

Figure S1. Chromatogram for the determination of astragaloside IV in KLX samples by HPLC-ELSD. A: Chromatogram of astragaloside IV standard injection 10 μ l. B: Chromatogram of astragaloside IV standard injection 20 μ l. C: Chromatograms of two parallel KLX samples, each sample was measured twice, injected 20 μ L.

Figure S2. Histopathological results of retinal ganglion cells in the control group, model group, and the KLX intervention group. A: In the control group, the ganglion cells were arranged in a single row to form the innermost layer of the retina. The nucleus was uniform, the organelle structure was clear, and the shape, size and structure of the mitochondrion were normal. (x12000). B: In the model group, the number of mitochondria was significant decreased, and a large number of mitochondria appeared swelling and vacuole degeneration. The number of organelles such as nucleus pyknosis, a large number of vacuoles, polyribosomes, and rough endoplasmic reticulum in the cytoplasm were significantly reduced. (x12000). C: In KLX intervention group, the number of mitochondria seen in the ganglion cells was relatively higher than that of the model group. A few mitochondria were swelling and vacuole degeneration. The number of organelles also increased, the structure became clearer, and the morphology gradually returned to normal. (x12000).

Figure S1.

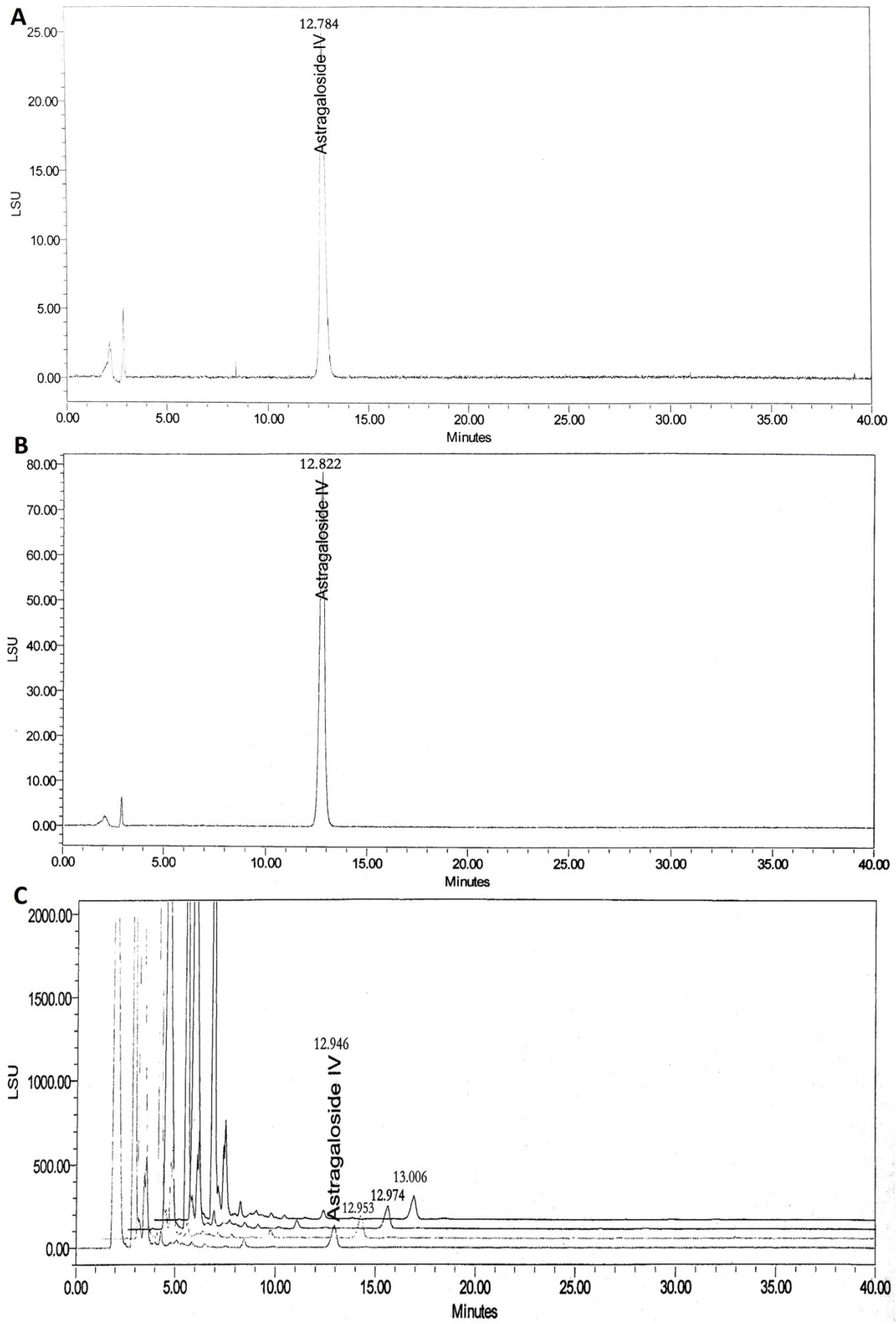


Figure S2.

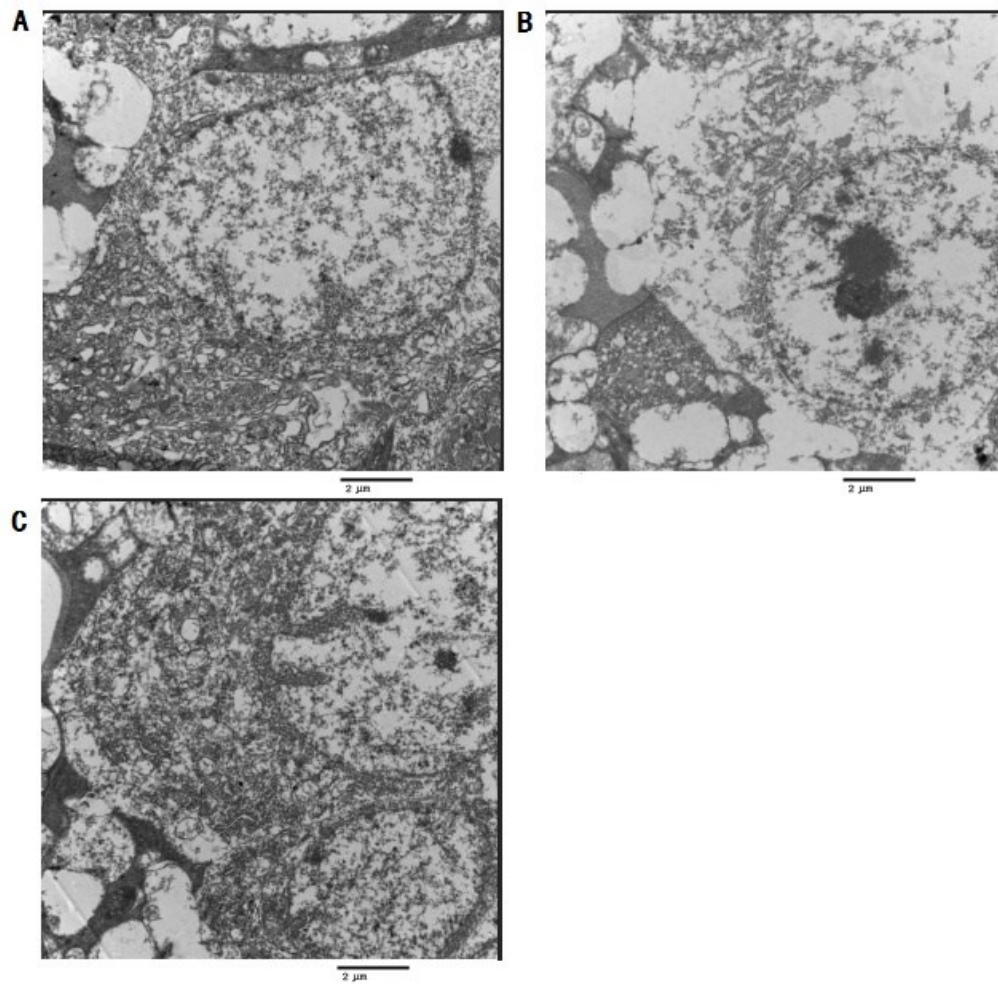


Table S1.The specific content information of astragaloside IV in the KLX sample.

	Number	Precision weighing	Concentration (mg/ml)	Injection (μ l)	Peak area (A)	Astragaloside IV Content (%)
Astragaloside	1--1	4.9752×10^{-3} g	0.2487	10	433365	-
IV standard	1--2	4.9752×10^{-3} g	0.2487	20	1290019	-
KLX	1--1	3.0015g	0.3644	20	2352654	0.1314
	1--2	3.0015g	0.3668	20	2376746	0.1323
	2--1	3.0028g	0.3776	20	2488664	0.1361
	2--2	3.0028g	0.3910	20	2524028	0.1374

(Standard: The KLX sample contains astragali radix (*Astragalusmembranaceus* (Fisch.) based on astragaloside IV ($C_{41}H_{68}O_{14}$), which should not be less than 0.061%.)

Table S2. Detailed identification information of serum lipid biomarkers of DR detected by UHPLC-Q-TOF/MS (IDA) in positive and negative ion mode.

NO.	Metabolite name	Retention time (min)	m/z	Scan mode	Formula	Compound ID	HMDB	KEGG	Change trend	Statistical significance
1	SM(d18:1/22:0)	4.53	787.6690	ESI+	C ₄₅ H ₉₁ N ₂ O ₆ P	LMSP03010006	HMDB0012103	C00550	▼	**
2	Sphinganine 1-phosphate	6.28	382.2718	ESI+	C ₁₈ H ₄₀ NO ₅ P	LMSP01050002	HMDB0001383	C01120	▲	**
3	LysoPC(18:3(6Z,9Z,12Z))	6.31	518.3245	ESI+	C ₂₆ H ₄₈ NO ₇ P	LMGP01050128	HMDB0010387	C04230	▼	**
4	LysoPC(22:6(4Z,7Z,10Z,13Z,16Z,19Z))	6.76	568.3408	ESI+	C ₃₀ H ₅₀ NO ₇ P	LMGP01050056	HMDB0010404	C04230	▲	*
5	LysoPC(20:3(8Z,11Z,14Z))	7.28	546.3566	ESI+	C ₂₈ H ₅₂ NO ₇ P	LMGP01050133	HMDB0010394	C04230	▲	**
6	LysoPC(18:1(9Z))	7.65	522.3568	ESI+	C ₂₆ H ₅₂ NO ₇ P	LMGP01050032	HMDB0002815	C04230	▲	**
7	LysoPC(P-18:1(9Z))	8.68	506.3624	ESI+	C ₂₆ H ₅₂ NO ₆ P	LMGP01070012	HMDB0010408	C04230	▲	**
8	LysoPC(18:0)	8.71	546.3535	ESI+	C ₂₆ H ₅₄ NO ₇ P	LMGP01050026	HMDB0010384	C04230	▲	**
9	Docosahexaenoic acid	9.38	329.2484	ESI+	C ₂₂ H ₃₂ O ₂	LMFA01030185	HMDB0002183	C06429	▲	**
10	Arachidonic acid	9.58	305.2483	ESI+	C ₂₀ H ₃₂ O ₂	LMFA01030001	HMDB0001043	C00219	▲	**
11	Prostaglandin D ₂	3.93	351.2164	ESI-	C ₂₀ H ₃₂ O ₅	LMFA03010004	HMDB0001403	C00696	▲	**
12	Cortisol	4.10	361.2005	ESI-	C ₂₁ H ₃₀ O ₅	LMST02030001	HMDB0000063	C00735	▲	**
13	Cortisone	4.28	359.1849	ESI-	C ₂₁ H ₂₈ O ₅	LMST02030090	HMDB0002802	C00762	▲	**
14	15(S)-HETE	4.29	365.2321	ESI-	C ₂₀ H ₃₂ O ₃	LMFA03060001	HMDB0003876	C04742	▲	**
15	Thromboxane A ₂	4.33	351.2163	ESI-	C ₂₀ H ₃₂ O ₅	LMFA03030001	HMDB0001452	C02198	▲	**
16	Dihydrocortisol	4.40	363.2162	ESI-	C ₂₁ H ₃₂ O ₅	LMST02030204	HMDB0003259	C05471	▲	**
17	Androstenedione	4.49	331.1904	ESI-	C ₁₉ H ₂₆ O ₂	LMST02020007	HMDB0000053	C00280	▲	**
18	Dehydroepiandrosterone	4.66	333.2058	ESI-	C ₁₉ H ₂₈ O ₂	LMST02020021	HMDB0000077	C01227	▲	**
19	Prostaglandin A ₂	4.79	333.2061	ESI-	C ₂₀ H ₃₀ O ₄	LMFA03010035	HMDB0002752	C05953	▲	**
20	Leukotriene B ₄	4.89	335.2216	ESI-	C ₂₀ H ₃₂ O ₄	LMFA03020001	HMDB0001085	C02165	▲	**

21	14,15-DiHETrE	5.03	337.2376	ESI-	C ₂₀ H ₃₄ O ₄	LMFA03050010	HMDB0002265	C14775	▲	**
22	Testosterone	5.06	333.2061	ESI-	C ₁₉ H ₂₈ O ₂	LMST02020002	HMDB0000234	C00535	▲	**
23	9,10-DHOME	5.71	313.2377	ESI-	C ₁₈ H ₃₄ O ₄	LMFA02000229	HMDB0004704	C14828	▼	**
24	15-KETE	5.80	317.2114	ESI-	C ₂₀ H ₃₀ O ₃	LMFA03060051	HMDB0010210	C04577	▲	**
25	Leukotriene A ₄	7.56	317.2113	ESI-	C ₂₀ H ₃₀ O ₃	LMFA03020023	HMDB0001337	C00909	▼	**
26	Oleic acid	7.98	327.2534	ESI-	C ₁₈ H ₃₄ O ₂	LMFA01030002	HMDB0000207	C00712	▼	**
27	LysoPA(16:0/0:0)	8.57	409.2341	ESI-	C ₁₉ H ₃₉ O ₇ P	LMGP10050006	HMDB0007853	C00416	▼	**
28	Ganglioside GA2 (d18:1/18:0)	8.67	1091.7175	ESI-	C ₅₆ H ₁₀₄ N ₂ O ₁₈	LMSP0503AA02	HMDB0004891	C06135	▲	*
29	Eicosapentaenoic acid	8.91	301.2169	ESI-	C ₂₀ H ₃₀ O ₂	LMFA01030759	HMDB0001999	C06428	▲	**
30	γ-Linolenic acid	9.13	277.2173	ESI-	C ₁₈ H ₃₀ O ₂	LMFA01030141	HMDB0003073	C06426	▼	**

(Note: “▲” indicated an increased intensity of potential biomarkers in the model group, and “▼” indicated a decreased intensity of potential biomarkers in the model group. □ Represented significant difference (p < 0.05). □□ Represented very significant difference (p < 0.01).)