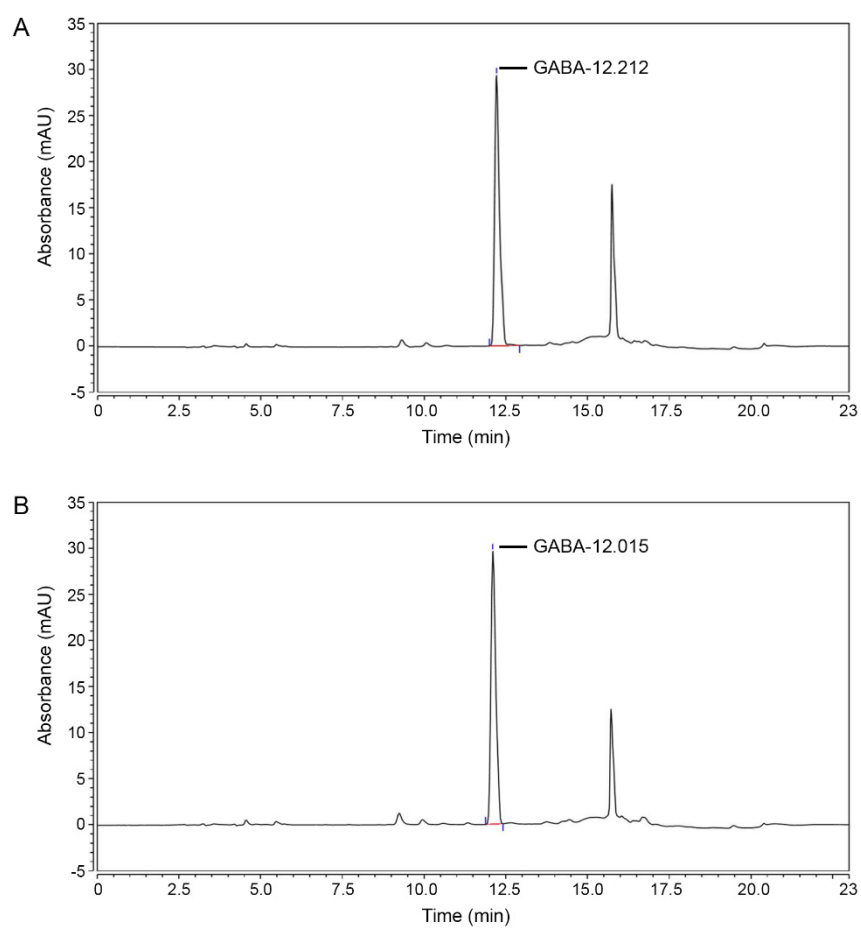


**Figure S1. Schematic diagram of CUMS procedure and animal experimental design.** (A) It is a schematic diagram showing stressors to induce CUMS. Each stressor was provided for 24 h. (B) After a one-week acclimatization period, the CUMS procedure was conducted for 5 weeks. After the CUMS procedure for 5 weeks, RG (40, 90 and 140 mg/kg/day), GABA (30 mg/kg/day), and theanine (50 mg/kg/day) were administered orally at the same time as the CUMS procedure for 4 weeks. Behavioral tests such as FST and TST were conducted at the last oral administration.



**Figure S2. RG chemical analysis.** (A and B) HPLC chromatograph of GABA standard (A) and GABA in RG (B).

**Table S1. List of antibodies for ELISA and DAB staining.**

Antibody	Company	Catalog no.	Dilution rate	
			ELISA	DAB
TNF- $\alpha$	Novus Biologicals	NBPI-19532	1:500 (0.2 $\mu$ L anti-TNF- $\alpha$ : 100 $\mu$ L PBS/well)	1:200 (0.5 $\mu$ L anti-TNF- $\alpha$ : 100 $\mu$ L normal serum/tissue)
IL-6	Santa Cruz Biotechnology	sc-57315	1:500 (0.2 $\mu$ L anti-IL-6 : 100 $\mu$ L PBS/well)	1:100 (1 $\mu$ L anti-IL-6 : 100 $\mu$ L normal serum/tissue)
CD206	Novus Biologicals	NBPI-90020	-	1:200 (0.5 $\mu$ L anti-CD206 : 100 $\mu$ L normal serum/tissue)
CD86	Santa Cruz Biotechnology	sc-19627	-	1:50 (2 $\mu$ L anti-CD86 : 100 $\mu$ L normal serum/tissue)
NF- $\kappa$ B	Cell Signaling Technology	8242S	-	1:200 (0.5 $\mu$ L anti-NF- $\kappa$ B : 100 $\mu$ L normal serum/tissue)

**Table S2. List of primer for qRT-PCR.**

Gene		Primers
<i>Actb</i>	Forward	5'-CCGTAAAGACCTCTATGCCAAC-3'
	Reverse	5'-GCAGTAATCTCCTTCTGCATCC-3'
<i>ASC</i>	Forward	5'-GAAGGACAGTACCAGGCAGTTC-3'
	Reverse	5'-AGGATGGAACAAAGCTGAAGAG-3'
<i>Caspase-1</i>	Forward	5'-AGGACATCCTTCATCCTCAGAA-3'
	Reverse	5'-TTCTAAAGGGCAAACTTGAGG-3'
<i>GSDMD</i>	Forward	5'-TCATGTGTCAACCTGTCAATCA-3'
	Reverse	5'-GACTTTGAAGGAGCCAAAACAC-3'
<i>IL-1<math>\beta</math></i>	Forward	5'-ACCAAGCAACGACAAAATACCT-3'
	Reverse	5'-CCGTCTTTCATTACACAGGACA-3'
<i>IL-18</i>	Forward	5'-GAAGACTCTTGCGTCAACTTCA-3'
	Reverse	5'-CTGATTCCAGGTCTCCATTTTC-3'
<i>NLRP-3</i>	Forward	5'-GAGGCCAAAAGGAAGGAGTATT-3'
	Reverse	5'-GGACCTCATTCTCTTGGATCAG-3'

**Table S3.** Retention time of GABA standard and RG.

Sample	Retention time (min)
GABA Standard	12.26 ± 0.092
RG	12.10 ± 0.001