

## Supplementary material

### 1. Search strategy

We used the following combined random words and subject terms: “leptin” and “systemic lupus erythematosus”. The subject terms in PubMed, Embase and Cochrane Library are Mesh terms, Emtree terms and Mesh terms, respectively.

1.1 PubMed: (“leptin [Mesh Terms]” OR “leptin [All Fields]” OR “Obese Protein [All Fields]” OR “Obese Gene Product [All Fields]” OR “Gene Product, Obese [All Fields]” OR “Ob Gene Product [All Fields]” OR “Gene Product, Ob [All Fields]” OR “Ob Protein [All Fields]”) AND (“Lupus Erythematosus, Systemic [Mesh Terms]” OR “Lupus Erythematosus, Systemic [All Fields]” OR “Systemic Lupus Erythematosus [All Fields]” OR “Lupus Erythematosus Disseminatus [All

Fields]” OR “Libman-Sacks Disease [All Fields]” OR “Disease, Libman-Sacks [All Fields]” OR “Libman Sacks Disease [All Fields]”).

1.2 Embase: (“leptin’/exp OR ‘leptin’ OR ‘obese protein’ OR ‘obese gene product’ OR ‘gene product, obese’ OR ‘ob gene product’ OR ‘gene product, ob’ OR ‘ob protein’) AND (“systemic lupus erythematosus’/exp OR ‘systemic lupus erythematosus’ OR ‘lupus erythematosus, systemic’ OR ‘lupus erythematosus disseminatus’ OR ‘libmansacks disease’ OR ‘disease, libmansacks’ OR ‘libman sacks disease’).

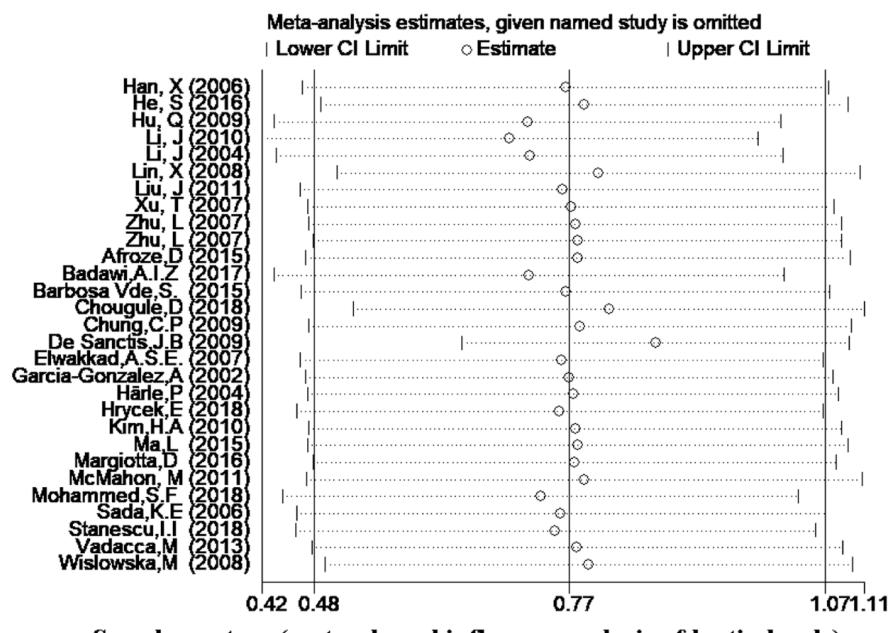
1.3 Cochrane: (“MeSH descriptor: [Leptin] explode all trees” OR “(leptin):ti,ab,kw” OR “(Obese Protein):ti,ab,kw” OR “(Obese Gene Product):ti,ab,kw” OR “(Gene Product, Obese):ti,ab,kw” OR “(Ob Gene Product):ti,ab,kw”

OR “(Gene Product, Ob):ti,ab,kw” OR “(Ob Protein):ti,ab,kw”) AND (“MeSH descriptor: [Lupus Erythematosus, Systemic] explode all trees” OR “(Lupus Erythematosus, Systemic):ti,ab,kw” OR “(Systemic Lupus Erythematosus):ti,ab,kw” OR “(Lupus Erythematosus Disseminatus):ti,ab,kw” OR “(Libman-Sacks Disease):ti,ab,kw” OR “(Disease, Libman-Sacks):ti,ab,kw” OR “(Libman Sacks Disease):ti,ab,kw”)

1.4 CNKI: (“leptin” [key words]) AND (“Systemic Lupus Erythematosus” [key words])

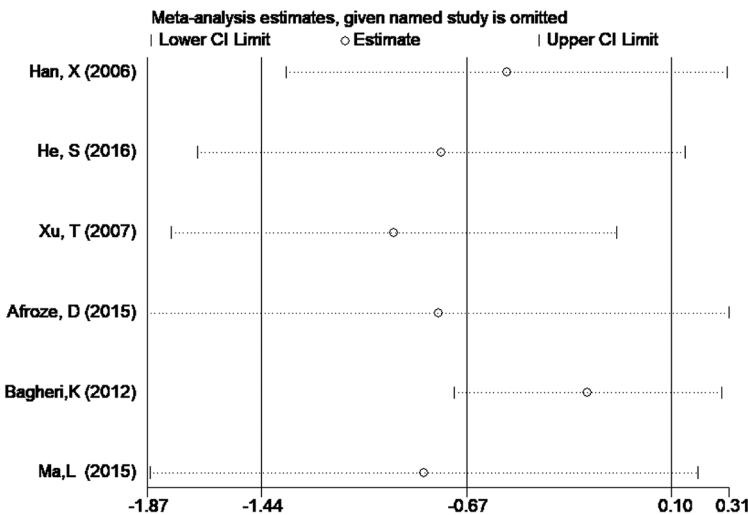
1.5 Wanfang: (“leptin” [key words]) AND (“Systemic Lupus Erythematosus” [key words])

1.6 VIP: (“leptin” [key words]) AND (“Systemic Lupus Erythematosus” [key words])



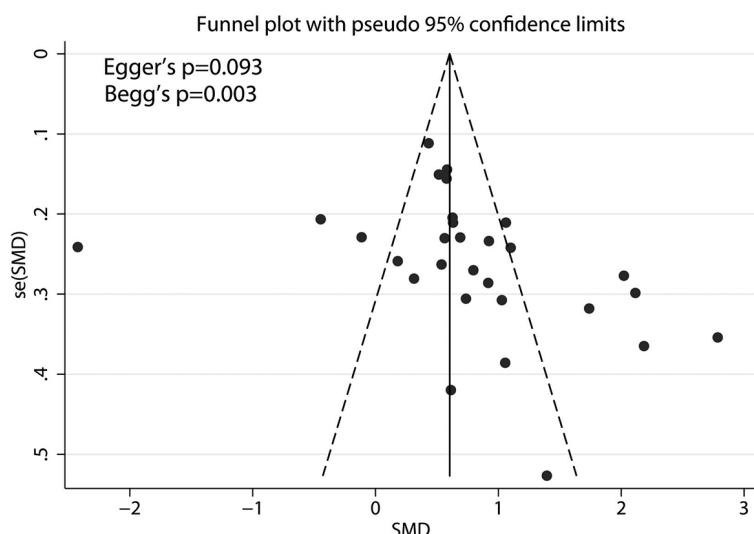
**Supplementary (metan-based influence analysis of leptin levels)**

**Supplementary Fig. S1.** Sensitivity analysis of leptin levels.

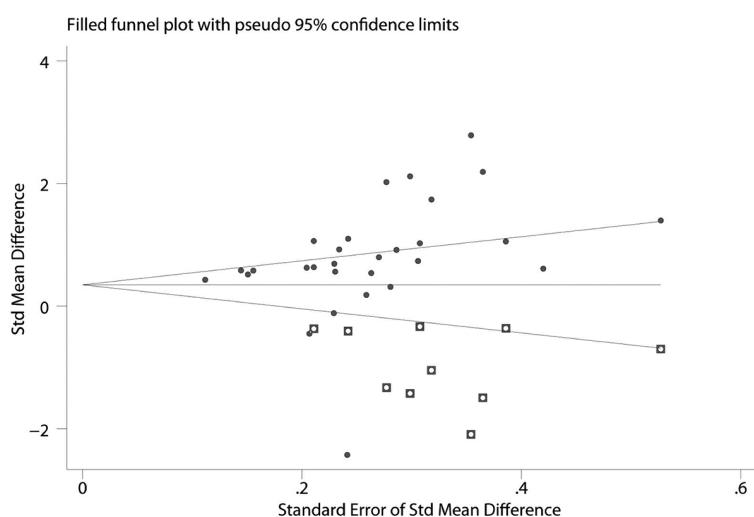


**Supplementary (metan-based influence analysis of LepR levels)**

**Supplementary Fig. S2.** Sensitivity analysis of lepR levels.



**Supplementary Fig. S3.** Funnel plot.



**Supplementary (funnel plot of leptin levels with trim and fill method)**

**Supplementary Fig. S4.** Funnel plot with trim and fill method.