of Psychological Medicine, 34(3), 255-262.

RESULTS:

- A 44% reduction in **Perceived Stress Score** ($p < 0.001$).
- A 27.9% reduction in **Serum Cortisol Level** ($p < 0.05$).
- A 72.3% reduction in total **General Health Questionnaire - 28 scores** ($p < 0.001$). The **GHQ-28 domain scores** for somatic, anxiety and insomnia, social dysfunction, and severe depression reduced significantly by 76.1%, 69.7%, 68.1%, and 79.3% respectively ($p < 0.001$).
- A 71.6% reduction in total **Depression Anxiety Stress Scales Score** ($p < 0.001$). The DASS scores for depression, anxiety, and stress domains reduced significantly by 77.0%, 75.6%, and 64.2% respectively ($p < 0.001$).

For Stress and Weight Management



OBJECTIVE	DOSE	DURATION	NO. OF PARTICIPANTS
To evaluate the safety and efficacy of KSM-66 Ashwagandha in reducing stress and stress-related food cravings in adults.	300mg Twice daily	8 Weeks	50

Choudhary, D., Bhattacharyya, S., & Joshi, K. (2017). Body Weight Management in Adults Under Chronic Stress Through Treatment with Ashwagandha Root Extract: A Double-Blind, Randomized, Placebo-Controlled Trial. Journal of evidence-based complementary & alternative medicine, 22(1), 96-106.

RESULTS:

- A 32.7% reduction in **Perceived Stress Score** ($p < 0.05$).
- **Food Cravings Questionnaire Scores** for Planning, Positive and Negative reinforcement, Lack of control, Emotion, and Environment domains reduced significantly ($p < 0.05$).
- A 22.2% decrease in **Serum Cortisol Levels** ($p < 0.05$).
- A 3% and 2.9% reduction in **Body Weight** and **Body Mass Index** respectively ($p < 0.05$).
- A 19.2% increase in **Oxford Happiness Questionnaire Scores** ($p < 0.05$).
- A 20.4% and 15.8% in **Three Factor Eating Questionnaire Scores** for “Uncontrolled” and “Emotional Eating behavior” respectively ($p < 0.05$).

For Stress, Sleep and Anxiety



OBJECTIVE	DOSE	DURATION	NO. OF PARTICIPANTS
To evaluate the safety and efficacy of KSM-66 Ashwagandha in reducing stress and anxiety and in improving sleep quality in adults.	125mg / 300mg Twice daily	8 Weeks	58

Salve, J., Pate, S., Debnath, K., & Langade, D. (2019). Adaptogenic and Anxiolytic Effects of Ashwagandha Root Extract in Healthy Adults: A Double-blind, Randomized, Placebo-controlled Clinical Study. *Cureus*, 11(12), e6466.

RESULTS:

- A 33.7% and 38.3% reduction **Perceived Stress Scores** for 250mg/day and 600mg/day respectively (p<0.001).
- A 16.4% and 32.6% reduction in **Serum Cortisol Levels** for 250mg/day and 600mg/day respectively.
- A 13.0% and 16.3% decrease in **Hamilton Anxiety Scale Scores** for 250mg/day and 600mg/day (p < 0.05) respectively.
- A 35.2% and 46.0% decrease in **Sleep Quality Scores** for 250mg/day and 600mg/day respectively resulting in greater quality of sleep.

For Sleep and Anxiety



OBJECTIVE	DOSE	DURATION	NO. OF PARTICIPANTS
To evaluate the safety and efficacy of KSM-66 Ashwagandha supplementation on participants with insomnia and anxiety.	300mg Twice daily	10 Weeks	60

Langade, D., Kanchi, S., Salve, J., Debnath, K., & Ambegaokar, D. (2019). Efficacy and Safety of Ashwagandha (Withania somnifera) Root Extract in Insomnia and Anxiety: A Double-blind, Randomized, Placebo-controlled Study. *Cureus*, 11(9), e5797.

RESULTS:

- Sleep Actigraphy Parameters:
 - 30.3% decrease in **Sleep Onset Latency** (p<0.002)
 - 22.5% decrease in **Wake After Sleep Onset**
 - 19.0% increase in **Total Sleep Time**
 - 10.3% increase in **Sleep Efficiency** (p<0.001)
 - 7.9% increase in **Total Time in Bed**
- A 30.0% decrease in the **Pittsburgh Sleep Quality Index**, indicating better sleep (p<0.0001).
- A 21.6% reduction in anxiety assessed by **Hamilton Anxiety Scale**.
- A significant increase in **Mental Alertness on Rising Score** from 10.3% at baseline to 69.2% at the end of the study.
- A significant increase in **Sleep Quality** (p<0.002).

For Sleep and Anxiety



OBJECTIVE	DOSE	DURATION	NO. OF PARTICIPANTS
To evaluate the safety and efficacy of KSM-66 Ashwagandha supplementation on improvement in sleep in both healthy volunteers and insomnia patients compared to the placebo.	300mg Twice daily	10 Weeks	80

Langade, D., Thakare, V., Kanchi, S., & Kelgane, S. (2020). Clinical evaluation of the pharmacological impact of ashwagandha root extract on sleep in healthy volunteers and insomnia patients: A Double-Blind, Randomized, Parallel-group, Placebo-controlled Study. *Journal of Ethnopharmacology*: 264:113276.

RESULTS:

• Sleep Actigraphy Parameters:

- o A 15.5% and 33.5% decrease in **Sleep Onset Latency** in healthy and insomnia subjects respectively ($p < 0.0001$)
- o A 29.3% and 22.7% decrease in **Wake After Sleep** onset in healthy and insomnia subjects respectively ($p < 0.0001$)
- o A 3.2% and 11.3% increase in **Sleep Efficiency** in healthy and insomnia subjects respectively ($p < 0.0001$)
- A 22.2% and 26.2% decrease in the **Pittsburgh Sleep Quality Index Scores** in both healthy and insomnia subjects respectively ($p < 0.0001$), indicating better sleep.
- A 29.2% decrease in the **Hamilton Anxiety Scale Scores** for insomnia subjects ($p < 0.0001$).
- 17.9% and 36.0% decrease in **Mental Alertness on Rising Scores** for healthy and insomnia subjects respectively ($p < 0.0001$).
- A 31.6% and 45.3% increase in **Sleep Quality** in both healthy and insomnia subjects respectively.

For Sleep and General Wellbeing in Senior Citizens



OBJECTIVE	DOSE	DURATION	NO. OF PARTICIPANTS
To evaluate the safety and efficacy of KSM-66 Ashwagandha supplementation on the improvement of general well-being and sleep in elderly participants.	300mg Twice daily	12 Weeks	50

Kelgane, S. B., Salve, J., Sampara, P., & Debnath, K. (2020). Efficacy and Tolerability of Ashwagandha Root Extract in the Elderly for Improvement of General Well-being and Sleep: A Prospective, Randomized, Double-blind, Placebo-controlled Study. *Cureus*, 12(2), e7083.

RESULTS:

- A 24.2%, 22.4%, 18.9%, 5.6%, and 9.8% increase in **WHO-QoL** scores of global, physical, psychological, social relationship, and environmental domains respectively ($p < 0.0001$).
- A 53.1% reduction in **Mental Alertness on Rising Score** indicating increased alertness ($p < 0.05$).
- A 57.1% reduction in **Sleep Quality Score** indicating an increase in the quality of sleep ($p < 0.0001$).
- A 33.5% reduction in **Sleepiness Scale**, indicating improved and better quality of sleep.

For Cardiorespiratory Endurance



OBJECTIVE	DOSE	DURATION	NO. OF PARTICIPANTS
To evaluate the safety and efficacy of KSM-66 Ashwagandha supplementation in improving cardiorespiratory endurance in healthy athletic adults.	300mg Twice daily	12 Weeks	49

Choudhary, B., Shetty, A., & Langade, D. G. (2015). Efficacy of Ashwagandha (*Withania somnifera* [L.] Dunal) in improving cardiorespiratory endurance in healthy athletic adults. *Ayu*, 36(1), 63–68.

RESULTS:

- A 11.3% and 13.6% increase at end of 8 and 12 weeks in maximal oxygen consumption (**VO2 max**) respectively (p<0.001).
- 14.8%, 19.7%, 21.6%, and 9.7% increase in **WHO-QoL** scores of Physical Health, Psychological, Social Relationship, and Environmental domains respectively (p<0.05).

For Cardiorespiratory Endurance and Recovery



OBJECTIVE	DOSE	DURATION	NO. OF PARTICIPANTS
To evaluate the safety and efficacy of KSM-66 Ashwagandha supplementation in improving cardio respiratory endurance and recovery in healthy athletic adults.	300mg Twice daily	8 Weeks	50

Tiwari, S., Gupta, S. K., & Pathak, A. K. (2021). A Double-blind, Randomized, Placebo-controlled trial on the effect of Ashwagandha (*Withania somnifera* Dunal.) root extract in improving cardiorespiratory endurance and recovery in healthy athletic adults. *Journal of Ethnopharmacology*, 113929.

RESULTS:

- A 16.4% increase in maximal oxygen consumption, **VO2 max** (p=0.0074).
- A 37.4%, 60.7%, and 59.2% increase in the **Recovery-Stress Questionnaire Scores** of general stress, fatigue, and general well-being domains respectively (p<0.0001).
- A 6.7% increase in **Total Quality Recovery Score** (p<0.0001).
- A 45.2% decrease in **Daily Analysis of Life Demands for Athletes' Scores** (p<0.0001).
- A 10.6% increase in the **Antioxidant Level**.



For Muscle Strength, Recovery and Testosterone

OBJECTIVE	DOSE	DURATION	NO. OF PARTICIPANTS
To evaluate the safety and efficacy of KSM-66 Ashwagandha on muscle strength, mass, and recovery, as an adjuvant to the resistance training program and ergogenic aid.	300mg Twice daily	8 Weeks	50

Wankhede, S., Langade, D., Joshi, K., Sinha, S. R., & Bhattacharyya, S. (2015). Examining the effect of Withania somnifera supplementation on muscle strength and recovery: a randomized controlled trial. *Journal of the International Society of Sports Nutrition*, 12, 43.

RESULTS:

- A 15.3% increase in **Serum Testosterone** ($p < 0.05$).
- A 138.7% and 52% increase in **Muscle Strength** for bench press and leg extension exercise respectively ($p < 0.05$).
- A 8.1%, 17.1%, and 3.3% increases in **Muscle Size** for thigh, arm, and chest respectively ($p < 0.05$).
- A 3.5% reduction in **Average Body Fat** ($p < 0.05$).
- A Significant reduction in **Serum Creatine Kinase Level** indicating faster recovery.



For Muscle Strength, Recovery and Testosterone

OBJECTIVE	DOSE	DURATION	NO. OF PARTICIPANTS
To evaluate the safety and efficacy of KSM-66 Ashwagandha as an adjuvant to resistance training and on muscle strength, mass, endurance, testosterone and recovery and quality of life in healthy athletic adults.	300mg Twice daily	8 Weeks	80

Effect of Ashwagandha root extract on muscle strength improvement and recovery and impact on resistance training: A randomized, placebo-controlled, double-blind clinical study (Under Peer Review)

RESULTS:

- A 8.1% and 10.1% increase in **Free Testosterone** and **Total Testosterone** in men ($p < 0.001$ and $p < 0.0001$).
- A 23.5% and 22.8% increase in **Bench Press** in both males and females respectively and a 15% and 9.9% increase in **Leg Extension** exercise for men and women respectively.
- An overall 5.2%, 3.5%, and 4.1% increase in **Muscle Size** for arm ($p < 0.0001$), thigh, and chest respectively.
- An overall 1.7% reduction in **Average Body Fat**.
- A 9.5% and 7.1% increase in maximal oxygen consumption (**VO2 Max**) in both men and women respectively ($p < 0.0001$).
- An overall 7.2% reduction in the **Serum Creatinine Phosphokinase** indicating faster recovery ($p < 0.0001$).

For Male Fertility and Testosterone



OBJECTIVE	DOSE	DURATION	NO. OF PARTICIPANTS
To evaluate the safety and efficacy of KSM-66 Ashwagandha in improving seminal parameters and male sexual function in otherwise healthy men.	225mg Thrice daily	12 Weeks	46

Ambiye, V. R., Langade, D., Dongre, S., Aptikar, P., Kulkarni, M., & Dongre, A. (2013). Clinical Evaluation of the Spermatogenic Activity of the Root Extract of Ashwagandha (*Withania somnifera*) in Oligospermic Males: A Pilot Study. Evidence-based complementary and alternative medicine : eCAM, 2013, 571420.

RESULTS:

- A 167% increase in **Sperm Concentration** ($p < 0.001$).
- A 53% increase in **Semen Volume** ($p < 0.001$).
- A 57% increase in **Sperm Motility** ($p < 0.001$).
- A 17% increase in **Serum Testosterone Level** ($p < 0.001$).
- A 34% improvement in **Serum Luteinizing Hormone** ($p < 0.001$).

For Sexual Wellness in Men



OBJECTIVE	DOSE	DURATION	NO. OF PARTICIPANTS
To evaluate the safety and efficacy of KSM-66 Ashwagandha on the sexual wellness and testosterone of healthy men.	300mg Twice daily	8 Weeks	50

Chauhan, S., Srivastava, M. K., & Pathak, A. K. (2022). Effect of standardized root extract of ashwagandha (*Withania somnifera*) on well-being and sexual performance in adult males: A Randomized Controlled trial. Health science reports, 5(4), e741.

RESULTS:

- The **Derogatis Interview for Sexual Functioning (DISF)** domain scores for sexual fantasy/functions, arousal, orgasm, and sexual drive improved significantly by 3.6%, 14.3%, 6.1%, and 11.35% respectively ($p < 0.0001$).
- A 16.7% increase in **Serum Testosterone** ($p < 0.0001$).
- A 3.94% decrease in **Serum Prolactin**.
- The **Short Form-36 Quality of Life Questionnaire** domain scores for physical functioning, energy/fatigue, emotional wellbeing, social functioning, pain, and general health, improved significantly by 31.2%, 18.4%, 26.2%, 14.7%, 35.2% and 11.1% respectively.



For Sexual Health in Women

OBJECTIVE	DOSE	DURATION	NO. OF PARTICIPANTS
To evaluate the safety and efficacy of KSM-66 Ashwagandha in improving sexual functions in healthy women.	300mg Twice daily	8 Weeks	50

Dongre, S., Langade, D., & Bhattacharyya, S. (2015). Efficacy and Safety of Ashwagandha (Withania somnifera) Root Extract in Improving Sexual Function in Women: A Pilot Study. *BioMed Research International*, 2015, 284154.

RESULTS:

- A 60.9% reduction in **Female Sexual Distress Scale Scores** ($p < 0.001$).
- A 62.4%, 59.4%, 82.4%, and 62.4% improvement in **Arousal, Lubrication, Orgasm** and **Satisfaction** respectively ($p < 0.001$), and a 75.8% increase in total **Female Sexual Function Index Scores** ($p < 0.001$).
- A 14.3% and 126.1% increase in the number of **Total Sexual Encounters** and **Successful Sexual Encounters** respectively ($p < 0.001$).

For Sexual Wellness and General Wellbeing in Women



OBJECTIVE	DOSE	DURATION	NO. OF PARTICIPANTS
To evaluate the safety and efficacy of KSM-66 Ashwagandha in improving sexual functions and general well-being in healthy women.	300mg Twice daily	8 Weeks	80

Ajgaonkar A, Jain M, Debnath K. (2022) Efficacy and Safety of Ashwagandha (Withania Somnifera) Root Extract for Improvement of Sexual Health in Healthy Women: A Prospective, Randomized, Placebo-controlled Study. *Cureus* doi:10.7759/Cureus.

RESULTS:

- A 52.8% reduction in **Female Sexual Distress Scale Scores** ($p < 0.0001$).
- A 40%, 48.7%, 75.7%, 71.6%, and 50.8% improvement in **Arousal, Lubrication, Orgasm, Desire**, and **Satisfaction** respectively, and a 59.2% increase in total **Female Sexual Function Index Scores** ($p < 0.0001$).
- A 18.3% and 31.8% increase in the number of **Total Sexual Encounters** and **Successful Sexual Encounters** respectively.
- A 71% reduction in total **General Health Questionnaire - 28** scores.

For Climacteric Symptoms in Perimenopausal Women



OBJECTIVE	DOSE	DURATION	NO. OF PARTICIPANTS
To evaluate the safety and efficacy of KSM-66 Ashwagandha in alleviating the climacteric symptoms in women during perimenopause.	300mg Twice daily	8 Weeks	100

Gopal, S., Aijaonkar, A., Kanchi, P., Kaundinya, A., Thakare, V., Chauhan, S. and Langade, D. (2021) Effect of an ashwagandha (*Withania Somnifera*) root extract on climacteric symptoms in women during perimenopause: A Randomized, Double-blind, Placebo-controlled Study. *J. Obstet. Gynaecol. Research*, 47(12), 4414-4425.

RESULTS:

- The **Menopause Rating Scale Scores** for psychological and urogenital domains reduced significantly by 24.7% and 26.7%. There was a 23.5% decrease in the total MRS score ($p < 0.0001$).
- The **Menopause Specific Quality of Life Scores** for vasomotor, psychological, physical, and sexual domains reduced significantly by 2.4%, 5.1%, 5%, and 5.1% respectively. There was a 4% decrease in the total MEN-QOL score ($p < 0.0001$).
- A 30.9% decrease in the **Hot Flash Score** ($p < 0.0001$).
- A 35.4% increase in **Serum Estradiol levels** ($p < 0.05$).
- **Follicle Stimulating hormone, Luteinizing hormone, and Testosterone** were reduced by 36.6%, 17.3%, and 1.9% respectively.

For Thyroid Health



OBJECTIVE	DOSE	DURATION	NO. OF PARTICIPANTS
To evaluate the safety and efficacy of KSM-66 Ashwagandha on subclinical hypothyroidism.	300mg Twice daily	8 Weeks	50

Sharma, A. K., Basu, I., & Singh, S. (2018). Efficacy and Safety of Ashwagandha Root Extract in Subclinical Hypothyroid Patients: A Double-Blind, Randomized Placebo-Controlled Trial. *Journal of Alternative and Complementary Medicine* (New York, N.Y.), 24(3), 243-248

RESULTS:

- A 8.6% reduction in **Serum Thyroid Stimulating Hormone Concentration** ($p < 0.0001$).
- A 47.1% increase in **Serum-free Triiodothyronine (T3) Level** ($p < 0.0001$).
- A 23.2% increase in **Serum-free Thyroxine (T4) Level** ($p < 0.0001$).



For Memory and Cognition

OBJECTIVE	DOSE	DURATION	NO. OF PARTICIPANTS
To evaluate the safety and efficacy of KSM-66 Ashwagandha on working memory, immediate memory, general memory, visuospatial memory, processing, executive function, attention, and information processing speed.	300mg Twice daily	8 Weeks	51

Choudhary, D., Bhattacharyya, S., & Bose, S. (2017). Efficacy and Safety of Ashwagandha (Withania somnifera (L.) Dunal) Root Extract in Improving Memory and Cognitive Functions. *Journal of dietary supplements*, 14(6), 599–612.

RESULTS:

- A Significant improvement in **Working Memory Subtests** that relate to the ability to hold information for immediate sequential actions ($p < 0.05$).
- A Significant improvement in **Executive Function** that facilitates coordination, selection, and execution of wilful action ($p < 0.05$).
- A Significant improvement in **Attention and Processing Speed** ($p < 0.05$).
- A Significant improvement in **General Memory Subtests** that relate to the ability to recall after a substantial passage of time, which is associated with learning and productivity ($p < 0.05$).
- A Significant improvement in **Immediate Memory Subtests** that relate to the ability to recall within a few minutes of stimuli presentation and reflect learning ability ($p < 0.05$).

For Safety of KSM-66 Ashwagandha



OBJECTIVE	DOSE	DURATION	NO. OF PARTICIPANTS
To evaluate the safety of KSM-66 Ashwagandha on healthy adults.	300mg Twice daily	8 Weeks	80

Verma, N., Gupta, S. K., Tiwari, S., & Mishra, A. K. (2020). Safety of Ashwagandha Root Extract: A Randomized, Placebo-controlled, study in Healthy Volunteers. *Complementary therapies in medicine*, 57, 102642. Advance online publication.

RESULTS:

- No statistically significant change or abnormality in the **Thyroid Hormonal Profile**.
- No significant change in **Alanine Transaminase (ALT/SGPT), Aspartate Transaminase (AST/SGOT), and Alkaline Phosphatase**.
- No statistically significant change in the respective mean values of **Hematological Parameters and Vital Parameters**.

Stress and Immunity in Horses



OBJECTIVE	DOSE	DURATION	NO. OF ANIMALS
To evaluate the clinical efficacy of Ashwagandha root extract as an adaptogen against various types of stress in Horses.	2.5g, 5g, or 10g/animal	21 Days	24

Priyanka G, et al B (2020). Adaptogenic and Immunomodulatory Activity of Ashwagandha Root Extract: An Experimental Study in an Equine Model. *Frontiers in Veterinary Sciences* 7:541112.

RESULTS:

- A statistically significant reduction ($p < 0.05$) in the **Cortisol** and **Epinephrine Levels** in the KSM-66 Ashwagandha supplemented treatment groups.
- A statistically significant increase in **Super Oxide Dismutase** concentration ($p < 0.05$) in the KSM-66 Ashwagandha supplemented treatment groups.
- A statistically significant decrease in **Glucose, Triglycerides, Creatinine, Alanine aminotransferase, Aspartate aminotransferase,** and **Interleukin-6** concentration ($p < 0.05$) in the KSM-66 Ashwagandha supplemented treatment groups.

Stress and Anxiety in Dogs



OBJECTIVE	DOSE	DURATION	NO. OF ANIMALS
To evaluate the safety and efficacy of KSM-66 Ashwagandha in reducing stress and anxiety and in improving the general well-being in Dogs.	15mg/kg body weight	4 Weeks	24

Kaur J, Seshadri, S, Golla, K & Sampara, P (2022) Efficacy and safety of standardized Ashwagandha (*Withania somnifera*) root extract on reducing stress and anxiety in domestic dogs: A Randomized Controlled Trial. *Journal Of Veterinary Behavior*, 51, 8-15.

RESULTS:

- A 26.9% reduction in **Urine Cortisol Creatinine Ratio** ($p < 0.001$).
- A 44.4% and 42.2% reduction in **Canine Brief Pain Inventory Scores** for Pain Severity and Pain Interference respectively.
- A 19.5%, 36.0%, and 20.5% reduction in the fear and anxiety, excitability, and aggression domains of the **Canine Behavioral Assessment & Research Questionnaire Scores**.

Stress and Anxiety in Cats



OBJECTIVE	DOSE	DURATION	NO. OF ANIMALS
To evaluate the safety and efficacy of KSM-66 Ashwagandha in reducing stress and anxiety and in improving the general well-being in Cats.	15mg/kg body weight	4 Weeks	16

Efficacy and safety of KSM-66 Ashwagandha in reducing stress and anxiety and in improving the general well-being in cats (Under Peer Review).

RESULTS:

- A 4-week therapy of KSM-66 Ashwagandha exhibited a significant decrease in **Urine Cortisol Levels**.
- A significant improvement in **Feline Temperament** and **Behavior**.
- A significant decrease in the **Tumour Necrosis Factor, Interferon** and **Interleukin-6**.

Anti-Aging Studies

Lifespan extension of *Caenorhabditis elegans*

OBJECTIVE :

To evaluate the effect of KSM-66 Ashwagandha in enhancing the lifespan of *Caenorhabditis Elegans*.

RESULTS :

Wild-type worms showed around 20% **lifespan extension** when treated with KSM-66 Ashwagandha. The authors concluded that KSM-66 Ashwagandha successfully enhanced the lifespan of *C. elegans*.

Kumar, R., Gupta, K., Saharia, K., Pradhan, D., & Subramaniam, J. R. (2013). *Annals of neurosciences*, 20(1), 13-16

Telomerase Activity in HeLa Cells

OBJECTIVE :

To evaluate the effect of KSM-66 Ashwagandha to increase telomerase activity in HeLa cells, an in-vitro human cell-culture model.

RESULTS :

KSM-66 Ashwagandha increased **telomerase activity**. Thus, Ashwagandha root extract has anti-aging potential.

Raguraman, V. and Subramaniam, J. (2016) *Advances in Bioscience and Biotechnology*, 7, 199-204.

Toxicity Studies on KSM-66 Ashwagandha

1. Acute Oral Toxicity of KSM-66 Ashwagandha in Rats.
2. 28 days repeated oral dose study of KSM-66 Ashwagandha in Rats.
3. Acute and 28 Days Repeated Dose Genotoxicity Study of Ashwagandha in Albino Rats.
4. Acute Oral Toxicity Study of KSM-66 Ashwagandha Root Extract in Wistar Rats.
5. Two weeks Dose Range Finding Study of KSM-66 Ashwagandha Root Extract by Oral Route in Wistar Rats.
6. 90-Day Repeated Dose Oral Toxicity Study Of KSM-66 Ashwagandha Root Extract in Wistar Rats.
7. In vivo Mammalian Erythrocyte Micronucleus Test with KSM-66 Ashwagandha Root Extract in Swiss Albino Mice.
8. Bacterial Reverse Mutation Test with KSM-66 Ashwagandha Root Extract in Salmonella Typhimurium Strains.
9. In vitro Chromosomal Aberration Test with KSM-66 Ashwagandha Root Extract in Cultured Human Lymphocytes.
10. Thyroid Toxicity evaluation in Zebrafish Embryos.
11. Reproductive and Developmental Toxicity of KSM-66 Ashwagandha in Rats.

Studies on KSM-66 Ashwagandha Under Peer-Review

1. Efficacy and Safety of KSM-66 Ashwagandha root extract on memory, attention, executive function, and sleep in adults: A Randomized, Double-blind, Placebo-controlled study.
2. Efficacy and Safety of KSM-66 Ashwagandha root extract on memory, attention, executive function, and sleep in children: A Randomized, Double-blind, Placebo-controlled study.
3. Efficacy and Safety of KSM-66 Ashwagandha root extract on quality of life (QoL) in patients during the post-COVID19 period: A Prospective, Randomized, Placebo-Controlled Study.
4. Efficacy and safety of KSM-66 Ashwagandha root extract in children with ADHD.
5. Efficacy and Safety of KSM-66 Ashwagandha for menopausal symptoms in women.
6. Efficacy and Safety of KSM-66 Ashwagandha root extract in the management of frailty in older adults.
7. Efficacy and Safety of KSM-66 Ashwagandha root extract on Immune Function Enhancement and Quality of Life (QoL) in healthy subjects
8. Efficacy and safety of KSM-66 Ashwagandha root extract in improving joint health and general wellbeing in dogs.
9. Efficacy and safety of KSM-66 Ashwagandha root extract in improving immune health in dogs.

Ongoing Studies on KSM-66 Ashwagandha

- Stress and Anxiety (Multicentric, 1200 participants across 7 countries) - 1
- Men's Health - 2
- Women's Health - 2
- Thyroid Health - 1
- Sleep - 1
- Personal Care (Hair, Skin, Beauty from outside, Beauty from within) - 3
- Long-term Safety - 1
- Children - 2
- Pet Health - 4

Health Canada Claims



Health Canada has granted approval to KSM-66 for a broad range of compelling functional claims based on KSM-66's impressive set of clinical studies, which have been published in respected peer-reviewed journals indexed in the PubMed database of the U.S. Government's NIH. Under Health Canada NPN (Natural Product Number) 80102381, a few of the end-product claims that formulators can make using KSM-66 at the clinically relevant dosage are:

1. Helps increase resistance to stress/anxiety in individuals with a history of chronic stress, thereby improving their overall quality of life.
2. Athletic support or workout/ exercise supplement.
3. Helps promote healthy testosterone production in males.
4. Helps support physical aspects of sexual health in women.
5. Used in herbal medicine for memory enhancement.
6. Used in herbal medicine as Rasayana (rejuvenating tonic);
7. Used in herbal medicine to relieve general debility, especially during convalescence and old age.
8. Used in herbal medicine as a sleep aid.
9. Used in herbal medicine as an adaptogen to help increase energy and resistance to stress.
10. Helps support libido.
11. Helps support emotional aspects of sexual health.
12. Helps support thyroid function in people with Hypothyroidism.
13. Helps in the function of thyroid gland in people with hypothyroidism.
14. Helps promote physical performance in previously untrained individuals when combined with regular resistance training.

Substantiated Structure/Function Claims

KSM-66 Ashwagandha's substantiated structure/function claims are in accordance with the requirements of the Dietary Supplement Health and Education Act of 1994. Backed by peer reviewed studies, numerous claims have been deemed acceptable for KSM-66. Some examples include:

Stress and Sleep

- Helps to reduce stress and anxiety
- Helps to promote relaxation and mood
- Helps to improve the quality of sleep
- Helps to reduce and maintain normal cortisol levels
- Helps in calming-down and relaxation of the body and mind

Memory And Cognition:

- Helps to improve learning performance and concentration
- Helps maintain mental alertness when experiencing fatigue or drowsiness
- Helps promote mental clarity, concentration and alertness
- Helps to enhance mental focus

Men's Health

- Helps the body to increase and maintain healthy levels of testosterone
- Helps the body to increase sperm concentration and volume
- Helps to increase sexual drive, arousal, and desire
- Helps to maintain sexual vigor and performance

Women's Health:

- Helps to moderate normal symptoms of PMS
- Helps to support a healthy response to common conditions associated with menopause
- Helps to increase sexual arousal, orgasm and satisfaction

Sports Function:

- Helps to boost stamina and endurance
- Helps to increase muscle size
- Helps to increase muscle strength
- Helps to reduce body fat percentage
- Helps to increase the speed of muscle recovery
- Helps to enhance sports performance

Weight Management

- Helps to control stress-related food cravings
- Helps to improve overall body composition when used as part of a healthy diet and exercise program

Thyroid Function Support:

- Helps to normalize thyroid hormone levels
- Helps to maintain normal thyroid health

Children:

- Helps improve quality of sleep
- Helps to reduce stress and anxiety
- Helps to improve memory, learning, concentration and focus

The above statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease. These claims are based upon clinical studies. It is the responsibility of the manufacturer (licensee) to notify the FDA within 30 days, after first marketing a product with a structure/function claim that the statement(s) are being made, as required under section 403(r)(6) of the FD&C Act.



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