



# Research Progress on the Theory of Acupuncture at the Umbilical Ring Acupoint, a Special Acupoint in Zhuang Medicine

Huina Ma, Tang Kok Hong\*

School of Pharmacy and Traditional Complementary Medicine, Lincoln University College Malaysia, Petaling Jaya, Malaysia

**Abstract:** Umbilical ring acupoint therapy, a cornerstone of Zhuang traditional medicine, regulates systemic Qi-blood balance through targeted stimulation of periumbilical acupoints, demonstrating significant clinical efficacy. Rooted in the empirical knowledge accumulated by the Zhuang people through centuries of medical practice, this therapeutic approach aligns with core theoretical frameworks such as "Triple Qi Synchronization" (Sanqi Tongbu) and the "Three Pathways-Two Circuits" (Sandao Lianglu) system. This study elucidates the anatomical localization, therapeutic mechanisms, and clinical characteristics of umbilical ring acupoints by integrating Zhuang medical theory with modern anatomical principles and bioholographic theory. Through systematic analysis of clinical research data and representative case studies, we investigate its molecular mechanisms in treating digestive disorders, gynecological conditions, and chronic diseases. A novel holistic mapping matrix linking umbilical ring acupoints to the Three Pathways-Two Circuits system via Bagua-Five Element holographic correlations is proposed. Furthermore, future research directions are outlined to establish standardized protocols and promote global integration of this therapy. Our findings provide a theoretical foundation for advancing evidence-based applications and cross-cultural dissemination of Zhuang medical practices.

**Keywords:** Zhuang medicine, umbilical ring acupoints, Three Pathways-Two Circuits, bioholography, molecular mechanism, traditional medicine standardization

## 1. Introduction

The umbilical ring acupoint (URA), a cornerstone of Zhuang medicine, emerged from centuries of empirical practice by the Zhuang people in combating disease. First formally conceptualized in 2010 by Professor Huang Jinming, a National Master of Traditional Chinese Medicine, this acupoint integrates specialized techniques—including umbilical acupuncture, moxibustion, herbal application, and cupping—demonstrating clinical efficacy across diverse pathologies. The URA embodies Zhuang medicine's core theoretical frameworks, notably the Triple Qi Synchronization and Three Pathways-Two Circuits systems, which emphasize dynamic harmony between humans and the cosmos. Despite its therapeutic potential, the URA's mechanisms remain underexplored within modern biomedical paradigms. This study addresses this gap by investigating how the URA operationalizes Zhuang medical theories, particularly its role in regulating Qi-blood dynamics and systemic homeostasis. The research is critical for three reasons: 1. It bridges traditional ethnomedical knowledge with contemporary scientific inquiry; 2. It elucidates the URA's unique contributions to holistic healthcare, distinct from classical Chinese acupuncture; 3. It validates empirical practices (e.g., Bamboo Silky Chicken therapy) through interdisciplinary frameworks. We hypothesize that the URA functions as a "biophysical nexus", synchronizing the Three Pathways-Two Circuits system via mechanosensitive and neurohumoral mechanisms. Specifically, URA stimulation modulates the sense channel and blood channel, thereby restoring Triple Qi Synchronization. This study tests whether URA interventions (e.g., thread moxibustion) induce measurable changes in biomarkers linked to Qi-blood equilibrium (e.g., cortisol, cytokines, microcirculatory flux). It follows these: 1. Yin-Yang as the Foundation: The URA's "Celestial-Terrestrial Yin-Yang" model (Huang Jinming) posits dual regulatory modes—needle-mediated Qi modulation and herb-driven flavor-property interactions; 2. Three Pathways-Two Circuits: The URA's anatomical overlap with Shenque (CV8) suggests a hub for "Grain-Water-Qi Pathway" integration, with clinical effects mirroring modern gut-brain-immune crosstalk. By interrogating these dimensions [1]. This study advances ethnomedical scholarship while offering translational insights for integrative medicine.

## 2. Overview of the umbilical ring acupoint, a special acupoint in Zhuang medicine

### 2.1 Definition of the umbilical ring acupoint in Zhuang medicine

The umbilical ring acupoint (Qi Huan Xue) refers to a cluster of acupoints surrounding the umbilicus, categorized into two concentric rings: Inner umbilical ring acupoints (Nei Qi Huan Xue): Located along a circular path 0.5 cun (approximately 1.5 cm) from the umbilical fossa edge. These pathways and circuits collectively form the infrastructure for Qi-blood

synthesis, distribution, and system-environment communication (See Figure 1).

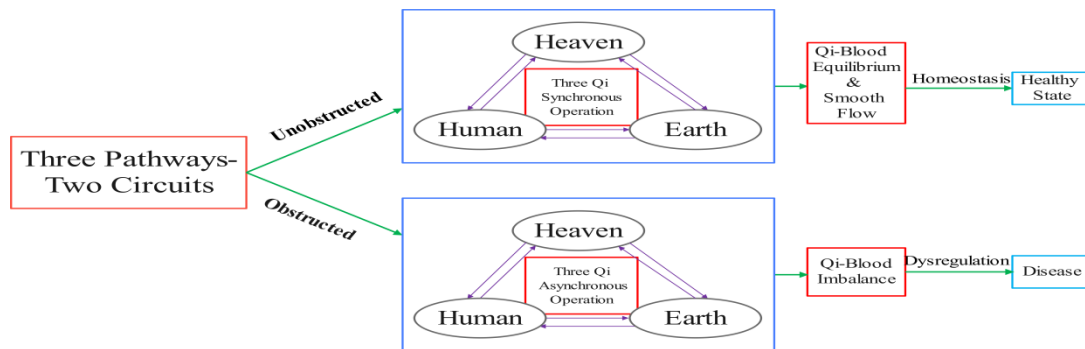


Figure 1. Schematic diagram of pathophysiology of the doctor. Image source: Song Ning, Chinese Journal of Traditional Chinese Medicine, 2024 (09):5031

Outer umbilical ring acupoints (Wai Qi Huan Xue): Comprises four cardinal cupoints (superior, inferior, left, right) mirroring the inner ring's functional zones. Clinicians select acupoints based on lesion localization, either individually or in combination. Clinically, eight acupoints are conventionally mapped using a clock-face model (See Figure 2). The umbilical ring acupoint system may also be integrated with somatic acupoints for synergistic therapeutic effects.

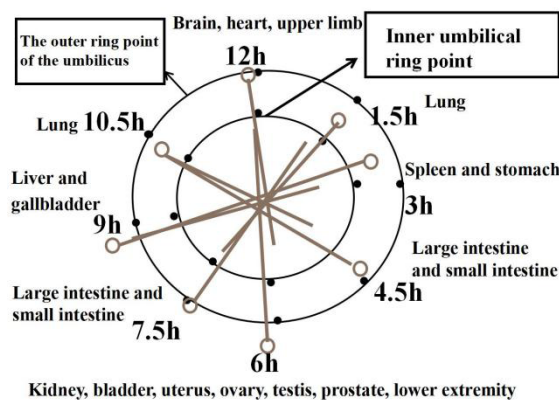


Figure 2. Zhuang doctor's umbilical ring acupoint, image source: Huang Jinming, Guangxi Medicine, 2024, (4):601.

## 2.2 Zhuang medicine umbilical ring acupoint from the perspective of modern anatomy and biological holographic theory

The umbilical ring acupoint's unique anatomy (1.5-2cm fossa with radial folds, layered tissues from skin to peritoneum) and vascular connections (portal system via ligamentum teres hepatis, venous/lymphatic drainage) form its structural basis[2]. Zhuang medicine's holographic theory positions it as a whole-body microcosm[3], with umbilical zones mirroring fetal organ arrangement (Yi Qi Ying Quan Shen). This enables dual diagnostic (analyzing striae/color patterns) and therapeutic functions through Three Pathways-Two Circuits regulation. The acupoint operates via: 1. Neural integration(T10-L1/vagal pathways);2.Vascular/lymphatic modulation, and Bioenergetic resonance synchronizing Qi-blood flow. Modern studies validate somatotopic specificity(e.g.,12 o'clock position for heart/brain)with corresponding proteomic (HSPs/cytokines) and metabolomic changes (ATP/lactate). This model bridges traditional medicine with systems biology, offering precise therapeutic strategies for chronic disorders through this pivotal regulatory hub.

## 3. Integration of umbilical ring acupoint therapy in Zhuang medicine with modern multidisciplinary research

### 3.1 Clinical Protocol for umbilical ring acupuncture in Zhuang Medicine

The Tian Yinyang acupuncture method utilizes micro-needling techniques to gently stimulate acupoints within the

Celestial, Terrestrial, and Human zones of the umbilical ring, with the therapeutic goal of activating righteous Qi (Zhengqi) and restoring systemic balance. The treatment protocol consists of three key phases.

During pre-needling preparation, patients perform compound abdominal breathing (deep nasal inhalation followed by slow pursed-lip exhalation) for 5-10 cycles to synchronize personal Qi with natural rhythms and stabilize emotional states. The needling technique itself employs 0.18×15 mm sterile filiform needles inserted just 2-3 mm into the subdermal layer using a rapid "feather-touch" approach to minimize tissue trauma, deliberately avoiding traditional manipulation techniques or deliberate elicitation of Deqi sensations (e.g., soreness, numbness).

Following treatment, patients commonly report three characteristic responses: centrifugal warmth radiating from the umbilicus, perceived cold expulsion through the palms and soles, and profound systemic relaxation. In Zhuang medical theory, these phenomena collectively signify successful "Qi Arrival" (Deqi), indicating effective energy regulation and therapeutic engagement. The method's emphasis on subtle stimulation and natural Qi response reflects its holistic approach to restoring equilibrium.

### **3.2 Mechanisms of umbilical ring acupuncture in treating diseases of the Three Pathways-Two Circuits system**

Umbilical ring acupuncture demonstrates multi-system efficacy through Zhuang medicine's Three Pathways framework. For Anus, it reduces digestive inflammation (TNF- $\alpha$ /IL-8) and modulates gut motility via Piezo2-ICC[4]. The Grain Pathway benefits include Th1/Th2 rebalancing for eczema and menstrual regulation, while the Qi Pathway alleviates COPD via IL-6/TNF- $\alpha$  reduction[5]. Neurologically (Dragon Circuit), it outperforms ibuprofen for migraines and improves insomnia by regulating 5-HT (1A/cAMP & 2A/BDNF) and GABA/Glu pathways[6]. Umbilical ring acupuncture effectively treats insomnia by modulating 5-HT pathways (5-HT1A/Gai/o/cAMP, 5-HT2A/Gaq/11/BDNF) and balancing GABA/Glu levels, reducing PSQI/HAMD scores[7]. Rooted in Three Pathways-Two Circuits theory, it synchronizes neuro-immune-endocrine networks via holographic regulation. Core mechanisms involve vagal anti-inflammatory effects, microbiome modulation ( $\uparrow$ Bifidobacterium), and HPA axis regulation. Current challenges include protocol standardization and mechanistic validation. Future research should explore omics-based acupoint mapping and AI-driven Deqi quantification. Current limitations include insufficient omics validation, with future research needing single-cell RNA sequencing and AI-assisted Deqi quantification to standardize this integrative approach for chronic disease management.

## **4. Research perspectives on key mechanisms of the umbilical ring acupoint in Zhuang medicine**

As a unique acupoint in Zhuang medical acupuncture, the clinical research on the therapeutic effects of the umbilical ring acupoint remains limited, with methodologies often confined to observational studies of clinical efficacy. Current investigations lack in-depth exploration of its disease prevention and treatment mechanisms, while small sample sizes and insufficient statistical rigor weaken the persuasiveness of findings. There is an urgent need for expanded research into foundational theories, technological innovation, and molecular neurobiological mechanisms.

Our research team has proposed a novel Bagua-Five Element Holo-Mapping Theory for the umbilical ring acupoint, integrating Zhuang medical principles of Triple Qi Synchronization and Three Pathways-Two Circuits with Bagua (Eight Trigrams) philosophy, Five Element theory, and bioholographic projection mechanisms. The umbilicus, as the embryonic developmental epicenter, radiates outward in alignment with the postnatal Bagua orientation (Li-South, Kan-North, Zhen-East, Dui-West), forming eight directional zones that encode holographic information of systemic tissues and organs. Guided by the I Ching axiom "observing distal phenomena to infer bodily principles" (yuan qu zhu wu, jin qu zhu shen), this model posits the umbilicus as a "Taiji hub": the central umbilical ring acupoint serves as the Taiji pivot, with its eight zones corresponding to Bagua holographic mappings. Each zone establishes bidirectional regulatory connections with distal organs via neuro-endocrine-immune networks. Preliminary findings suggest correlations between acupoint holographic partitions, Bagua trigrams, Five Element attributes, and functional modulations of the Three Pathways-Two Circuits system (Table 1). This framework provides a modernized paradigm for expanding Zhuang medical theory, while ongoing refinements aim to strengthen its clinical applicability.

**Table 1. Holographic Mapping of the umbilical ring acupoint in Zhuang Medicine: Integrating Bagua-Five Element Theory with the Three Pathways-Two Circuits System**

Eight Trigrams and Five Elements		Zhuang medicine umbilical ring point			Hologram	Three Pathways-Two Circuits	Function regulation Clinical practice
Eight Trigrams	Five elements	Zone	Inner Ring	Outer Ring			
Li South	Fire	Zone 1 (12 o'clock)	Head,heart, brain	upper limb Heart, brain	The heart and brain system	Fire Pathway (Huolu):Governs divine regulation and Qi circulation	Palpitations, insomnia, mental abnormalities, and headaches
Kun Southwest	Earth	Zone 2 (1 o'clock)	Lungs		Lung immune	Qi Pathway (Qidao):Manages respiration and detoxification	Cough, asthma and skin disease are caused by external infection of toxins
Dui West	Metals	Zone 3 (3 o'clock)	Spleen, stomach	Spleen, stomach	Spleen and stomach system	Grain Pathway (Gudao): Controls nutrient transport and blood production	It can relieve abdominal distension, diarrhea, indigestion and stomach pain
Qian Northwest	Ministerial Fire	Zone 4 (5 o'clock)	Intestines		Sanjiao life gate Spread and suppress	Dragon Pathway (Longlu): Facilitates Qi transformation and metabolic regulation	It is used to treat cold and heat disorders, metabolic disorders, and to treat pain in the ribs, jaundice, and depression
Kan North	Water	Zone 5 (6 o'clock)	Kidney, bladder, reproduction	Kidney bladder reproduction	Renal system reproduction Water metabolism	Water Pathway (Shuidao): Governs fluid metabolism and essence storage	Edema infertility, soreness and coldness in the waist and knees
Gen Northeast	Mountain Earth	Zone 6 (7 o'clock)	Heart, small intestine		The spleen and stomach are extended Blood circulation	Fire Pathway (Huolu): Strengthens blood vitality and tissue repair	It can improve diarrhea, abnormal blood sugar metabolism, tumor accumulation and non-healing of sores
Zhen East	Wood	Zone 7 (9 o'clock)	Liver, gallbladder, muscles	Liver	Liver and gallbladder system The foundation of acquired constitution	Dragon Pathway (Longlu): Regulates Qi dynamics and detoxification	It can relieve pain and depression, treat eye disease and wind syndrome, regulate lumbar pain, edema and menstrual disorders
Xun Southeast	Wind -Wood	Zone 8 (11 o'clock)	Lungs		Liver and gallbladder extension The passage of Qi	Fire Pathway (Huolu): Modulates wind pathogens and psychoemotional balance	Dizziness and convulsions, emotional disorders, relieve arthritis, limb numbness

## 5. Conclusion

This research bridges traditional Zhuang medicine and modern systems biology through precision umbilical ring acupuncture. The Bagua Holo-Mapping system correlates subzones with therapeutic indications, guiding three key techniques: Yin-Yang balancing needling for Qi regulation, triad acupoint selection aligning cosmic-body principles, and standardized "Triple Warming" moxibustion (45±2°C). A novel multimodal platform investigates mechanisms via fMRI (default mode network), metabolomics ( Qi-blood trajectories), proteogenomics (TRPV1/BDNF targets), and microbiome analysis (SCFA mediation). This paradigm shift transforms empirical practice into evidence-based neuromodulation, offering personalized solutions for chronic diseases while preserving traditional medical heritage. The integration of thermal biofeedback standardization with omics technologies represents a breakthrough in acupuncture research methodology.

## Acknowledgments

This work was supported by the following fund project: Guangxi Zhuang Autonomous Region Science and Technology Plan Project(2024JJH140120).

## References

- [1] Song Ning. Analysis of the academic characteristics of Huang Jinming's Acupuncture and Moxibustion in Chinese Traditional Medicine [J]. Journal of Basic Medical Sciences of China, 2013,19(9): 1071-1073.
- [2] Jtoh Y, Arai K. Umbilical reconstruction using a coneshaped flap.[J]. Ann Plast Surg, 1992,28(4)335-338.
- [3] Huang Jinming, Huang Hanru, Huang Dingjian. Zhuang medicine line moxibustion therapy [M]. Nanning: Guangxi

People's Publishing House, 1986:40.

- [4] He Jun, Liao Muxi, Meng Zhenzhen. Clinical Efficacy and Impact on Related Inflammatory Factors of Acupuncture Combined with Navel Ring Point Ginger Moxibustion for Spleen-Kidney Yang Deficiency Type Ulcerative Colitis [J]. *Journal of Guangzhou University of Chinese Medicine*, 2015,32(4):687-689,693.
- [5] Xiao Qian, Liu Chunqiang, Huang Yebao, et al. Clinical Study on the Treatment of Diarrheal Type Irritable Bowel Syndrome by Acupuncture at Umbilical Ring Points in Zhuang Medicine [J]. *Popular Science & Technology*, 2020,22(1):54-57.
- [6] Wei Yi, Liang Wei, Guo Ya Wen, et al. Study on the effects of acupuncture at the inner umbilical ring point combined with insomnia point formula on the content of Glu and GABA neurotransmitters in the hypothalamus of PCPA insomnia rats [J]. *Shizhen National Medical and Pharmaceutical*, 2019,30(9): 2279-2281.
- [7] Li Yuxuan, Kuang Jiayi, Wang Xilin, et al. Clinical study on acupuncture of the umbilical ring point combined with moxibustion of the Yongquan point for treating insomnia of heart-kidney disharmony type [J]. *Guangxi Traditional Chinese Medicine*, 2017,40(6): 14-17.

## **Author Bio**

Corresponding author: Tang Kok Hong, School of Pharmacy and Traditional Complementary Medicine, Lincoln University College Malaysia.