All queries shown below are drawn from the one day query log file provided by the NLM, which has three columns: unique user identification, time stamp, and query text, separated by the pipe (|) sign. Duplicated queries (e.g. chicken globin regulation) and misspells (e.g. chken) are found in the log and are not removed or corrected for authenticity. Two groups of queries are selected:

1. **The highlighted queries (in yellow) were manually judged as unrelated by authors of Herskovic et al., 2007. However, these 11 pairs of consecutive queries are classified as related by the contextual similarity (i.e. the PubMed distance < 0.5) in our study. Simple explanation for each of the 11 contextual relationships is added (marked by asterisk).**

7oW7pYIOFloAAAc6c54AAAAB|17041|chken globin regulation
7oW7pYIOFloAAAc6c54AAAAB|17062|chicken globin regulation
7oW7pYIOFloAAAc6c54AAAAB|17110|chicken globin regulation
7oW7pYIOFloAAAc6c54AAAAB|17111|chicken globin regulation
7oW7pYIOFloAAAc6c54AAAAB|27127|EKLF
7oW7pYIOFloAAAc6c54AAAAB|27127|EKLF
* The EKLF gene plays a role in the globin regulation in chicken.

jek0H4IOFt4AAA1WfxkAAAAJ|48201|htra2 and omi
jek0H4IOFt4AAA1WfxkAAAAJ|49367|jnk and smac
jek0H4IOFt4AAA1WfxkAAAAJ|50885|ZERVOS as
jek0H4IOFt4AAA1WfxkAAAAJ|51442|htra2 and RNAi
jek0H4IOFt4AAA1WfxkAAAAJ|51450|htra2 and siRNA
jek0H4IOFt4AAA1WfxkAAAAJ|51502|jnk and smac
jek0H4IOFt4AAA1WfxkAAAAJ|53100|bid and caspase independent cell death
jek0H4IOFt4AAA1WfxkAAAAJ|53180|caspase independent cell death
* jnk, smac, and bid are genes involved in the cell death

exVnaoIOFj0AAGlGfucAAAAW|32806|sec23
exVnaoIOFj0AAGlGfucAAAAW|32849|sec13
exVnaoIOFj0AAGlGfucAAAAW|32968|ER exit sites
exVnaoIOFj0AAGlGfucAAAAW|33006|COP II
* sec13 is localized to ER exit sites and is essential for ER-Golgi transport.

exVnaoIOFj0AAGlGfucAAAAW|32806|sec23
exVnaoIOFj0AAGlGfucAAAAW|32849|sec13
exVnaoIOFj0AAGlGfucAAAAW|32968|ER exit sites
exVnaoIOFj0AAGlGfucAAAAW|33006|COP II
* Transport from the endoplasmic reticulum (ER) to the Golgi complex requires assembly of the COPII coat complex at ER exit sites.

hy2B4IIOFj0AAGUWLk0AAAAL|80254|SOCS3
hy2B4IIOFj0AAGUWLk0AAAAL|82364|Leptin And Yoshimura
hy2B4IIOFj0AAGUWLk0AAAAL|86244|Niwa And SOCS-3
hy2B4IIOFj0AAGUWLk0AAAAL|86338|Weber And SOCS-3
* Yoshimura published an article entitled "Socs3 deficiency in the brain elevates leptin sensitivity and confers resistance to diet-induced obesity".

6o7odoIOFloAAHYG66cAAAAM|17497|mfe2p
6o7odoIOFloAAHYG66cAAAAM|17548|fox2p
6o7odoIOFloAAHYG66cAAAAM|17612|hansenula oleate
6o7odoIOFloAAHYG66cAAAAM|17812|hansenula oleic acid
* mfe2p is also called fox2p in the literature.

0d5e3YIOFloAAHL4CSMAAAAP|17083|CALM-PD REAL PET neuroprotection
0d5e3YIOFloAAHL4CSMAAAAP|17103|CALM-PD REAL PET
0d5e3YIOFloAAHL4CSMAAAAP|17103|CALM-PD REAL PET
0d5e3YIOFloAAHL4CSMAAAAP|17861|CALM-PD neuroprotective
0d5e3YIOFloAAHL4CSMAAAAP|18245|CALM-PD SPECT PET
0d5e3YIOFloAAHL4CSMAAAAP|18842|Marek progression parkinson
0d5e3YIOFloAAHL4CSMAAAAP|30127|Clarke Guttman dopamine agonist monotherapy
* Clarke and Guttman co-authored a paper "Dopamine agonist monotherapy in Parkinson's disease" in 2002.

1slYwYIOFkUAACuQP78AAAAN|30050|sumo
1slYwYIOFkUAACuQP78AAAAN|35244|nedd8
1slYwYIOFkUAACuQP78AAAAN|35292|fat10
1slYwYIOFkUAACuQP78AAAAN|47327|sumo
* A yeast two-hybrid screen identified NEDD8 ultimate buster-1L (NUB1L) as a non-covalent binding partner of FAT10, and this interaction was confirmed by coimmunoprecipitation and glutathione S-transferase pull-down experiments.

1slYwYIOFkUAACuQP78AAAAN|30050|sumo
1slYwYIOFkUAACuQP78AAAAN|35244|nedd8
1slYwYIOFkUAACuQP78AAAAN|35292|fat10
1slYwYIOFkUAACuQP78AAAAN|47327|sumo
* sumo and fat10 are both ubiquitin homologues.

-2-MYYIOFj4AABNywugAAAAC|39322|EHEC resistance
-2-MYYIOFj4AABNywugAAAAC|39428|E.coli 0157:H7 AND antibiotic resistance
-2-MYYIOFj4AABNywugAAAAC|39509|E.coli 0157:H7 AND microbial resistance
-2-MYYIOFj4AABNywugAAAAC|39516|E.coli 0157:H7 AND resistance
-2-MYYIOFj4AABNywugAAAAC|39525|EHEC 0157:H7 AND resistance

-2-MYYIOFj4AABNywugAAAAC|39531|EHEC AND resistance
-2-MYYIOFj4AABNywugAAAAC|40811|E.coli AND resistance
-2-MYYIOFj4AABNywugAAAAC|41388|ESBL
-2-MYYIOFj4AABNywugAAAAC|41388|ESBL
-2-MYYIOFj4AABNywugAAAAC|41959|ecoli and resistance
-2-MYYIOFj4AABNywugAAAAC|41959|ecoli and resistance
-2-MYYIOFj4AABNywugAAAAC|41969|E. coli AND resistance
* The strain, known as Extended Spectrum Beta Lactamase (ESBL) E. coli, was first discovered in Wales in 2004.

2. **By contrast, below are examples of queries (highlighted in grey) where we failed to identify a relationship by either the lexical similarity or contextual similarity.**

FWIDAYIOFkIAAGjJ2roAAAAD|5330|caffeine
FWIDAYIOFkIAAGjJ2roAAAAD|5366|chemistry of caffeine
FWIDAYIOFkIAAGjJ2roAAAAD|5366|chemistry of caffeine
FWIDAYIOFkIAAGjJ2roAAAAD|5930|caffeine
FWIDAYIOFkIAAGjJ2roAAAAD|5945|chemistry of caffeine
FWIDAYIOFkIAAGjJ2roAAAAD|5945|chemistry of caffeine
FWIDAYIOFkIAAGjJ2roAAAAD|6951|sweat body temperature
FWIDAYIOFkIAAGjJ2roAAAAD|6951|sweat body temperature

7QBaIIOFt4AAA7AHNcAAAAP|47859|inhibitory rna
7QBaIIOFt4AAA7AHNcAAAAP|52400|newborn bone marrow misunderstood
7QBaIIOFt4AAA7AHNcAAAAP|52410|newborn bone marrow mother
7QBaIIOFt4AAA7AHNcAAAAP|54977|bone marrow compliance mother newborn
7QBaIIOFt4AAA7AHNcAAAAP|54986|bone marrow compliance mother

q91lgYIOFkAAADRoP4QAAAAB|50829|Phasmida
q91lgYIOFkAAADRoP4QAAAAB|50830|Phasmida
q91lgYIOFkAAADRoP4QAAAAB|50854|"Carlberg U"[Author]
q91lgYIOFkAAADRoP4QAAAAB|75294|Araneus diadematus
q91lgYIOFkAAADRoP4QAAAAB|75295|Araneus diadematus

OD-tPYIOFksAAHvYpr0AAAAE|78945|functional groups
OD-tPYIOFksAAHvYpr0AAAAE|78960|cmfda protocol
OD-tPYIOFksAAHvYpr0AAAAE|79700|glass silanization

9UAO3IIOFkMAAFSwWCwAAAAH|13381|"Chechneva O"[Author]
9UAO3IIOFkMAAFSwWCwAAAAH|33176|dentate gyrus neurogenesis
9UAO3IIOFkMAAFSwWCwAAAAH|33744|dentate gyrus neurogenesis leaarning

9UAO3IIOFkMAAFSwWCwAAAAH|33748|dentate gyrus neurogenesis learning
9UAO3IIOFkMAAFSwWCwAAAAH|43036|metabotropic glutamate receptor blocker
9UAO3IIOFkMAAFSwWCwAAAAH|43088|metabotropic glutamate receptor blocker MCPG

BMsSDYIOFkAAAFlDoigAAAAK|7447|cavois greene
BMsSDYIOFkAAAFlDoigAAAAK|7453|cavrois greene
BMsSDYIOFkAAAFlDoigAAAAK|12921|bar alizon

5lFnr4IOFkgAABS22hMAAAAF|34669|diabetes
5lFnr4IOFkgAABS22hMAAAAF|34732|diabetes
5lFnr4IOFkgAABS22hMAAAAF|34848|"Dermatitis, Seborrheic"[MeSH]

q1ebz4IOFksAAEcT4DIAAAAf|46659|SWEAT TEST
q1ebz4IOFksAAEcT4DIAAAAf|46681|BNP

Yaci3YIOFl0AAEDaeZAAAAAC|71034|xfog
Yaci3YIOFl0AAEDaeZAAAAAC|71044|friend of gata
Yaci3YIOFl0AAEDaeZAAAAAC|71155|friend of gata xenopus
Yaci3YIOFl0AAEDaeZAAAAAC|73893|BMP4 knockout
Yaci3YIOFl0AAEDaeZAAAAAC|73935|BMP4 knockout mice
Yaci3YIOFl0AAEDaeZAAAAAC|73948|"BMP4 knockout mouse"
Yaci3YIOFl0AAEDaeZAAAAAC|73958|BMP4 knockout mouse
Yaci3YIOFl0AAEDaeZAAAAAC|74270|BMP meterodimers
Yaci3YIOFl0AAEDaeZAAAAAC|74274|BMP heterodimers

4mZp6oIOFlsAAEvBJ9oAAAAR|47425|touch faster recovery
4mZp6oIOFlsAAEvBJ9oAAAAR|47454|doctor's touch faster recovery
4mZp6oIOFlsAAEvBJ9oAAAAR|47458|doctor's touch
4mZp6oIOFlsAAEvBJ9oAAAAR|47558| touch patients
4mZp6oIOFlsAAEvBJ9oAAAAR|61611|Physician-owned health care
4mZp6oIOFlsAAEvBJ9oAAAAR|61834|physician-owned healthcare
4mZp6oIOFlsAAEvBJ9oAAAAR|62100|physician-owned healthcare corporations

5pwi4IOFpIAAHVVgi8AAABO|39292|GERD AND pediatrics
5pwi4IOFpIAAHVVgi8AAABO|39293|GERD AND pediatrics
5pwi4IOFpIAAHVVgi8AAABO|42886|immunization refusal
5pwi4IOFpIAAHVVgi8AAABO|42886|immunization refusal