

## Supplementary file 1

### 1. PubMed

Search	Query	Items found
#1	(((((Probiotic[Text Word] OR (Probiotic[MeSH Terms])) OR (Probiotic therapy[Text Word])) OR (Probiotic effect[Text Word])) OR (Probiotic treatment[Text Word])))	27215
#2	((((((halitosis[Text Word] OR (halitosis[MeSH Terms])) OR (malodor[Text Word])) OR (oral malodor[Text Word])) OR (malodour[Text Word])) OR (bad breath[Text Word])) OR (fedor oris[Text Word]))	2788
#3	#1 and #2	68

### 2. Web of science

Search	Query	Items found
#1	((TS=(Probiotic)) OR TS=(Probiotic therapy)) OR TS=(Probiotic effect) OR TS=(Probiotic treatment)	28458
#2	((((TS=(halitosis)) OR TS=(malodor)) OR TS=(oral malodor)) OR TS=(malodour)) OR TS=(bad breath)) OR TS=(fedor oris)	3018
#3	#1 and #2	42

### 3. Embase ovid search strategy

Search	Query	Items found
#1	((Probiotic or Probiotic or Probiotic therapy or Probiotic effect or Probiotic treatment) and (halitosis or halitosis or malodor or oral malodor or malodour or bad breath or fedor oris)).af.	119

### 4. Cochrane Central Register of Controlled Trials (CENTRAL) search strategy

Search	Query	Items found
#1	MeSH descriptor: [Halitosis] explode all trees	236
#2	(halitosis):ti,ab,kw (Word variations have been searched)	573
#3	(malodor):ti,ab,kw (Word variations have been searched)	399
#4	(oral malodor):ti,ab,kw (Word variations have been searched)	300
#5	(malodour):ti,ab,kw (Word variations have been searched)	399
#6	(bad breath):ti,ab,kw (Word variations have been searched)	258
#7	(fedor oris):ti,ab,kw (Word variations have been searched)	0
#8	#1 or #2 or #3 or #4 or #5 or #6 or #7	996
#9	MeSH descriptor: [Probiotics] explode all trees	2571

#10	(Probiotic):ti,ab,kw (Word variations have been searched)	8519
#11	(Probiotic therapy):ti,ab,kw (Word variations have been searched)	3834
#12	(Probiotic effect):ti,ab,kw (Word variations have been searched)	6398
#13	(Probiotic treatment):ti,ab,kw (Word variations have been searched)	4579
#14	#9 or #10 or #11 or #12 or #13	8603
#15	#8 and #14	8

#### 5. Gray literature in European and Google Scholar

Search	Query	Items found
#1	Probiotic OR Probiotic therapy OR Probiotic effect OR Probiotic treatment AND halitosis OR malodor OR oral malodor OR malodour OR bad breath OR fetor oris	1