

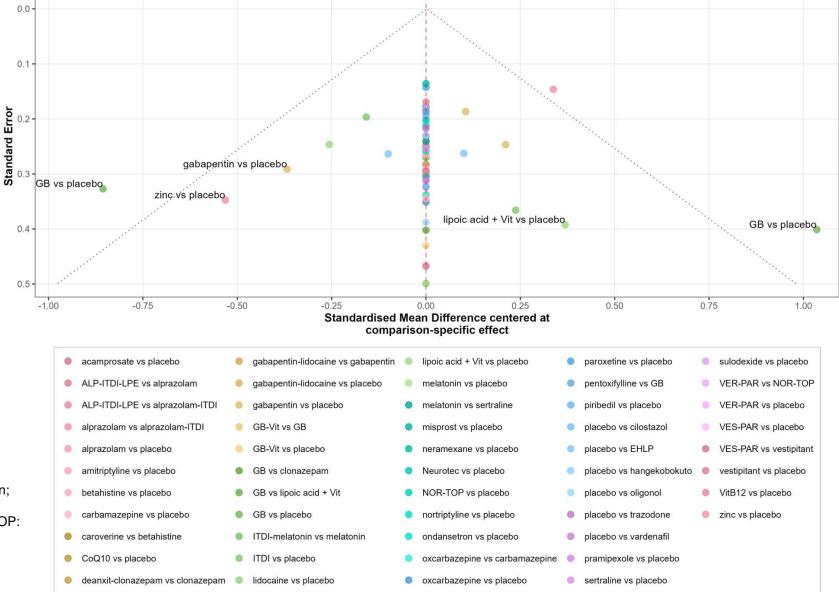
Supplementary Figure 1: Flowchart for searching and identifying eligible studies. RCT: randomized clinical trials.

																																																			-	Low risk Some concerns High risk
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2025 Abbasi R	arnia	2023 Kiloslavi II 2024 Abouzari M	2023 Chaunan B	2023 Castilho L	2021 Saberi A	2021 Ledesma A	2020 Yener H 2021 Kucher K	2020 Farhadi M	0	2019 Nishad R	2010 Sharma A 2019 Ezz T	3 Prochazkova K	2018 Ohkuma A	2018 Elzayat S	2018 Beaino M	2017 Lee H	2017 Azevedo A	2017 Abtahi S	2016 Polanski J	2016 Maeda T	2016 Lim H	2016 Elzayat S	2015 Acki M	2014 Ciodaro F	2014 Albu S	2013 Taslimi S	2013 Ino T	2013 Coelho C	2012 Noybasi o 2012 Sharma D	n n	3	2012 Aoki M	2011 Sziklai I	5	2011 Shim H	2011 Roberts C	2011 Holgers K	2009 Mazurek B	alali	2009 Azevedo A	2007 Witsell D	2007 Piccirillo J	2007 Dib G		2003 Arda H	2 Morgenstern C	2001 Drew S	2001 Bayar N	1999 Simpson J	1993 Sullivan M	1993 Hartigh J	-
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Supplementary Figure 2: Summary of risk of bias of the included randomized controlled trials

Comparison	Number of Studies I	Direct Evidence	e 12	Random Effects Model	SMD	95%-CI
gabapentin vs g Direct estimate Indirect estimate Network estimate	1	ocaine 0.83		↓ ↓	1.64 [-0	0.38; 1.52] 0.48; 3.77] 0.12; 1.62]
gabapentin-lido Direct estimate Indirect estimate Network estimate	1	ebo 0.82		*	-0.00 [-2	2.02; -0.09] 2.06; 2.06] 1.74; 0.01]
GB vs GB-Vit Direct estimate Indirect estimate Network estimate	1	0.94		*	- 6.83 [2	0.98; 2.99] .93; 10.73] 1.31; 3.27]
<b>GB vs lipoic aci</b> Direct estimate Indirect estimate Network estimate	1	0.60		_ + +	-0.88 [-2	0.77; 1.42] 2.22; 0.47] 1.00; 0.69]
GB vs placebo Direct estimate Indirect estimate Network estimate	2	0.93	92.5%		-1.05 [-3	I.54; -0.06] 3.72; 1.63] I.53; -0.11]
<b>GB-Vit vs place</b> Direct estimate Indirect estimate Network estimate	1	0.85		*	-0.16 [-2	4.78; -2.51] 2.82; 2.51] 4.15; -2.06]
lipoic acid + Vit Direct estimate Indirect estimate Network estimate	2	0.94	45.0%		-3.88 [-6	1.15; 0.23] 5.64; -1.12] 1.33; 0.01]
melatonin vs pla Direct estimate Indirect estimate Network estimate	1	0.64		***	-0.61 [-	0.97; 0.94] 1.89; 0.67] 1.00; 0.53]
melatonin vs se Direct estimate Indirect estimate Network estimate	1	0.68		*	0.27 [-	1.22; 0.57] 1.05; 1.59] 0.88; 0.60]
sertraline vs pla Direct estimate Indirect estimate Network estimate	1	0.67	ا 1-1	0 -5 0 5	0.31 [-	1.20; 0.62] 1.00; 1.62] 0.84; 0.65]

Supplementary Figure 3: Node-splitting analysis for comparisons with both direct and indirect evidence in the severity network analysis. GB: Ginkgo biloba; Vit: vitamin.

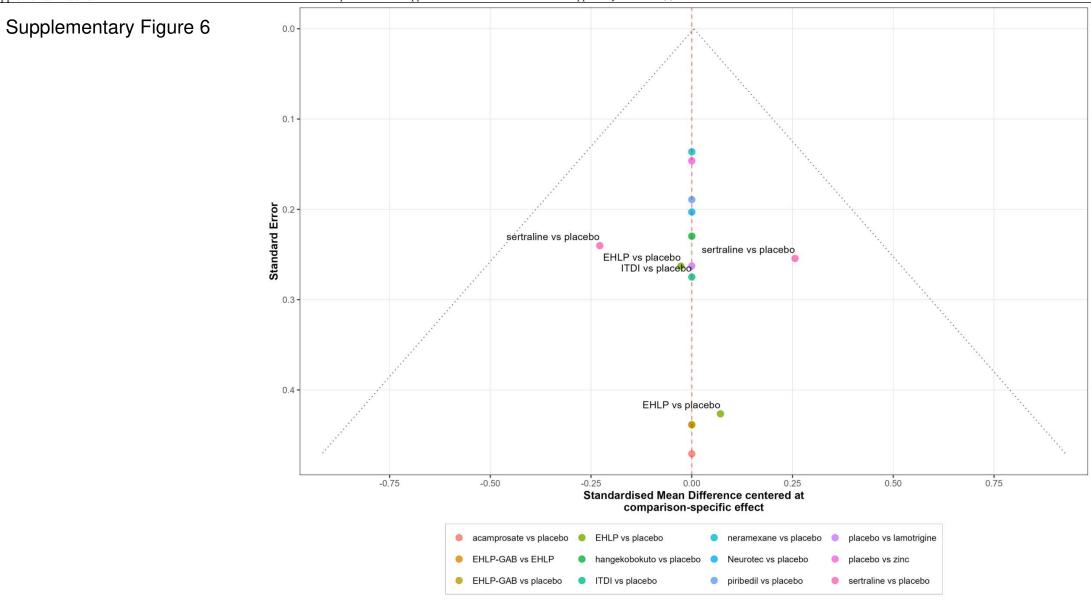


Supplementary Figure 4: Publication bias assessment using funnel plot in the severity network analysis. GB: Ginkgo biloba; Vit: vitamin; ALP-ITDI-LPE: alprazolam+intratympanic dexamethasone+lipo-prostaglandin E1; NOR-TOP: nortriptyline-topiramate; VER-PAR: verapamilparoxetine; VES-PAR: vestipitant+paroxetine; EHLP: enzymolyzed honeybee larvae; CoQ10: coenzyme Q10.

Comparison	Number of Studies	f Direct Evidence	Common Effects Model	SMD 95%-CI
EHLP vs EHLP-( Direct estimate Indirect estimate Network estimate	1	0.83		0.31 [-0.55; 1.17] 0.10 [-1.78; 1.99] 0.28 [-0.51; 1.06]
EHLP-GAB vs pl Direct estimate Indirect estimate Network estimate	1	0.83	-2 -1 0 1 2	-0.28 [-1.14; 0.58] -0.49 [-2.38; 1.40] -0.32 [-1.10; 0.47]

Supplementary Figure 5: Node-splitting analysis for comparisons with both direct and indirect evidence in the annoyance network analysis. EHLP: enzymolyzed honeybee larvae; GAB: gabapentin.

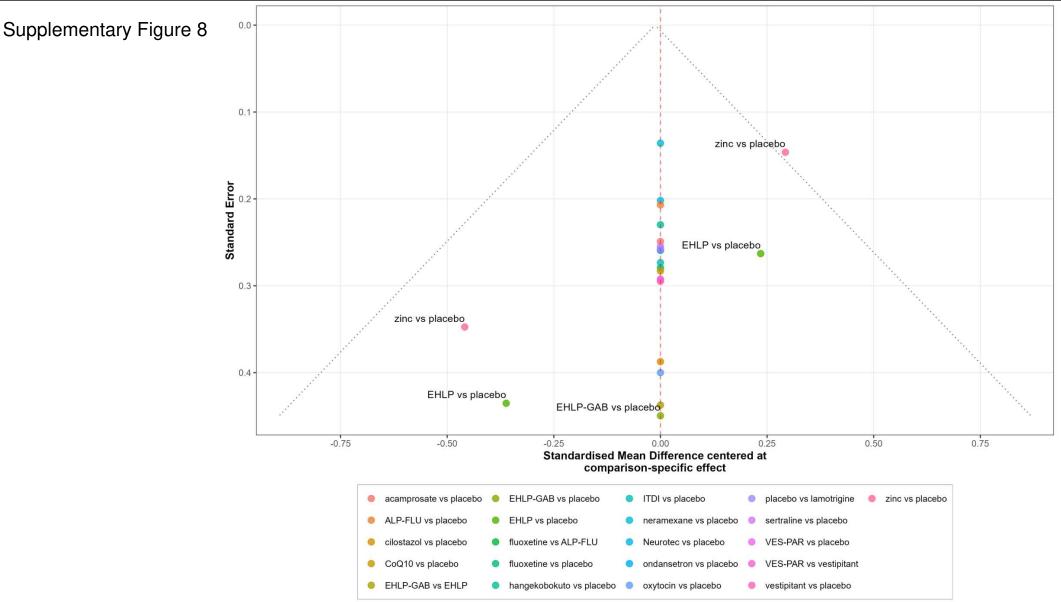
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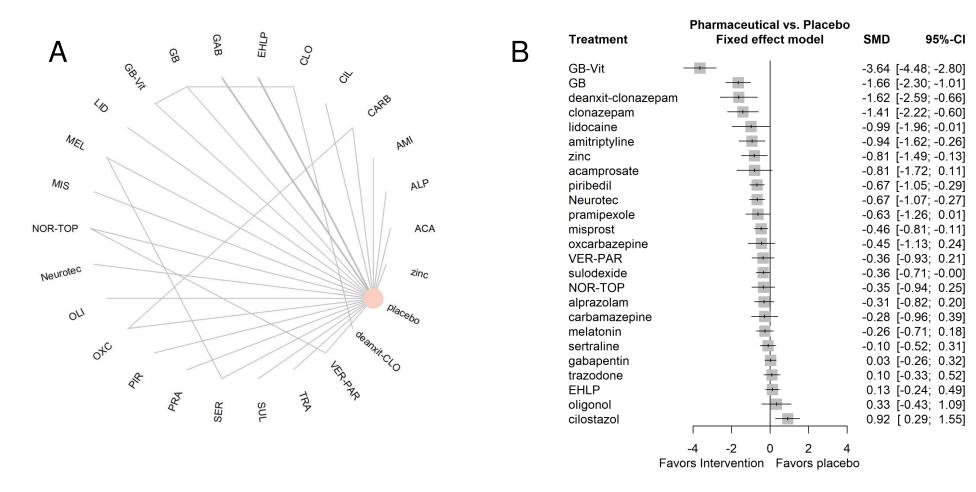
Supplementary Figure 6: Publication bias assessment using funnel plot in the annoyance network analysis. EHLP: enzymolyzed honeybee larvae; GAB: gabapentin.

Comparison	Number of Studies	f Direct Evidence	Random Effects Model	SMD 95%-CI
EHLP vs EHLP-( Direct estimate Indirect estimate Network estimate	1	0.86		0.15 [-1.00; 1.30] — 1.39 [-1.45; 4.22] 0.32 [-0.74; 1.39]
EHLP-GAB vs pl Direct estimate Indirect estimate Network estimate	1	0.84	4 -2 0 2	-0.84 [-2.01; 0.33] 0.36 [-2.37; 3.08] -0.66 [-1.73; 0.42]

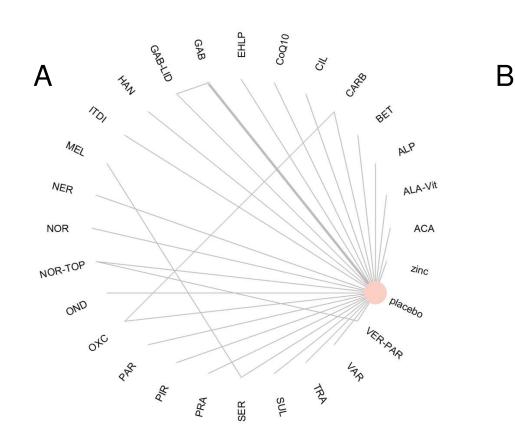
Supplementary Figure 7: Node-splitting analysis for comparisons with both direct and indirect evidence in the loudness network analysis, EHLP: enzymolyzed honeybee larvae; GAB: gabapentin.



Supplementary Figure 8: Publication bias assessment using funnel plot in the loudness network analysis, ITDI: intratympanic dexamethasone; EHLP: enzymolyzed honeybee larvae; GAB: gabapentin; ALP-FLU: alprazolam+fluoxetine; VES-PAR: vestipitant+paroxetine.

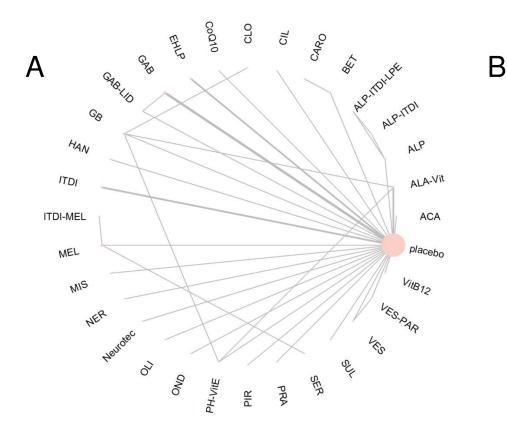


Supplementary Figure 9: A. Network structure of changes in severity of tinnitus with per protocol results. B. Forest plot of the changes in severity of tinnitus with per protocol results. The effect size less than zero indicates the treatment was associated with higher improvement in severity of tinnitus than the placebo. ALA: α-lipoic acid; ACA: acamprosate; ALP: alprazolam; AMI: amitriptyline; CARB: carbamazepine; CIL: cilostazol; CLO: clonazepam; EHLP: enzymolyzed honeybee larvae; GAB: gabapentin; LID: lidocaine; GB: ginkgo biloba; MEL: melatonin; MIS: misprost; NOR: nortriptyline; TOP: topiramate; OLI: oligonol; OXC: oxcarbazepine; PAR: paroxetine; PIR: piribedil; PRA: pramipexole; SER: sertraline; SUL: sulodexide; TRA: trazodone; VER: verapamil.



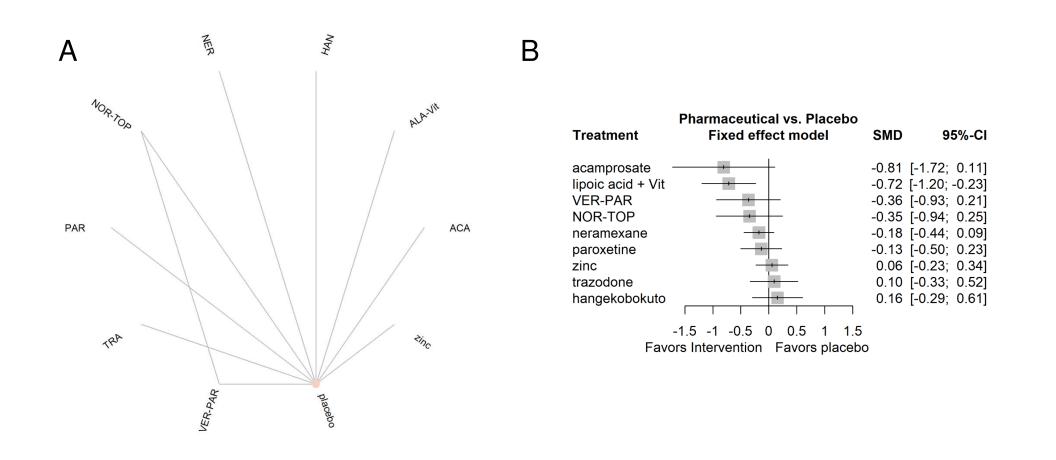
Treatment	Pharmaceutical vs. Placebo Fixed effect model	SMD	95%-CI
gabapentin-lidocain acamprosate		-0.81	[-1.36; -0.31] [-1.72; 0.11]
lipoic acid + Vit		-	-1.20; -0.23]
piribedil pramipexole			-1.05; -0.29] [-1.26; 0.01]
melatonin			[-1.30; 0.07]
nortriptyline			-0.91; -0.08]
oxcarbazepine		-	[-1.13; 0.24]
ITDI			-0.78; -0.00]
VER-PAR			[-0.93; 0.21]
sulodexide			-0.71; -0.00]
NOR-TOP		-0.35	[-0.94; 0.25]
alprazolam		-0.31	[-0.82; 0.20]
sertraline			[-0.78; 0.21]
carbamazepine			[-0.96; 0.39]
betahistine			[-0.70; 0.34]
neramexane			[-0.44; 0.09]
paroxetine			[-0.50; 0.23]
gabapentin			[-0.34; 0.18]
ondansetron			[-0.56; 0.45]
CoQ10			[-0.60; 0.51]
EHLP zinc			[-0.49; 0.54] [-0.23; 0.34]
trazodone			[-0.23, 0.34] [-0.33; 0.52]
hangekobokuto			[-0.33, 0.32]
vardenafil			[-0.25; 0.97]
cilostazol			[ 0.29; 1.55]
		0.02	[ 0.20, 1.00]
_	-1.5 -1 -0.5 0 0.5 1 1.5		
Fa	avors Intervention Favors placebo	0	

Supplementary Figure 10: A. Network structure of changes in severity of chronic tinnitus. B. Forest plot of the changes in severity of chronic tinnitus. The effect size less than zero indicates the treatment was associated with higher improvement in severity of tinnitus than the placebo. ALA: α-lipoic acid; ACA: acamprosate; ALP: alprazolam; Vit: vitamin: BET: betahistine; CARB: carbamazepine; CIL: cilostazol; CoQ10: coenzyme Q10; EHLP: enzymolyzed honeybee larvae; GAB: gabapentin; LID: lidocaine; HAN: hangekobokuto; ITDI: intratympanic dexamethasone injection; MEL: melatonin; NER: neramexane; NOR: nortriptyline; TOP: topiramate; OND: ondansetron; OXC: oxcarbazepine; PAR: paroxetine; PIR: piribedil; PRA: pramipexole; SER: sertraline; SUL: sulodexide; TRA: trazodone; VER: verapamil; VAR: vardenafil.



Treatment	Pharmaceutical vs. Placebo Fixed effect model	SMD	95%-CI
caroverine gabapentin-lidoc acamprosate piribedil Neurotec pramipexole lipoic acid + Vit ALP-ITDI-LPE misprost sulodexide alprazolam ITDI ITDI-melatonin betahistine neramexane gabapentin ondansetron CoQ10 melatonin VES-PAR GB VitB12 vestipitant EHLP hangekobokuto clonazepam sertraline oligonol alprazolam-ITDI cilostazol	aine	-0.84 -0.81 -0.67 -0.63 -0.54 -0.48 -0.46 -0.36 -0.31 -0.30 -0.19 -0.18 -0.08 -0.05 -0.05 -0.05 -0.05 -0.05 -0.05 -0.05 0.01 0.05 0.13 0.16 0.26 0.31 0.33 0.38	$\begin{array}{l} [-2.75; -1.16] \\ [-1.36; -0.31] \\ [-1.72; 0.11] \\ [-1.05; -0.29] \\ [-1.07; -0.27] \\ [-1.26; 0.01] \\ [-0.95; -0.13] \\ [-1.16; 0.20] \\ [-0.95; -0.13] \\ [-1.16; 0.20] \\ [-0.81; -0.11] \\ [-0.71; -0.00] \\ [-0.81; -0.11] \\ [-0.71; -0.00] \\ [-0.82; 0.20] \\ [-0.81; -0.11] \\ [-0.71; -0.00] \\ [-0.71; -0.00] \\ [-0.71; -0.00] \\ [-0.71; -0.00] \\ [-0.71; -0.00] \\ [-0.71; -0.00] \\ [-0.71; -0.00] \\ [-0.71; -0.00] \\ [-0.70; 0.73] \\ [-0.29; 0.38] \\ [-0.29; 0.61] \\ [-0.29; 0.61] \\ [-0.32; 1.07] \\ [-0.32; 1.07] \\ [-0.29; 1.55] \end{array}$
	Favors Intervention Favors placebo	D	

Supplementary Figure 11: A. Network structure of changes in severity of tinnitus using THI. B. Forest plot of the changes in severity of tinnitus using THI. The effect size less than zero indicates the treatment was associated with higher improvement in severity of tinnitus than the placebo. ALA: α-lipoic acid; ACA: acamprosate; ALP: alprazolam; GB: Ginkgo biloba; Vit: vitamin; LPE: lipo-prostaglandin E1; ITDI: intratympanic dexamethasone injection; BET: betahistine; CARO: caroverine; CIL: cilostazol; CLO: clonazepam; CoQ10: coenzyme Q10; EHLP: enzymolyzed honeybee larvae; GAB: gabapentin; LID: lidocaine; HAN: hangekobokuto; MEL: melatonin; MIS: misprost; NER: neramexane; OLI: oligonol; OND: ondansetron; PAR: paroxetine; PH: papaverine hydrochloride; PIR: piribedil; PRA: pramipexole; SER: sertraline; SUL: sulodexide; VES: vestipitant; PAR: pramipexole.



Supplementary Figure 12: A. Network structure of changes in severity of tinnitus of low risk of bias studies. B. Forest plot of the changes in severity of tinnitus of low risk of bias studies. The effect size less than zero indicates the treatment was associated with higher improvement in severity of tinnitus than the placebo. ALA: α-lipoic acid; ACA: acamprosate; HAN: hangekobokuto; NER: neramexane; NOR: nortriptyline; TOP: topiramate; PAR: paroxetine; TRA: trazodone; VER: verapamil.