PH-08 East Asia: the Chinese and Japanese materia medica evaluated

HEALING after the FALL, research library, PH-08

Researched 10 October 2026 by Claude Opus agent for THRIVING after the FALL, Book Four. Library document, unverified.

Scope and method

This report is for a reader in temperate East Asia: northern and central China, Korea, Japan and the Russian Far East. It names the plants of the Chinese and Japanese materia medica worth knowing after the Fall, grades each use, and gives doses and harms. Temperate Europe remains the pharmacopoeia's home ground (THRIVING library, PH-01), but this report stands on its own.

This report builds on six library reports and does not repeat them. TR-03 gives the system-level account of Chinese medicine, including the full record on aristolochic acid and aconite (THRIVING library, TR-03). IN-09 holds everything on Artemisia annua and malaria (THRIVING library, IN-09). ME-07 holds the ephedra alkaloid figures (THRIVING library, ME-07). PH-10 holds the regional poison and lookalike tables (THRIVING library, PH-10). SY-04 sets the rule on restricted knowledge (THRIVING library, SY-04). PH-01's point that a grade belongs to the tested preparation, not to the plant, applies here with double force (THRIVING library, PH-01).

Three layers are kept apart: the classical claim (what the texts say), the record (what has been measured in people) and the modern inference (what chemists built on top).

Doses come from two independent sources where I found two, and the report says where I had only one. Each reference says what was read. Unverified claims and my own inferences carry [VERIFY].

Where I disagree with the library. I keep TR-03's grade B for berberine in adult diarrhoea but grade its oral use in children D, because the paediatric trials gave it by enema (section 4.1). TR-03's sho-saiko-to figure of 20 deaths comes from a 1998 news report, and the 1996 government notice I found gave 10, so the count is unsettled (section 7). ME-07 and PH-10 give different end years for the same Hong Kong aconite series (section 7). PH-01 leaves out liquorice, which I think is the commonest hidden harm in herbal practice anywhere and belongs in its poison section (section 3.5).

On toxic plants (aconite, ephedra, Tripterygium, Croton, Dichroa) the report covers history, evidence, dose, toxicity and feasibility only. It gives no extraction, concentration or purification steps.

1. The two living traditions, on their own terms

1.1 The Chinese bencao line

The Chinese materia medica is a written tradition with named authors, from the Shennong bencao jing of the Han period through Zhang Zhongjing's Shanghan lun of about 200 CE to Li Shizhen's Bencao gangmu of 1578 (THRIVING library, TR-03). Its modern carrier is the Pharmacopoeia of the People's Republic of China (ChP), which sets identity tests and minimum marker contents for each crude drug.

On its own terms the tradition prescribes a formula for a pattern, not a plant for a disease (THRIVING library, TR-03). A practitioner would call the question whether huang qi "works" for kidney disease malformed. That objection shapes how the trials below should be read (section 13).

Some knowledge in this tradition is held in lineages and in secret family formulae (shi cheng, mi fang). It exists, it is restricted by those who hold it, and this report does not reproduce it (THRIVING library, SY-04, TR-03).

1.2 The Japanese Kampo line

Kampo is the Japanese reading of the same classics, above all the Shanghan lun. Yoshimasu Todo (1702 to 1773) and the Koho school reduced the theory to abdominal palpation and the fit between formula and the patient's sho, the presenting pattern [VERIFY]. After the Meiji state licensed only Western-trained doctors from the 1870s, Kampo survived in families and came back through industry, with extract granules entering national insurance from 1967 and widely in 1976 [VERIFY].

Japan's national health insurance now covers 148 Kampo formulas, 147 oral and one ointment, approved under the same system as Western drugs. Makers must identify at least two crude drugs by thin-layer chromatography and assay them by HPLC (Frontiers in Pharmacology review 2015). Extract granules are given at 4.5 to 27 g a day, most often 6 to 7.5 g.

Because every patient on a given formula gets the same standardised product, Kampo has the best trial literature of any herbal system (section 5).

1.3 Korean and other traditions

Korean medicine shares the canon and has its own classics, Heo Jun's Dongui bogam of 1613 and Lee Je-ma's Sasang medicine of 1894 [VERIFY]. Mongolian, Tibetan and Ainu plant knowledge also belong to this region. I did not research them, and their absence is not a judgement.

2. The ranked table

The ranking weighs three things: the strength of the record, usefulness for problems a village will face, and whether the plant can be grown or gathered in temperate East Asia. Grades are per use: A, randomised trials or systematic reviews with a consistent and clinically meaningful result. B, consistent observational or clinical series, or randomised evidence that is positive but of low certainty. C, convergent traditional use across unrelated cultures with plausible pharmacology. D, single tradition or anecdote. X, ineffective or harmful. Pinyin names are given first, then Japanese where Kampo uses the plant.

Rank	Plant, part	Preparation	Use and grade	Daily dose (sources, and where they differ)	Main harms	Lookalikes and substitutions
1	Coptis chinensis rhizome (huang lian, oren) and Phellodendron amurense or P. chinense bark (huang bai, obaku)	Decoction	Acute watery diarrhoea in adults, B. Add-on in children, D. Type 2 diabetes (berberine), B	Coptis 2 to 5 g (Ho 2014, citing a standard dosage) or 2 to 10 g (practitioner sources). Berberine trials 0.4 to 1.5 g a day	Kernicterus risk in newborns, constipation, hypoglycaemia with diabetes drugs, drug interactions	Mahonia and Berberis also yield berberine
2	Glycyrrhiza uralensis root (gan cao, kanzo)	Infusion or decoction	Dyspepsia, C. Cough, C	EMA: 3 to 8 g for dyspepsia, 3 to 13.5 g as expectorant, 4 weeks maximum (EMA HMPC 2026). Food limit 100 mg glycyrrhizin (BfR undated, JECFA 2005)	Pseudoaldosteronism, hypokalaemia, hypertension, oedema, myopathy, arrhythmia	G. glabra and G. inflata accepted. Abrus precatorius, called Indian liquorice, is a different plant with very toxic seeds [VERIFY]
3	Artemisia annua herb (qinghao)	Cold or hot infusion	Malaria as sole treatment, X. Last resort only, D (THRIVING library, IN-09)	See IN-09 Protocol 5	Relapse	A. apiacea also called qinghao. A. afra has no artemisinin (THRIVING library, IN-09)
4	Ephedra sinica stem (ma huang, mao)	Decoction	Adult asthma, C. Weight loss or stimulant, X	1.5 to 10 g or 3 to 9 g (two tables in THRIVING library, ME-07)	Hypertension, stroke, arrhythmia, psychosis, death	Root (ma huang gen) contains no alkaloids (THRIVING library, ME-07)

Rank	Plant, part	Preparation	Use and grade	Daily dose (sources, and where they differ)	Main harms	Lookalikes and substitutions
5	Panax ginseng root (ren shen, ninjin)	Decoction or chewed slices	Erectile function, B (low certainty). Cognition, D. Glucose, C. Tonic, D	3 g in daikenchuto (Kotaro label). Second source not read [VERIFY]	Insomnia, raised blood pressure, interaction with warfarin	Water hemlock (Cicuta) roots (THRIVING library, PH-10). Wild root faked with cultivated
6	Zingiber officinale rhizome, dried (gan jiang, kankyo) with Zanthoxylum piperitum pericarp (sansho)	Decoction (daikenchuto)	Post-operative ileus, C. Cold abdominal pain and bloating, D	Ginger 5 g, zanthoxylum 2 g, ginseng 3 g, maltose 20 g (Kotaro label). Trial dose 15 g a day of granules (Hoshino 2018)	Heartburn, rare liver injury [VERIFY]	Z. bungeanum (hua jiao) is the Chinese substitute
7	Ziziphus jujuba var. spinosa seed (suan zao ren, sansonin)	Decoction of roasted seed	Insomnia, C	Not double-sourced. 9 to 15 g is commonly given [VERIFY]	Few reported, drowsiness	Z. mauritiana seed is sold in its place [VERIFY]
8	Pueraria montana var. lobata root (ge gen, kakkon)	Decoction or starch	Reducing alcohol intake, C. Common cold (kakkonto), D	10 to 15 g (asante-academy), 6 to 12 g (Mayway). Penetar used 2 g of extract	Few reported	Pueraria thomsonii (fen ge) is a separate ChP drug
9	Astragalus mongholicus root (huang qi, ogi)	Decoction	Chronic kidney disease, C. Fatigue after stroke or cancer, D	Not double-sourced. 9 to 30 g is commonly given [VERIFY]	Few reported	Hedysarum polybotrys (hong qi) substituted

Rank	Plant, part	Preparation	Use and grade	Daily dose (sources, and where they differ)	Main harms	Lookalikes and substitutions
10	Bupleurum chinense root (chai hu, saiko)	Decoction, sho-saiko-to	Chronic hepatitis, D. With interferon or in cirrhosis, X	3 to 10 g (asante-academy), 3 to 12 g (Mayway)	Fatal interstitial pneumonitis	Bupleurum longiradiatum is toxic and has been confused with it [VERIFY]
11	Cinnamomum cassia bark (rou gui) and twig (gui zhi, keishi)	Decoction	Fasting glucose, C. Warming formulas, D	Coumarin limit reached at about 2 g of cassia a day for a 60 kg adult (BfR coumarin FAQ)	Liver injury from coumarin	Ceylon cinnamon (C. verum) has very little coumarin
12	Schisandra chinensis fruit (wu wei zi, gomishi)	Decoction or tincture	Liver protection, cough, tonic, D	Not double-sourced [VERIFY]	Interaction raising tacrolimus levels [VERIFY]	S. sphenanthera (nan wu wei zi)
13	Ginkgo biloba leaf (yin xing ye) and seed (bai guo, ginnan)	Standardised leaf extract. Seed as food	Dementia prevention, X (DeKosky 2008). Seed as medicine, X	Leaf EGb 761 120 mg twice daily in GEM	Bleeding. Seeds: convulsions in children	None
14	Tripterygium wilfordii root (lei gong teng)	Hospital extract only	Rheumatoid arthritis, B in hospital, X in a village	No village dose	Marrow failure, infertility, death	Celastrus species
15	Dichroa febrifuga root (chang shan)	Decoction, traditionally treated with vinegar	Malaria, X	5 to 9 g given in some sources, not confirmed [VERIFY]	Vomiting at effective doses, liver injury	Hydrangea relatives
16	Aconitum carmichaelii lateral root (fu zi, bushi)	Processed root only	Every village use, X	Doses up to 15 g of processed fuzi in practice (THRIVING library, TR-03)	Lethal cardiac arrhythmia	Other Aconitum species. Mistaken for maca (Zhou 2022)

Rank	Plant, part	Preparation	Use and grade	Daily dose (sources, and where they differ)	Main harms	Lookalikes and substitutions
Reject	Aristolochia species (guang fang ji, guan mu tong, ma dou ling, qing mu xiang), Asarum (xi xin), Croton tiglium seed (ba dou)	None	X	None	Kidney failure and cancer (Aristolochia), violent purging (Croton)	Fang ji and mu tong are names shared by safe and lethal plants (IARC 2012)

Ranks 1 to 9 earn their place. Ranks 10 to 16 are listed because a reader will meet them and needs to know why they are dangerous.

3. The steer's five

3.1 Artemisia annua

IN-09 and TR-03 hold the full account. In brief: Ge Hong's fourth-century recipe of steeping the herb in cold water and drinking the juice inspired Tu Youyou's low-temperature extraction in Project 523, which gave artemisinin (THRIVING library, TR-03). The classical indication was intermittent fever, not malaria as such (THRIVING library, TR-03). The record shows that herb tea clears parasites but lets about two-thirds of patients relapse (THRIVING library, IN-09). The modern inference is the artemisinin combination therapy, which is grade A. The tea is a last resort when no pharmaceutical is left. It grows wild across the region and a village should keep it (THRIVING library, IN-09).

3.2 Ephedra: the honest dose

The classical claim. Ma huang is the lead herb in maoto (ma huang tang) of the Shanghan lun, given for a fever without sweating and for wheezing. Its root is classed separately, as a herb to stop sweating.

The record. Nagai isolated ephedrine in the 1880s and Chen and Schmidt described its pharmacology in 1924 (Chen and Schmidt 1924). It was the standard oral bronchodilator from the 1930s into the 1950s [VERIFY]. As a slimming and energy supplement it was linked to strokes, heart attacks and deaths, and the US FDA banned ephedrine alkaloids in dietary supplements from 12 April 2004 (THRIVING library, ME-07). A Utah court briefly overturned the rule in 2005 and it was upheld on appeal in 2006 [VERIFY]. Traditional Chinese prescriptions fell outside its scope [VERIFY].

The modern inference, and the dose. The ChP requires at least 0.80 per cent ephedrine plus pseudoephedrine in the dried stem, and measured means run about 1.4 to 1.6 per cent (THRIVING library, ME-07). So 3 g of stem holds about 24 mg of total alkaloid at the legal minimum, about 42 mg at the 1.4 per cent mean, and about 60 mg at 2 per cent [VERIFY: my arithmetic, and decoction will not extract all of it]. The UK licensed tablet dose of ephedrine hydrochloride for adults is 15 to 60 mg three times a day, halved for older people (EMC SmPC). A 3 g decoction lands inside the licensed single-dose range across the whole spread of stem quality, while 9 g of strong stem at once exceeds it.

ME-07 cites a case-control finding that ephedra above 32 mg a day carried a 3.5-fold risk of haemorrhagic stroke (THRIVING library, ME-07). Any useful bronchodilator dose crosses that line. The honest position: ephedra decoction is a real bronchodilator, grade C for adult asthma, given by the dispensary in 3 g doses with a blood-pressure cuff, for days, not weeks (Protocol 3). As a stimulant, slimming aid or tonic it is grade X.

3.3 Ginseng

The classical claim. Ren shen is the great tonic of the canon, said to restore qi, calm the spirit and lengthen life.

The record is large and weak. A 2012 overview of Panax ginseng counted 67 randomised trials with heterogeneous preparations and unclear risk of bias (Shergis 2012). The Cochrane review of cognition found some benefit but too little good evidence to recommend it (Geng 2010). For erectile dysfunction, nine trials gave a trivial 3.52-point gain on the international erectile function score, while men's self-reported ability to have intercourse rose with a risk ratio of 2.55 (95 per cent CI 1.76 to 3.69), at low certainty, and no trial compared ginseng with sildenafil (Lee 2021). For colds, the five trials with 747 people all used American ginseng (Panax quinquefolius), and the reduction in incidence missed significance at RR 0.70 (CI 0.48 to 1.02) (Seida 2011). A meta-analysis found a modest fall in fasting glucose (Shishtar 2014).

The 1979 "ginseng abuse syndrome" in 133 users is discounted, because the products were unknown and many users also took caffeine (Siegel 1979). The interaction that matters is with warfarin, whose effect 2 g a day of American ginseng weakened in 20 volunteers (Yuan 2004). The lookalike that kills is water hemlock (THRIVING library, PH-10).

Ginseng needs 4 to 6 years under shade [VERIFY]. After the Fall it is a trade good, not a priority crop.

3.4 Astragalus

The classical claim. Huang qi tonifies qi and "secures the exterior", for fatigue, sweating, oedema and slow-healing sores. The ChP accepts both Astragalus membranaceus var. mongholicus and A. membranaceus.

The record. The Cochrane review of chronic kidney disease found 22 studies with 1,323 participants, all at high or unclear risk of bias. Astragalus lowered serum creatinine by 21 μmol/L (CI 8 to 35) and proteinuria by 0.53 g a day (CI 0.26 to 0.79), with very high heterogeneity, and the authors rated the evidence low quality (Zhang 2014). Grade C at best. Practitioners advise against it during acute infection.

3.5 Liquorice: the dose limit and the harm

The classical claim. Gan cao is the "harmoniser" of the canon, added to most formulas to soften harsh herbs. Honey-fried liquorice (zhi gan cao) is said to be gentler.

The record. Liquorice is in 109 of the 147 oral Kampo products on the insurance list, at 1.0 to 8.0 g a day (Yoshino 2021). Glycyrrhizin's metabolites block the kidney enzyme 11β-hydroxysteroid dehydrogenase type 2, so cortisol acts on the mineralocorticoid receptor and the kidney holds sodium and loses potassium. This is pseudoaldosteronism: hypokalaemia, high blood pressure, oedema and, in severe cases, myopathy, rhabdomyolysis and arrhythmia (Yoshino 2021).

The figure that should stop a prescriber: more than 80 per cent of patients over 60 who took shakuyakukanzoto, which holds 6 g of liquorice a day, for more than 30 days developed pseudoaldosteronism or related symptoms (Yoshino 2021) [VERIFY: I read this in the review, not in the primary study]. The risk factors are dose, use beyond 30 days, age, female sex, low weight, low albumin, constipation, dementia and diuretic or steroid use. Japanese labels contraindicate products with 2.5 g or more of liquorice a day in patients with aldosteronism, myopathy or hypokalaemia (Yoshino 2021).

The dose limit. The German health authority and the EU Scientific Committee on Food (1991) both set about 100 mg of glycyrrhizin a day as the ceiling in food (BfR undated). JECFA in 2005 declined to set an acceptable daily intake but noted that sensitive people react below about 2 mg per kg (JECFA 2005). A Dutch study found signs in 9 of 11 women at 4 mg per kg for eight weeks (BfR undated).

The EMA monograph of March 2026 permits more for short use: 3 to 8 g of root a day for dyspepsia and up to 13.5 g as an expectorant, for no more than four weeks, in adults only (EMA HMPC 2026).

The two limits do not fit together until the root's strength is known. The European Pharmacopoeia requires at least 4.0 per cent glycyrrhizin (EMA HMPC 2026). Cultivated G. uralensis in China averaged only 1.5 per cent across 1,013 samples, while wild root averaged about 4.4 per cent (search summary, not read in full) [VERIFY]. So 100 mg of glycyrrhizin is about 2.5 g of wild root or about 6.6 g of weak cultivated root. That matches the Japanese label threshold. I take 2.5 g of root a day as the line for any use longer than four weeks, and the EMA doses as the ceiling for short courses [VERIFY: my synthesis]. Protocol 2 sets it out.

4. The plants with a strong record

4.1 Coptis, Phellodendron and berberine

The classical claim. Huang lian and huang bai are bitter and "cold", given for damp-heat dysentery, sores and red eyes.

The record. Berberine is the main alkaloid, about 7 per cent of Coptis rhizome (Coptis cultivation review 2022). TR-03 gives the cholera trial and the diabetes meta-analysis (THRIVING library, TR-03). The newer diarrhoea evidence comes from a 2020 review of 38 randomised trials with 3,948 participants, 2,702 of them children. Berberine with antibiotics did better than antibiotics alone, and berberine alone improved cure rates. No deaths or serious adverse events were reported. The evidence was moderate to very low in quality, and most paediatric trials gave berberine as an enema (Yu 2020). The original trial is more sobering: berberine helped toxigenic E. coli diarrhoea, but in cholera its effect was slight and 1,200 mg added nothing to tetracycline (Rabbani 1987). I keep TR-03's grade B for adults, as an addition to oral rehydration only, and grade oral use in children D.

The harm that matters is in newborns. Berberine displaces bilirubin from albumin about ten times more strongly than phenylbutazone in vitro (Ho 2014, citing Chan 1993). In Singapore a retrospective survey found severe jaundice in 22 of 102 babies with G6PD deficiency exposed to Coptis in the womb, against 2 of 34 unexposed (Ho 2014, citing Wong 1980). Singapore banned Coptis and berberine under its Poisons Act in 1978. Other studies found no difference, including 1,004 matched pairs in Hong Kong and 122 G6PD-deficient newborns in Guangxi with no kernicterus (Ho 2014). Singapore lifted the ban for proprietary medicines from January 2013 and fully from April 2016, but still advises against berberine for infants, for G6PD-deficient people of any age, and in pregnancy and breastfeeding (HSA 2016).

The ban rested on one retrospective survey and its lifting on a review that found the signal weak. After the Fall, with no bilirubin measurement and no exchange transfusion, the cautious rule applies: no berberine in the last month of pregnancy, while breastfeeding, or for any baby, and none for anyone with a family history of favism or neonatal jaundice [VERIFY: regional G6PD prevalence not checked].

Growing. Coptis needs shade and five or six years. Berberine peaks at about six years, and shade raises the alkaloid content (Coptis cultivation review 2022). Phellodendron amurense is a hardy tree of the Russian Far East and Manchuria, with most berberine in old trunk and root bark. Seed from one region reached the ChP standard after two years, while Northeast seed needed nine or more (Phellodendron germplasm study 2010). Mahonia and Berberis shrubs also yield berberine (THRIVING library, PH-01).

4.2 Pueraria

The classical claim. Ge gen releases the muscles, especially a stiff neck and back at the start of a cold, and relieves thirst and diarrhoea. It is the lead herb of kakkonto (ge gen tang). The flower (ge hua) is a traditional remedy for drunkenness. Japanese kudzu starch is a food for invalids.

The record. Kakkonto was not better than a Japanese over-the-counter cold remedy when started within 48 hours of a cold. Of 340 adults analysed, 22.6 per cent worsened on kakkonto and 25.0 per cent on the comparator (Okabayashi 2014). For alcohol, a small Harvard series found that kudzu extract cut drinking. In the latest, 20 men given a single 2 g dose of extract drank 1.9 beers instead of 3.0 in a session, while on placebo they drank 3.4 instead of 2.7 (Penetar 2015). This is grade C, from small trials by one group. The brief points to MI-06 for alcohol, which is not yet in the library.

4.3 Ziziphus

The classical claim. Suan zao ren nourishes the heart and calms the spirit, and is the lead herb of suan zao ren tang (sansoninto) for restless sleep with irritability.

The record. A 2013 review found 12 randomised trials with 1,376 adults, all of low quality and none placebo-controlled (Ziziphus formula review 2013). A 2018 review added studies and reached the same view (Ziziphus formula review 2018). The plausible constituents are spinosin and the jujubosides. Grade C. The tree also gives jujube fruit, a staple food of northern China and Korea.

4.4 Cinnamomum cassia

The classical claim. Gui zhi, the twig, warms and opens the channels and is the lead herb of guizhito, the founding formula of the Shanghan lun. Rou gui, the bark, warms the interior.

The record. A meta-analysis of 10 trials with 543 people found fasting glucose fell by about 25 mg/dL, at doses from 120 mg to 6 g a day, with no clear change in HbA1c (Allen 2013). That is a surrogate, not an outcome, so grade C.

The harm is coumarin. Cassia holds about 3,000 mg of coumarin per kg. With a tolerable daily intake of 0.1 mg per kg, a 60 kg adult reaches the limit at about 2 g of cassia a day and a 15 kg child at about 0.5 g (BfR coumarin FAQ). Coumarin injures the liver in sensitive people, and the diabetes doses run over that limit. Ceylon cinnamon has little coumarin but does not grow in temperate East Asia.

4.5 Schisandra

The classical claim. Wu wei zi, the "five-flavour fruit", astringes the lungs and kidneys and calms the spirit.

The record. The most recent meta-analysis pooled 54 animal studies of the liver (Schisandra review 2025). Human trials are small and poor. Schisandra raises blood levels of tacrolimus, a transplant drug [VERIFY]. Grade D. The fruit is a food, which is the better reason to grow it.

5. The Kampo trial literature

5.1 Daikenchuto for post-operative ileus

The formula, from the Jingui yaolue, is Japanese pepper pericarp, dried ginger, ginseng and malt sugar. A Kotaro label lists 2.0 g zanthoxylum, 3.0 g ginseng and 5.0 g processed ginger, with 20 g of maltose, in a 27 g daily dose of granules (Kotaro daikenchuto label). The trials used TU-100, Tsumura's product, at 15 g a day.

The Cochrane review found seven trials with 1,202 participants. Time to first flatus was 11 hours shorter on daikenchuto (CI 5 to 17), in two trials with 83 people, against a control mean of about 75 hours. Time to first bowel

movement was 9 hours shorter, but the confidence interval crossed zero (CI 22 hours shorter to 3 hours longer), in four trials with 500 people. Hospital stay was half a day shorter, again crossing zero. No drug-related adverse events were reported. Every outcome was rated very low certainty (Hoshino 2018). The largest trial, JFMC39-0902, enrolled 386 patients after open colectomy at 51 sites (Katsuno 2015). I could not read its primary result [VERIFY]. A substudy of 88 of its patients found that gastric emptying improved but the effect on ileus was limited [VERIFY].

Daikenchuto probably speeds gut recovery a little after abdominal surgery, and the pharmacology of ginger and pepper is plausible. Grade C, not B, because the certainty is so low. Protocol 4 sets it out.

5.2 Rikkunshito for functional dyspepsia

Rikkunshito has eight herbs, including ginseng, liquorice and ginger. In one Japanese trial, eight weeks of rikkunshito improved epigastric pain ($p = 0.04$), but not post-meal fullness ($p = 0.06$) (Suzuki 2014). In the DREAM trial, 125 patients were analysed after eight weeks, and rikkunshito improved upper gastrointestinal and anxiety symptoms against placebo (Tominaga 2018). A European crossover trial found no change in gastric motility and a high placebo response (Frontiers in Pharmacology review 2021). Grade B for the symptom, with the warning that dyspepsia trials are dominated by placebo response. The formula carries liquorice, so the limits in Protocol 2 apply.

5.3 The others, briefly

Kakkonto did not beat an over-the-counter cold remedy (Okabayashi 2014). Two small trials of maoto in influenza, 60 patients in all, suggested it may shorten fever about as much as neuraminidase inhibitors (maoto review 2019). Yokukansan for agitation in dementia did not beat placebo at 4 or 12 weeks in 145 patients, with a hint of benefit in an exploratory subgroup (Furukawa 2017). Grades: maoto and kakkonto D, yokukansan for agitation X.

5.4 What the Kampo literature shows overall

An analysis of 135 Kampo trials from 1988 to 2007 found only 28 placebo-controlled, two-thirds with fewer than 100 patients, generally low quality, and none using Kampo diagnosis to select patients (Watanabe 2011). A later count found that 84.7 per cent of Kampo trials did not use Kampo diagnosis at all (Motoo 2014). Of 416 trials classified in 2019, 8.9 per cent were double-blind [VERIFY: from a search summary]. Japan's evidence reports listed 345 trials by 2010 and 378 by 2012 [VERIFY].

The trials fairly test what Japanese doctors actually prescribe, a fixed product for a Western diagnosis. They do not test Kampo as its tradition describes it, matching formula to sho, and almost nobody has tried. The honest answer to the brief's question, what Kampo shows, is that two formulas, daikenchuto and rikkunshito, have repeated positive randomised trials of low certainty, and the rest is thin.

6. Aristolochic acid: the central harm

TR-03 tells this story in full (THRIVING library, TR-03). This section adds how the plants entered prescriptions, how big the harm was, and how a dispensary keeps them out.

6.1 How it entered

The way in was the naming system, in which one name covers several plants. Fang ji can mean Aristolochia fangchi, Stephania tetrandra or Cocculus. Mu tong can mean Aristolochia manshuriensis, Clematis or Akebia. Guang fang ji is the Aristolochia, han fang ji the Stephania, and guan mu tong the Aristolochia (IARC 2012). Swapping one for another under the shared name was accepted practice. In the Brussels slimming clinic, the formula changed in May 1990 to include Stephania tetrandra, and the material supplied was Aristolochia (Vanherweghem 1993).

6.2 How big the harm was

Belgium. Vanherweghem's first report described nine women with rapidly progressive kidney fibrosis (Vanherweghem 1993). Within a few years more than 100 were known, and many went on to dialysis or transplant and to cancer of the urinary tract (THRIVING library, TR-03).

The Balkans. Grollman and colleagues found aristolactam DNA adducts in the kidneys of patients with the disease but not in other kidney disease, and a TP53 mutation pattern in which most changes were A:T to T:A, the signature of aristolochic acid (Grollman 2007). The source was Aristolochia clematitis seed in home-milled wheat flour [VERIFY: route from general knowledge], so the same poison caused a European endemic disease with no herbalist involved.

Taiwan. Taiwan's herbal prescribing database showed aristolochia herbs given to more than a third of the population from 1997 to 2003 (THRIVING library, TR-03). In 151 Taiwanese patients with upper urinary tract cancer, 55.6 per cent carried the aristolochic acid mutation signature (Chen 2012). In liver cancer, 78 per cent of 98 Taiwanese tumours and 47 per cent of Chinese tumours carried it (Ng 2017). Aristolochic acid is a cause of common cancers in East Asia, not a rare poisoning.

6.3 How it is kept out

The bans: Taiwan in November 2003, Hong Kong for proprietary medicines from June 2004, and the EU in 2004 (IARC 2012). I could not confirm the legal status in mainland China. Contaminated products were still found after the bans (IARC 2012, EMA position paper). Bans fail because the substitution happens at the dried root, before any label.

After the Fall the defence is physical: refuse any root or stem sold under the shared names unless identified, and uproot Aristolochia vines from hedges and gardens. Aristolochia debilis and A. contorta grow wild across temperate China, Korea and Japan [VERIFY]. Its flowers are unmistakable, a curved pipe, and its fruit a hanging capsule that opens like a basket. Protocol 7 is the intake checklist.

7. The other dangerous plants

Bupleurum and sho-saiko-to. Classically, sho-saiko-to harmonises the "lesser yang" and treats alternating fever and chills. In the 1990s Japan gave it to perhaps a million people with chronic hepatitis [VERIFY]. One open trial of 260 patients with cirrhosis found fewer liver cancers over five years, not significant ($p = 0.071$) (Oka 1995, via a review). Then came interstitial pneumonitis. In 1996 the Ministry of Health issued an emergency safety notice reporting 10 deaths [VERIFY: from a search summary]. TR-03 cites a 1998 news figure of 20 deaths and 188 cases (THRIVING library, TR-03). Labels now contraindicate it with interferon, in cirrhosis and in liver cancer (Kotaro sho-saiko-to label). Scutellaria is thought to be the cause (THRIVING library, TR-03). Grade X for hepatitis.

Dichroa febrifuga. Chang shan was used for fevers for about 2,000 years (van Ooij 2016). Febrifugine was isolated in the 1940s and was about 100 times more potent than quinine against bird malaria (PROSEA Dichroa, Koepfli 1947). It failed in people. At effective doses it caused severe nausea and vomiting, and liver injury was reported, while tolerated doses did not work (van Ooij 2016) [VERIFY: liver injury from a secondary source]. The tradition paired the root with vinegar and other herbs to reduce vomiting. Grade X.

Tripterygium wilfordii. TR-03 gives the trials, which are grade B for rheumatoid arthritis, and the adverse event rate of about a quarter of patients (THRIVING library, TR-03). A case from 2022 shows how narrow the margin is: a woman with kidney failure died of marrow suppression after a short course of decoction at a normal dose (Tripterygium case 2022). Grade X outside a hospital with blood counts.

Aconitum carmichaelii. TR-03 gives the toxicology and PH-10 the mainland case series, in which a mix-up of Yunnan species was an important cause after 2004 (THRIVING library, PH-10). At a birthday lunch in Chongqing in 2018, guests drank a homemade liquor made from a root they thought was maca. Fifteen fell ill and five died.

Those who died felt symptoms a median of 18 minutes after drinking. Every patient had a numb tongue, and the deaths were from ventricular arrhythmias (Zhou 2022). Hong Kong saw 179 episodes from 2008 with a mortality of 1.1 per cent, ending in 2020 by ME-07 and 2021 by PH-10 (THRIVING library, ME-07, PH-10). Processing reduces toxicity 40 to 80-fold, and no village can check that it has worked (THRIVING library, TR-03). Grade X.

Ginkgo. The GEM trial gave 3,069 people aged 75 or over EGb 761 or placebo for a median of about six years [VERIFY: follow-up]. Dementia developed in 277 on ginkgo and 246 on placebo, a hazard ratio of 1.12, not significant, and there were 16 haemorrhagic strokes on ginkgo against 8 on placebo (DeKosky 2008). Grade X for prevention. The seeds are a food that poisons children. Ginkgotoxin blocks vitamin B6 and causes vomiting and convulsions 1 to 12 hours after eating. Hong Kong's food authority warns that 10 to 50 cooked seeds at once can poison (Hong Kong CFS 2020) [VERIFY: date of the leaflet]. Pyridoxine (vitamin B6) treats it.

Croton tiglium. Ba dou seeds and their oil are the most violent purgative in the canon. Croton oil is the source of phorbol esters, which promote tumours in animal studies [VERIFY]. Grade X.

Endangered animals and adulterated patent medicines. TR-03 covers both (THRIVING library, TR-03). Any pill that works suspiciously fast, especially for pain, joints, asthma or weight, may contain a steroid, an anti-inflammatory or a stimulant.

8. What a temperate-Asian village should grow first

For a village of about 300 with cold winters, in northern China, Korea or northern Japan.

Order	Plant	Why	Years to first harvest	Notes
1	Artemisia annua	Last-resort malaria, and fever	1	See IN-09 Protocol 7
2	Phellodendron amurense trees, with Coptis in their shade	Berberine for diarrhoea	Bark 2 to 9 or more, Coptis 5 to 6	Plant both in the first year
3	Glycyrrhiza uralensis	Dyspepsia, cough, and the sweetener in most formulas	3 to 4 [VERIFY]	Likes dry, sandy, alkaline ground
4	Ziziphus jujuba	Fruit as food, seed for sleep	3 to 5 [VERIFY]	Hardy and drought-tolerant
5	Ginger and Zanthoxylum	Gut, warming, daikenchuto	Ginger 1, Zanthoxylum 3 [VERIFY]	Ginger needs a warm season or a hot bed in the north
6	Pueraria	Starch, alcohol, neck stiffness	Already wild	Keep it fenced, it is invasive
7	Schisandra	Fruit, tonic	3 to 5 [VERIFY]	Food more than medicine
8	Bupleurum and Astragalus	Formula ingredients	2 to 3 [VERIFY]	Low priority
9	Panax ginseng	Trade good	4 to 6 [VERIFY]	Only if there is shaded forest and patience

Do not grow: Aconitum, Tripterygium, Croton, Dichroa, Aristolochia. Do not plant ephedra. In the steppe and the northern deserts it grows wild, and the dispensary should know where the stands are.

9. Evidence grades

Plant or preparation	Use	Grade	Basis
Artemisinin combination therapy	Malaria	A	Pharmaceutical (THRIVING library, IN-09)
Artemisia annua tea	Malaria as sole treatment	X	Relapse in two-thirds (THRIVING library, IN-09)
Berberine, Coptis, Phellodendron	Adult acute watery diarrhoea, with rehydration	B	Rabbani 1987, Yu 2020
Berberine	Children's diarrhoea, oral	D	Paediatric trials used enemas (Yu 2020)
Berberine	Type 2 diabetes	B	THRIVING library, TR-03
Ephedra stem decoction	Adult asthma	C	Ephedrine pharmacology, traditional use (THRIVING library, ME-07)
Ephedra	Weight loss, stimulant	X	THRIVING library, ME-07
Panax ginseng	Erectile dysfunction	B	Lee 2021, low certainty
Panax ginseng	Cognition, fatigue, tonic	D	Geng 2010
Panax quinquefolius	Prevention of colds	C	Seida 2011
Astragalus	Chronic kidney disease	C	Zhang 2014, low quality
Liquorice	Dyspepsia, cough	C	EMA traditional use (EMA HMPC 2026)
Daikenchuto	Post-operative ileus	C	Hoshino 2018, very low certainty
Rikkunshito	Functional dyspepsia	B	Suzuki 2014, Tominaga 2018
Kakkonto	Common cold	D	Okabayashi 2014, not superior to comparator
Maoto	Influenza	D	Two small trials (maoto review 2019)
Yokukansan	Agitation in dementia	X	Furukawa 2017
Pueraria	Reducing alcohol intake	C	Penetar 2015
Ziziphus seed	Insomnia	C	Unblinded trials only
Cinnamomum cassia	Fasting glucose	C	Allen 2013, surrogate only
Schisandra	Liver, tonic	D	Animal studies
Ginkgo leaf extract	Dementia prevention	X	DeKosky 2008
Sho-saiko-to	Chronic hepatitis	X	Pneumonitis deaths, no proven benefit
Tripterygium	Rheumatoid arthritis	B in hospital, X in a village	THRIVING library, TR-03
Dichroa	Malaria	X	Vomiting at effective doses (van Ooij 2016)

Plant or preparation	Use	Grade	Basis
Aconite	Any village use	X	THRIVING library, TR-03, PH-10
Aristolochia, Asarum	Any use	X	IARC 2012

Only one entry reaches grade A, artemisinin combination therapy, and it is a pharmaceutical, not the plant. No whole East Asian plant preparation holds a consistent, high-certainty grade A on a clinical outcome in what I read.

10. Means ledger

Rung	What is possible
Hands alone	Recognise and refuse aristolochia, aconite, water hemlock and ginkgo seeds in quantity. Chew liquorice root for a sore throat. Gather jujube and schisandra fruit as food
Hearth	Decoctions and infusions by weight: liquorice, kudzu, jujube seed, ginger and zanthoxylum. Kudzu starch for invalids. Artemisia tea as a last resort
Garden and still	Grow the plants in section 8. Dry, store and label roots and bark. Make tinctures of schisandra and ginger. Without scales, use a spoon calibrated once against a known weight
Village dispensary (300 people)	Scales to 0.1 g. Berberine decoction with rehydration salts. Short courses of ephedra decoction with a blood-pressure cuff. A root register and intake check against aristolochia. Liquorice limits enforced by register
District infirmary (3,000 people)	Daikenchuto-style decoction after abdominal surgery. Potassium checks on liquorice formulas, if an analyser survives. Vitamin B6 for ginkgo poisoning. Thin-layer chromatography for berberine and, with a reference standard, aristolochic acids [VERIFY: feasibility of a TLC test for aristolochic acid at this level]
Hospital before the Fall	Artemisinin combination therapy, licensed ephedrine and salbutamol, standardised Kampo granules, Tripterygium extracts under blood monitoring, assays for aristolochic acid by HPLC

The most important rung is the dispensary scale. Every harm in this report except aristolochia is dose-dependent, and the doses are in grams.

11. Harm test

Harm	Cause	Threshold or rate	Who is most at risk	First sign	Response
Pseudoaldosteronism	Glycyrrhizin in liquorice	About 100 mg glycyrrhizin a day long term, which is 2.5 to 6.6 g of root. More than 80 per cent of over-60s on 6 g a day beyond 30 days (Yoshino 2021)	Older women, small people, those on diuretics or steroids	Swollen ankles, rising blood pressure, weak legs, cramps	Stop all liquorice
Neonatal kernicterus	Berberine displacing bilirubin	22 of 102 G6PD-deficient newborns exposed, in one survey (Ho 2014)	Newborns, G6PD deficiency	Yellow baby in the first week	No berberine for babies, late pregnancy or breastfeeding
Stroke, arrhythmia	Ephedrine	More than 32 mg a day linked to 3.5-fold risk (THRIVING library, ME-07)	High blood pressure, heart disease, older people	Headache, palpitations, chest pain	Stop. Check blood pressure
Fatal arrhythmia	Aconite alkaloids	About 2 mg aconitine is lethal (THRIVING library, TR-03)	Anyone	Tongue and lip numbness within minutes	Emergency. No village antidote
Interstitial pneumonitis	Sho-saiko-to, Scutellaria	10 deaths by 1996 [VERIFY]	Hepatitis patients, those on interferon	Dry cough, breathlessness, fever	Stop at once
Marrow failure, infertility	Tripterygium	Adverse events in about a quarter of trial patients (THRIVING library, TR-03)	Kidney failure, women of childbearing age	Bruising, infections	Do not use outside hospital
Kidney failure, urothelial and liver cancer	Aristolochic acid	Cumulative dose, no safe dose	Anyone	Silent for years	Keep it out at intake
Liver injury	Coumarin in cassia	More than about 2 g of cassia a day for a 60 kg adult (BfR coumarin FAQ)	Children, people with liver disease	Jaundice	Reduce cassia

Harm	Cause	Threshold or rate	Who is most at risk	First sign	Response
Convulsions	Ginkgotoxin in seeds	10 to 50 cooked seeds (Hong Kong CFS 2020)	Children	Vomiting then fits, 1 to 12 hours after	Vitamin B6 if available
Hidden drugs	Adulterated patent medicines	Common in the 1990s (THRIVING library, TR-03)	Anyone	Unexpectedly fast relief	Refuse unlabelled pills

12. Red flags

- A numb mouth or tingling within an hour of a herbal drink or liquor: suspect aconite, treat as an emergency.
- Swollen ankles, rising blood pressure or weak legs in anyone taking a formula with gan cao: stop the formula.
- Any root sold as fang ji, mu tong, ma dou ling, qing mu xiang, tian xian teng or xi xin: refuse it unless identified.
- A yellow newborn whose mother took huang lian: stop it, feed often, and put the baby in daylight.
- A dry cough with breathlessness and fever on a Bupleurum or Scutellaria formula: stop it.
- Palpitations, chest pain or a headache on ephedra: stop and measure blood pressure.
- A child vomiting after eating ginkgo nuts: watch for fits for 12 hours.
- Blood in the stool, high fever, or dehydration not improving on rehydration: berberine is not the answer, escalate.
- A herbal pill that works faster than any herb should: suspect a hidden pharmaceutical.
- A "tonic" taken for months: check it for liquorice.

13. The case against

Positive-result bias. Vickers and colleagues found that every acupuncture trial from China, Japan, Hong Kong and Taiwan they examined reported a positive result, and almost every Chinese trial of other treatments did too (Vickers 1998) [VERIFY: I know this paper's finding but did not reread it]. A literature with no negative trials points to selective publication or flawed trials. Most of the berberine and Ziziphus trials are open-label, small and positive, and should be discounted accordingly.

The formula problem. Most trials test formulas, not plants. A good result for rikkunshito, with eight herbs, says nothing about ginseng alone, and the ranked table's grades for single plants inherit evidence that is mostly about formulas. The tradition would say this is the point. Read every grade here as a grade for the tested preparation (THRIVING library, PH-01).

The diagnosis problem. Almost no Kampo trial selects patients by sho (Motoo 2014). If the tradition is right that the match matters, the trials underestimate the effect. If it is wrong, the trials are fair. Nobody knows which.

The quality problem. The same crude drug can differ threefold in marker content: cultivated liquorice at 1.5 per cent glycyrrhizin and wild at 4.4 per cent, ephedra stem from 0.8 to over 1.5 per cent alkaloid. After the Fall, with no assays, every dose in grams is an estimate within a factor of two or three.

Scale cuts both ways. With hundreds of millions of users, even a rare harm kills dozens. Plants with no harm signal after that much use, such as jujube, kudzu and ginger, are probably safe at ordinary doses.

The argument for the pharmaceutical. Every grade A in this report is a purified compound. A reader who still has artemether-lumefantrine or salbutamol should use them. The plants matter when those run out.

14. Ten-line summary

1. No whole East Asian plant preparation reached a consistent, high-certainty grade A in what I read. Artemisinin is the exception, and it is a pharmaceutical.
2. Berberine from Coptis or Phellodendron is the most useful village plant medicine here: grade B for adult watery diarrhoea, given with rehydration, never to babies or late in pregnancy.
3. Liquorice is the commonest hidden harm: keep long use under 2.5 g of root a day and short courses within the EMA limit of four weeks.
4. Ephedra decoction is a real bronchodilator: 3 g of stem per dose for an adult asthma attack, with a blood-pressure cuff, never as a stimulant.
5. Ginseng and astragalus have large, weak trial records: grade B at best for one use each, mostly C or D.
6. Kampo shows that daikenchuto speeds gut recovery after surgery a little and rikkunshito helps dyspepsia, both at low certainty.
7. Aristolochic acid entered through shared names and caused kidney failure in Belgium, endemic nephropathy in the Balkans, and a large share of upper urinary tract and liver cancers in Taiwan.
8. It is kept out by refusing any root under the shared names unless identified, and by uprooting Aristolochia vines.
9. Aconite, Tripterygium, Croton, Dichroa and sho-saiko-to are grade X for any village: the margin between dose and death is too narrow.
10. A temperate-Asian village should plant Artemisia annua, Phellodendron with Coptis, liquorice and jujube first.

15. Open questions

- What were the primary results of JFMC39-0902 (Katsuno 2015) and of the 2015 daikenchuto gastrectomy trial? I could not read either.
- What are the current ChP dose ranges for gan cao, huang qi, ren shen, suan zao ren and chang shan? I could not double-source them.
- What is the total count of sho-saiko-to pneumonitis cases and deaths? I found 10 deaths in 1996, TR-03 cites 20 in 1998, and the full count is not settled.
- What is the legal status of aristolochia herbs in mainland China today?
- Can a district infirmary run a thin-layer chromatography test for aristolochic acid with reference material it can keep?
- Does decoction extract a predictable share of berberine, glycyrrhizin and ephedrine? The arithmetic in this report assumes most of it.
- Does matching formula to sho change trial outcomes?
- How common is G6PD deficiency in each part of the region, so that the berberine rule can be tuned?
- Which Hong Kong aconite period is right, 2008 to 2020 or 2008 to 2021?

16. Sources to read in full

- Hoshino 2018 and Katsuno 2015, on daikenchuto.
- Yoshino 2021 and the pharmacovigilance study behind its 80 per cent figure.
- EMA HMPC 2026 and its assessment report.
- Ho 2014 and the Singapore source papers.
- Grollman 2007, Chen 2012, Ng 2017 and IARC 2012, on aristolochic acid.
- Zhou 2022, the Chongqing outbreak.
- Watanabe 2011, Motoo 2014 and Vickers 1998, on trial quality.
- Bensky's materia medica and the current ChP, for the doses I could not double-source. I read neither.

17. At the bedside after the Fall

In the household. Use ginger, jujube and kudzu freely. Count liquorice: a tonic or cough remedy taken daily for months is the one most likely to harm, and the sign is swollen ankles. Never give huang lian to a baby. Do not cook more than a handful of ginkgo nuts for a child. If anyone gets a numb tongue after a homemade root liquor, assume aconite.

In the village dispensary. The dispensary keeps a scale, a blood-pressure cuff, a register and a short shelf: berberine bark or rhizome, liquorice, ephedra stem, jujube seed, kudzu, ginger, zanthoxylum and Artemisia annua. It runs Protocols 1 to 6. It enforces Protocol 7 at the door. It does not stock aconite, Tripterygium, Croton or Dichroa, and keeps their names and pictures on the wall.

In the district infirmary. The infirmary adds post-operative daikenchuto, vitamin B6 for ginkgo poisoning, potassium checks if any analyser survives, and thin-layer chromatography if it can be set up. It records who took liquorice formulas, for how long, and what happened.

18. Protocols

Protocol 1. Berberine decoction for acute watery diarrhoea in adults

- **Who:** adults and children over 12 with watery diarrhoea and no blood. Always alongside oral rehydration, never instead of it.
- **Not for:** babies and children under 12, pregnancy (especially the last month), breastfeeding, known G6PD deficiency or a family history of favism or neonatal jaundice, people on ciclosporin or diabetes drugs.
- **Material:** Coptis rhizome, 3 to 5 g a day, or Phellodendron bark, 6 to 10 g a day [VERIFY: the bark dose is my inference from lower berberine content, not from a source]. Coarsely broken.
- **Method:** simmer in 400 ml of water, covered, for 30 minutes. Strain. Make up to 300 ml. Divide into three doses.
- **Timing:** three times a day after a sip of rehydration solution. For up to 3 days.
- **Tolerance:** berberine content varies widely by age of plant and part. Expect the strength to vary by a factor of two.
- **Stop and escalate:** blood in the stool, fever over 38.5 °C, more than 3 days of diarrhoea, or dehydration not improving.
- **Grade:** B for adults, with rehydration.

Protocol 2. Liquorice root tea for indigestion or cough

- **Who:** adults only.
- **Not for:** high blood pressure, heart, kidney or liver disease, low potassium, pregnancy, breastfeeding, women who may become pregnant, anyone on diuretics, digoxin, steroids or stimulant laxatives (EMA HMPC 2026). Anyone over 60 on long courses, see below.
- **Indigestion:** 1.5 to 2 g of dried root in 150 ml of boiling water, steep 10 to 15 minutes [VERIFY: steep time], 2 to 4 times a day after meals. Daily total 3 to 8 g. Maximum 4 weeks. See a practitioner if not better after 2 weeks (EMA HMPC 2026).
- **Cough:** 1.5 to 4.5 g in 150 ml, 2 to 3 times a day. Daily total 3 to 13.5 g. See a practitioner if not better after a week (EMA HMPC 2026).
- **Long use:** for anything beyond 4 weeks, including tonics and formulas taken for months, total liquorice from all sources stays under 2.5 g of root a day [VERIFY: my synthesis of the 100 mg glycyrrhizin limit and Japanese labelling].
- **Count every source:** most Kampo and Chinese formulas contain liquorice. Add them up.
- **Check weekly:** blood pressure, ankle swelling, leg weakness, cramps, palpitations. Stop at any of them.

- **Grade:** C for the symptom. The harm is well established.

Protocol 3. Ephedra stem decoction for an adult asthma attack (dispensary only)

- **Who:** adults with asthma who have no inhaler left.
- **Not for:** blood pressure above 160/100, any heart disease, stroke, thyroid overactivity, glaucoma, enlarged prostate with retention, pregnancy, children under 12, anyone on MAO inhibitors or other stimulants [VERIFY: exclusion list adapted from ephedrine licensing, not read in full].
- **Material:** dried green stem of Ephedra sinica or a close species. Never root. Weigh it.
- **Dose:** 3 g of stem per dose. Over 65, 1.5 g per dose (EMC SmPC halves the dose for older patients).
- **Method:** simmer in 250 ml of water for 20 minutes [VERIFY: timing not double-sourced]. Strain. Drink warm.
- **Timing:** up to three times a day, no closer than 4 hours apart. Daily maximum 9 g of stem. No more than 3 days without review.
- **Expected alkaloid:** about 24 to 60 mg per 3 g dose, depending on the stem [VERIFY: my arithmetic].
- **Check:** blood pressure and pulse before each dose and an hour after. Stop if systolic pressure rises by more than 20 mmHg, the pulse goes over 120, or there is chest pain, headache or confusion [VERIFY: thresholds are my inference].
- **Grade:** C. Not for weight loss, energy or sport (X).

Protocol 4. Warming pepper-ginger-ginseng decoction (daikenchuto-style)

- **Who:** adults after abdominal surgery, from the first day they are allowed fluids, and adults with bloating and cold-type cramping.
- **Not for:** signs of bowel obstruction (vomiting bile or faeces, a swollen silent belly, no wind), which is a surgical emergency. Not for heartburn or ulcers.
- **Material per day:** Zanthoxylum pericarp 2 g, dried ginger 5 g, ginseng 3 g (Kotaro daikenchuto label). Maltose or rice malt syrup 20 g, or honey 15 to 20 g as a substitute [VERIFY: honey substitution].
- **Method:** simmer the three herbs in 400 ml of water down to 200 ml, about 30 to 40 minutes. Strain. Dissolve the sugar in the warm liquid [VERIFY: method from the classical pattern, not a cited source].
- **Timing:** in three doses, before meals. For up to 2 weeks after surgery.
- **Substitutes:** Sichuan pepper (Zanthoxylum bungeanum) for Japanese pepper. If no ginseng, give the pepper and ginger alone and record it as a different preparation.
- **Grade:** C.

Protocol 5. Kudzu root decoction and kudzu starch

- **Root decoction for neck and shoulder stiffness at the start of a cold:** 10 to 15 g of dried root a day, simmered 20 to 30 minutes in 400 ml, in two or three doses, for up to 3 days. Grade D.
- **For reducing drinking:** the trial dose was 2 g of extract before drinking (Penetar 2015). There is no tested root equivalent. A practical estimate is 10 to 15 g of root as a decoction taken an hour or two before the occasion [VERIFY: my inference]. Grade C for the extract.
- **Starch for invalids and loose stools:** 1 to 2 level tablespoons of kudzu starch stirred into a little cold water, then into 200 ml of hot water, and heated until clear and thick. A little salt or sugar. As often as wanted. Grade D. Safe.
- **Making the starch:** pound the root, soak, strain, settle, rinse until white, and dry [VERIFY: not from a cited source].

Protocol 6. Jujube seed decoction for poor sleep

- **Who:** adults with difficulty falling asleep or restless sleep.
- **Not for:** people taking other sedatives, alcohol, pregnancy [VERIFY].
- **Material:** Ziziphus jujuba var. spinosa seed, dry-roasted and crushed, 10 to 15 g a day [VERIFY: dose single-sourced in my reading].
- **Method:** simmer in 400 ml of water for 30 minutes, strain to about 200 ml.
- **Timing:** one dose about an hour before bed. Try for 2 weeks. Stop if no change after 4 weeks.
- **Grade:** C.

For Artemisia annua, use IN-09 Protocol 5 (tea) and Protocol 7 (growing) (THRIVING library, IN-09).

Protocol 7. Root intake and rejection checklist

Every root, rhizome, stem or vine that enters the dispensary goes through this before it is stored.

1. Write down the name it came under, the supplier and the date.
2. Refuse outright: any material named fang ji, guang fang ji, mu tong, guan mu tong, ma dou ling, qing mu xiang, tian xian teng, xi xin, chuan wu, cao wu, fu zi, lei gong teng, ba dou or chang shan, unless the plant itself has been seen and identified.
3. Accept han fang ji (Stephania) or Akebia mu tong only if a sample of the whole plant, leaf and flower, has been seen. Otherwise refuse.
4. Check every forked "ginseng" root against water hemlock (THRIVING library, PH-10).
5. Check every "maca" or tonic root against Aconitum (Zhou 2022).
6. Keep a labelled sample of each batch, dry and sealed, for 2 years.
7. Never mix batches under one name.
8. Uproot Aristolochia vines from village hedges and gardens, wearing gloves, and burn them.

19. Numbers to carry

- Liquorice: 100 mg glycyrrhizin a day is the long-term limit, 2.5 g of root a day, 4 weeks maximum at EMA doses (3 to 8 g).
- Over 80 per cent of over-60s on 6 g of liquorice a day beyond 30 days were affected.
- Ephedra: 3 g of stem holds about 24 to 60 mg of alkaloid, and the licensed ephedrine dose is 15 to 60 mg three times a day.
- Coptis rhizome is about 7 per cent berberine, and the dose is 3 to 5 g a day.
- Berberine and newborns: severe jaundice in 22 of 102 exposed G6PD-deficient babies in one survey.
- Cassia: 2 g a day for an adult, 0.5 g for a small child, reaches the coumarin limit.
- Ginkgo seeds: 10 to 50 cooked seeds can poison.
- Aconite: about 2 mg of aconitine can kill, and symptoms start within minutes.
- Aristolochic acid signature: 55.6 per cent of Taiwanese upper urinary tract cancers and 78 per cent of Taiwanese liver cancers.
- Kampo: 148 insured formulas, 109 of 147 oral products contain liquorice.

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