

SciE~Lex

Diccionario Electrónico de Combinaciones Léxicas
en el Inglés Científico

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What is SciE-Lex?

SciE-Lex is a **lexical database** of the most usual **collocations of English non-technical words** used in **scientific language**. This lexical database gives information about the meanings and the grammatical and collocational patterns of general words used in scientific English.

SciE-Lex was prompted by the shortage of reference tools offering such information, since dictionaries of scientific terms usually provide information about the meaning of specialized words and/or their equivalents in other languages.

What is SciE-Lex for?

When encoding a message it is necessary not only to use the correct terms and grammatical structures but also the appropriate lexical combinations and collocations, especially in scientific discourse in which a precise expression of ideas and description of results is required.

As the importance of phraseological choices is recognized, we believe the results of *SciE-Lex* will allow non-native speakers to improve their knowledge of the collocational patterns of English and allow them to communicate more effectively.

Who is SciE-Lex for?

It has been designed to help Spanish scientists to use the correct grammatical patterns of non-technical words and to conform to the conventional collocations used in scientific discourse. Although our database is especially developed for Spanish speakers it can also be adapted to other languages.

What information does *SciE-Lex* contain?

SciE-Lex is based on the analysis of a 3+ million word corpus of scientific research articles in English from prestige journals from the areas of biology, biochemistry, and biomedicine and provides the following information:

Word class (*C*): this is the first parameter which has to be taken into account, as it determines the sense of a word and its morpho-syntactic features.

Morphological variants (*M*): this information has been included to facilitate the linguistic production of the user.

Equivalent in Spanish (*E*): as our database is especially aimed at Spanish speakers, the equivalent terms are in Spanish, but such a tool can be extended to other languages as well.

Clarification of the sense (*S*): in the case of polysemy, the different senses of a word, both in Spanish and English, have to be distinguished.

Cross-references to related entries (*Ver*): these references show the interdependence between different entries.

Patterns of occurrence (*C*): this parameter displays the different grammatical constructions in which a given sense might occur.

List of collocates (*L*): the most frequent collocates are organized into different semantic fields and they are displayed in alphabetical order.

Examples of real use (*Ex*): examples have been collected from real texts and adapted for pedagogical purposes.

Notes to clarify usage (*N*): notes to highlight special usages or to help users.

Illustration of an entry (the noun *conclusion*):

The screenshot shows the SciE-lex interface with the search term 'conclusion'. The main window displays three entries for the word 'conclusion' in different grammatical categories:

- Entry 1: Adjective (Adj ~)**
 - Form: **C** Adj ~
 - Lemma: L ~ firm, ~ obvious, ~ strong, ~ untenable | ~ interesting, ~ significant, ~ surprising, ~ tentative, ~ unexpected
 - Example: Ex The evidence for this firm conclusion is based upon results from experiments.
 - Notes: N (N) [] E [] F []
- Entry 2: Verb (V ~)**
 - Form: **C** V ~
 - Lemma: L draw ~, reach ~, arrive at ~, come to ~ | confirm ~, reinforce ~, substantiate ~, (further) support
 - Example: Ex previous conclusions. The present experiment supports this conclusion.
 - Notes: N *draw ~, reach ~, arrive at ~, come to ~ are equivalent to 'conclude'
- Entry 3: Preposition (Prep ~)**
 - Form: **C** Prep ~
 - Lemma: L in ~
 - Example: Ex In conclusion, our data demonstrate our studies are valid.
 - Notes: N *This is a linking adverbial, which tends to appear at the beginning of a sentence.

Below these entries, there are two more sections for related terms:

- Entry 4: Noun (N)**
 - Form: **C** N
 - Lemma: L finalización, término
 - Example: Ex []
 - Notes: N [] E [] F []
- Entry 5: Preposition (Prep ~)**
 - Form: **C** Prep ~
 - Lemma: L at (the) ~ of (experiment, session, study)
 - Example: Ex At the conclusion of our experiment the covers were carefully examined.
 - Notes: N [] E [] F []

The interface includes navigation controls at the bottom, showing 'Registro: 14' and 'de 30'.

Figure 1

This figure show the following features of *conclusion*:

(C): it is a noun

(M): it is countable (*conclusion, conclusions*)

(E): Spanish equivalent (*conclusión*), which can be further specified if necessary, especially in cases of homonymy or polysemy (See figures 1 and 3).

Next, there are the patterns (C) in which the lexical item can appear, followed by a list of the most frequent collocates and examples illustrating them:

(1) *conclusion* can be preceded by an adjective (*firm, obvious, strong, untenable ...*)

(2) *conclusion* can be the Object and, consequently, can be subcategorised by the delexical verbs *draw, reach, arrive at, come to*, forming restricted collocations, or can occur with free collocates such as *confirm, reinforce, substantiate* or *support*.

The final output of *SciE-Lex* is illustrated by means of the following entry:

Conclusion		
N(1)	[conclusión]	conclusion, conclusions
~ Adj	~ firm, ~ obvious, ~ strong, ~ untenable ~ interesting, ~ significant, ~ surprising, ~ tentative, ~ unexpected The evidence for this firm conclusion is based upon results from experiments. Two recent analyses have led to some tentative conclusions.	
V ~	draw ~, reach ~, arrive at ~, come to ~ confirm ~, reinforce ~, substantiate ~, (further) support Several conclusions can be drawn from these experiments. The same conclusions were drawn by each member of the research group. These results therefore reinforce previous conclusions. The present experiment supports this conclusion. ▶ draw ~, reach ~, arrive at ~, come to ~ are equivalent to 'conclude' This verb usually occurs in the passive.	
Prep ~	in ~ In conclusion, our data demonstrate our studies are valid. ▶ This is a linking adverbial, which tends to appear at the beginning of a sentence.	
N(2)	[finalización, término]	conclusion, conclusions
Prep ~	at (the) ~ of (experiment, session, study) At the conclusion of our experiment the covers were carefully examined.	

Figure 2

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