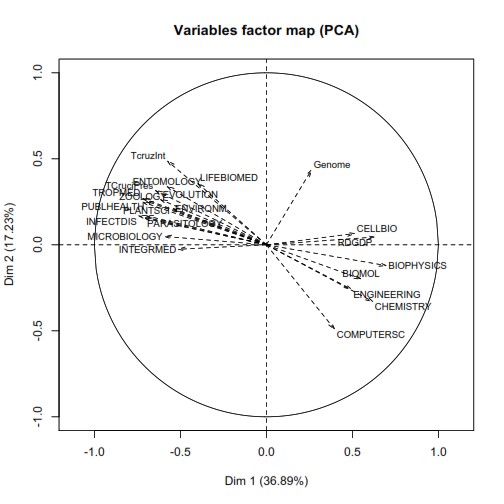
**Description of the method**

1. We have gathered the data on Chagas publications from Web of Science (WoS) through a standard query. We used the following search strategy to obtain articles’ metadata: “TS=Benzinidazol or TS=Benznidazol or TS=Nifurtimox OR TS=Cruzi\* OR TS=chagas OR TS=tripanosoma cruzi OR TS=trypanosoma cruzi OR TS=t. Cruzi”. It was executed on April 01, 2019 and it brought up 24178 articles published from 1921 through April 01, 2019.
2. We then create a network using these papers as nodes and their “bibliographic coupling” (BC) as links. BC links articles that share common references, and it has been shown to represent a good measure of cognitive similarity (Grauwin and Jensen 2011; Kessler 1963). Here, we link papers when they share at least 3 common references, which avoids artificial links by too common references. This leads to a network of 20066 linked records. A total of 4112 records are discarded at this stage, those that do not share (at least) 3 references with *any other* record in our database. Most discarded records are *not* “articles” and have few references. Among the discarded records are "Meeting Abstracts", "Proceedings Papers", "Corrections", "News Items" or "Editorial Material".
3. On the 20066 nodes of the network, we use the Louvain algorithm (Blondel et al. 2008) to maximize modularity and identify 14 clusters with more than 100 articles, leading to 19403 records. These clusters, defined by shared references, represent the relevant subfields for research in Chagas research. They are presented in the main text as well as in this annex. The reader can check that these clusters do represent the whole field of chagas research as recorded by the Web of Science, and that no spurious cluster (ie foreign to Chagas) is present, which further validates the standard query.
4. For the quantitative analysis, in order to avoid artifacts from too small countries, we keep only countries that have more than 50 records. To avoid setting an arbitrary threshold on the size of the chagas subfields, we keep all the clusters gathering more than 100 articles and use their size as weights in the statistical analysis.
5. Then, we compute the proportion of articles for each country in each cluster. Articles co-authored by several countries are counted once for each country appearing in authors’ list. This corresponds to the ‘effort’ or ‘output’ that each country devotes to each subfield of chagas research. By normalizing by the corresponding world ‘effort’, one recovers the well-known “Revealed comparative advantage” (RCA) index introduced by Béla Balassa (Balassa 1965) and widely used to study the relative efforts of countries in different domains, such as exports of different products), or scientific output (May 1997). It is worth emphasizing that this normalization deletes any direct size effect, and gives therefore the same weight in the analysis to all the countries.
6. Finally, we perform a Principal Component Analysis using the FactorMineR package (Le, Josse, and Husson 2008) to find out the main correlations present in the distribution of the countries’ RCAs on the different subfields.
7. To determine the number of significant components, we have compared these eigenvalues to those obtained by random permutations of the countries’ RCAs over the subfields, therefore destroying the correlations between countries8. The rationale for this comparison is the following: it can be assumed that the RCA is the combination of two terms. First, a ‘structural’ component, linked to the history of the country, its main scientific partners…, which induces correlations among countries. This structural factor is blurred by a ‘random’ term due to other ingredients, such as individual decisions, which cannot be accounted for in our analysis. Therefore, only part of the information contained in the countries RCAs will be relevant for determining its position in the ‘chagas field’. By simulating 1000 randomized matrices, we computed the probabilities for the actual values to be obtained by a random permutation, showing that only the first two components are significant.
8. **Additional variables**. These additional variables are *not used* to compute the axis of the PCA. They are only projected on the obtained axis, in the same way as the ‘active’ variables (those describing the subfields RCAs), to further characterize the countries and understand the meaning of the PCA components.
9. ***Researchers (res)***: full time equivalent per million people (2005-2010). Data taken from: “United Nations Educational, Scientific, and Cultural Organization (UNESCO) Institute for Statistics”; 03/02/2015; <http://data.worldbank.org/indicator/SP.POP.SCIE.RD.P6/countries>
10. ***Articles (art)***: Publications in natural sciences in 2009. Data taken from: “National Science Foundation, Science and Engineering Indicators”, 03/02/2015; <http://data.worldbank.org/indicator/IP.JRN.ARTC.SC/countries>
11. ***Articles in WoS (artWoS)***: Total number of articles for year 2013, as recorded by the ISI Web of Science.
12. ***Chagas articles in WoS (ArtChagas)****: Total number of articles for year 2013, as recorded by the ISI Web of Science gathered with our search strategy (see methodology section).*
13. ***Chagas articles in Scielo (ArtScielo)****: Total number of articles for year 2013, as recorded by the Scielo database gathered with our search strategy (see methodology).*
14. ***RDGDP***: Public and private expenses for research and development (2005-2010), as a percentage of the country’s GDP (RD-GDP) and absolute value (RD) in dollars. Data taken from: “United Nations Educational, Scientific, and Cultural Organization (UNESCO) Institute for Statistics”; 03/02/2015; <http://data.worldbank.org/indicator/GB.XPD.RSDV.GD.ZS/countries>
15. ***Htexp***: Exports of high-technology products, in percentage of all exports (2011). Data taken from: “United Nations, Comtrade database”.03/02/2015; <http://data.worldbank.org/indicator/TX.VAL.TECH.CD/countries>
16. ***PatRes*** and ***PatNonRes***: number of patents (2011). Data taken from “World Intellectual Property Organization (WIPO), World Intellectual Property Indicators [www.wipo.int/econ\_stat](http://www.wipo.int/econ_stat)
17. ***GDP*** : Gross Domestic Product per habitant, a simple indicator of the wealth of the inhabitants of a country; 05/02/2015; Data from: [http://es.wikipedia.org/wiki/Anexo:Pa%C3%ADses\_por\_PIB\_(PPA)\_per\_c](http://es.wikipedia.org/wiki/Anexo:Pa%C3%ADses_por_PIB_(PPA)_per_c%C3%A1pita#cite_note-2)
18. [%C3%A1pita#cite\_note-2](http://es.wikipedia.org/wiki/Anexo:Pa%C3%ADses_por_PIB_(PPA)_per_c%C3%A1pita#cite_note-2)
19. ***Top10*** : The proportion of publications of the country in the 10% most-cited publications (computed for years 2010–2011), data taken from the document “Country and Scientific Regional Production Profiles”; 03/02/2015; [http://ec.europa.eu/research/innovation-union/pdf/scientific-production-](http://ec.europa.eu/research/innovation-union/pdf/scientific-production-profiles.pdf) [profiles.pdf](http://ec.europa.eu/research/innovation-union/pdf/scientific-production-profiles.pdf)
20. **TcruciPres**: The presence of vectorial transmision of the disease
21. **Population:** Country population
22. **T. cruzi intensity** (Tcruzint): 0 not endemic, 1 presence of the disease, 2 endemic but controlled, 3 red zone. Source: PAHO 2014
23. **Infected:** Number of infected persons.<http://www.who.int/wer/2015/wer9006.pdf>
24. **DNDI:** T*otal institutions public and private involved in DNDi initiative:*
25. <http://www.dndi.org/partnership/partners/>
26. **Infected in non endemic countries** *(InfNonEndem): Presence of infected people in non endemic countries*
27. ***Genome****: Participation in T. cruci genome iniciative.* [*http://www.dbbm.fiocruz.br/TcruziDB/index.html*](http://www.dbbm.fiocruz.br/TcruziDB/index.html)

**Additional variables PCA Factor map**



***Research Areas:*** for each country, we obtain the percentage of all published articles (not only in Chagas) in the different Research areas as defined by Web of Science. We study Research Areas for Chagas for 2015 in the world publications, which gather more than 95% of the records. Data have been retrieved on De.c 4th, 2015, by queries such as (CU=Argentina AND PY=2015) and using “analyze by Research Area”. The list of the top Research Areas with their labels ARE: (PARASITOLOGY, Parasitology), (TROPMED, Tropical Medicine), (BIOMOL, Biochemistry & Molecular Biology), (IMMUNO, Immonulogy), (PHARMA, Pharmacology), (INFECTDIS, Infectious Diseases); (PUBLHEALTH, Public, Environmental $ Occupational Health), (MICROBIOLOGY, Microbiology), (CHEMISTRY, Chemistry), (CARDIOLOGY, cardiac & Cardiovascular Systems), (CELLBIO, Cell Biology), (GENERMED, Medicine, General & Internal), (LIFEBIOMED, Life Sciences, Biomedicine & Other Topics), (RESEARCHMED, Medicine, Research & Experimental), (SCTECHOTHER, Science Technology Other Topics), (ZOOLOGY, Zoology), (BIOPHYSICS, Biophysics), (VETERINARY, Veterinary sciences), (HEMATOLOGY, Hematology), (ENTOMOLOGY, Entomology), (PATHOLOGY, Pathology), (GENETIC, Genetics & Heredity), (PLANTSCI, Plant Sciences), (NEUROLOGY, Neurology), (BIOTECH, Biotechnology & Applied Microbiology), (PHYSIOLOGY, Physiology), (GASTROHEP, Gastroenterology & Hepatology), (SURGERY, Surgery), (ENDOCRIN, Endocrinology & Metabolism), (TRANSPLANT, Transplantation), (TOXICOLOGY, Toxicology), (ENGINEERING, Engineering), (INTEGRMED, Integrative & Complementary Medicine), (ENVIRONM, Environmental Sciencies), (VIROLOGY, Virology), (ONCOLOGY, Oncology), (MEDLABTECH, Medical Laboratory Technology), (CRYSTALLOGRAPHY, Crystallography), (COMPUTERSC, Computer Science, Software Engineering) (MATHBIO, Mathematical & Computational Biology), (EVOLUTION, Evolutionary Biology)*.*

References:

Balassa, B. 1965. “Trade Liberalisation and Revealed Comparative Advantage.” *The Manchester School of Economics and Social Studies* 33 (2): 99–123. https://doi.org/10.1111/j.1467-9957.1965.tb00050.x.

Blondel, Vincent, Jean-Loup Guillaume, Renaud Lambiotte, and Etienne Lefebvre. 2008. “Fast Unfolding of Communities in Large Networks.” *Journal of Statistical Mechanics: Theory and Experiment* 2008 (10): P10008. http://stacks.iop.org/1742-5468/2008/i=10/a=P10008.

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Kessler, M M. 1963. “Bibliographic Coupling between Scientific Papers.” *American Documentation* 14 (1): 10–25. https://doi.org/10.1002/asi.5090140103.

Le, Sebastien, Julie Josse, and Francois Husson. 2008. “FactoMineR: An R Package for Multivariate Analysis.” *Journal of Statistical Software* 25 (1): 1–18.

May, R M. 1997. “The Scientific Wealth of Nations.” *Science* 275: 793–96.

Clusters ID Cards

This document gathers the “ID Cards” of the BC clusters found within the studied database.

The BC network was built by linking pairs of publications based on the references they share. We only kept links between publications sharing more than 3 references - 20066 out of 24178 publications are in the network. The 14 clusters presented here correspond to the ones found in the top level grouping at least 100 publications. They gather a total of 19403 publications. These ID cards displays the most frequent keywords, subject categories, journals of publication, institu tions, countries, authors,

references and reference journals of the publications of each cluster. The significance of an item σ = √N (f − p)/pp(1 − p) - where

N is the number of publications within the cluster and f and p are the proportion of publications respectively within the cluster and within the database displaying that item - is also given.

c Sebastian Grauwin - BIBLIOTOOLS/BiblioTools3.2 (October 2017)

Cluster 1 (“CardioCAR”). This cluster contains N= 3008 publications.

3

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Institution | f(%) | σ |  | Reference | f(%) | σ |
| FAC MED | 13.16 | 7.27 |  | Rassi A, 2010, LANCET, 375, 1388 | 16.66 | 34.04 |
| SCH MED | 10.34 | 7.19 |  | Bern C, 2007, JAMA-J AM MED ASSOC, 298, 2171 | 9.57 | 33.92 |
| UNIV SAO PAULO | 8.94 | 1.55 |  | Viotti R, 2006, ANN INTERN MED, 144, 724 | 9.28 | 36.61 |
| UNIV FED MINAS GERAIS | 7.35 | 6.83 |  | Coura JR, 2002, MEM I OSWALDO CRUZ, 97, 3 | 8.88 | 24.57 |
| BUENOS AIRES | 6.85 | 7.21 |  | Prata A, 2001, Lancet Infect Dis, 1, 92 | 7.48 | 21.41 |
| BELO HORIZONTE | 6.22 | 7.42 |  | Schmunis GA, 2010, ACTA TROP, 115, 14 | 6.91 | 23.30 |
| HOSP CLIN | 5.78 | 20.48 |  | Bern C, 2009, CLIN INFECT DIS, 49, E52 | 6.48 | 27.44 |
| DEPT MED | 4.42 | 3.15 |  | Marin JA, 2007, CIRCULATION, 115, 1109 | 6.22 | 20.69 |
| DEPT PARASITOL | 4.22 | -0.68 |  | Morillo CA, 2015, NEW ENGL J MED, 373, 1295 | 6.12 | 27.06 |
| DEPT CHEM | 3.99 | 4.10 |  | Rassi A, 2006, NEW ENGL J MED, 355, 799 | 5.92 | 28.37 |
| FUNDACAO OSWALDO CRUZ | 3.96 | 3.12 |  | Schmunis GA, 2007, MEM I OSWALDO CRUZ, 102, 75 | 5.75 | 22.59 |
| INST OSWALDO CRUZ | 3.52 | -3.27 |  | Molina I, 2014, NEW ENGL J MED, 370, 1899 | 5.65 | 28.84 |
| DIV CARDIOL | 3.36 | 16.82 |  | Castro JA, 2006, HUM EXP TOXICOL, 25, 471 | 5.35 | 21.17 |
| FIOCRUZ MS | 3.26 | -2.78 |  | Deandrade ALSS, 1996, LANCET, 348, 1407 | 5.25 | 25.12 |
| DEPT INTERNAL MED | 3.19 | 9.05 |  | Viotti R, 2009, EXPERT REV ANTI-INFE, 7, 157 | 4.75 | 25.01 |
| FAC FARM | 3.19 | 7.96 |  | Urbina JA, 2003, TRENDS PARASITOL, 19, 495 | 4.72 | 13.69 |
| DEPT MICROBIOL | 3.03 | 2.92 |  | Urbina JA, 2010, ACTA TROP, 115, 55 | 4.69 | 19.82 |
| FAC CIENCIAS | 2.56 | -1.10 |  | Estani SS, 1998, AM J TROP MED HYG, 59, 526 | 4.52 | 23.65 |
| DEPT QUIM | 2.49 | 4.47 |  | Bern C, 2011, CLIN MICROBIOL REV, 24, 655 | 4.09 | 15.80 |
| DEPT INFECT DIS | 2.39 | 12.54 |  | Viotti R, 1994, AM HEART J, 127, 151 | 3.89 | 16.89 |
| Country | f(%) | σ |  | RefJournal | f(%) | σ |
| Brazil | 39.43 | 3.62 |  | MEM I OSWALDO CRUZ | 48.87 | 20.77 |
| USA | 24.24 | -1.74 |  | AM J TROP MED HYG | 41.22 | 10.82 |
| Spain | 14.00 | 18.70 |  | PLOS NEGLECT TROP D | 40.46 | 33.89 |
| Argentina | 12.63 | -3.04 |  | LANCET | 39.33 | 33.37 |
| UK | 5.88 | -2.20 |  | ACTA TROP | 35.44 | 13.85 |
| Switzerland | 5.82 | 12.48 |  | NEW ENGL J MED | 34.77 | 39.56 |
| Colombia | 3.86 | 4.46 |  | ANTIMICROB AGENTS CH | 32.35 | 29.22 |
| Mexico | 3.86 | 0.71 |  | CLIN INFECT DIS | 27.19 | 37.21 |
| Venezuela | 3.82 | 0.83 |  | CIRCULATION | 25.50 | 28.15 |
| Italy | 3.26 | 6.50 |  | T ROY SOC TROP MED H | 22.54 | 3.74 |
| Author | f(%) | σ |  | Subject | f(%) | σ |
| Ribeiro ALP | 2.69 | 20.02 |  | Tropical Medicine | 20.58 | 5.33 |
| Gascon J | 2.09 | 15.39 |  | Parasitology | 18.68 | -5.97 |
| Bestetti RB | 1.76 | 11.71 |  | Infectious Diseases | 15.72 | 13.72 |
| Rocha MOC | 1.53 | 10.91 |  | Cardiac & Cardiovascular Systems | 14.86 | 26.42 |
| Sanchez-Moreno M | 1.53 | 11.90 |  | Pharmacology & Pharmacy | 11.57 | 15.10 |
| Hotez PJ | 1.50 | 15.16 |  | Chemistry, Medicinal | 10.74 | 11.99 |
| Marin C | 1.46 | 12.51 |  | Microbiology | 9.21 | 5.60 |
| Bern C | 1.33 | 8.71 |  | Public, Environmental & Occupational Health | 7.25 | 0.27 |
| Pinazo MJ | 1.33 | 12.37 |  | Immunology | 5.75 | -8.65 |
| Soeiro MDC | 1.33 | 12.69 |  | Biochemistry & Molecular Biology | 4.92 | -15.65 |

|  |  |  |
| --- | --- | --- |
| Keywords | f(%) | σ |
| CHAGAS-DISEASE | 24.37 | 4.41 |
| TRYPANOSOMA-CRUZI | 17.32 | -9.83 |
| TRYPANOSOMA-CRUZI INFEC- | 11.07 | 10.53 |
| TION |  |  |
| BENZNIDAZOLE | 10.80 | 29.39 |
| CARDIOMYOPATHY | 8.64 | 16.66 |
| IN-VITRO | 8.64 | 5.68 |
| HEART-DISEASE | 7.55 | 18.37 |
| UNITED-STATES | 6.68 | 14.59 |
| CHEMOTHERAPY | 6.48 | 12.92 |
| TRANSMISSION | 6.42 | 6.04 |
| INFECTION | 6.35 | -1.64 |
| DISEASE | 6.05 | 6.87 |
| POLYMERASE-CHAIN-REACTION | 5.92 | 11.19 |
| DIAGNOSIS | 5.85 | 11.55 |
| CHRONIC CHAGAS-DISEASE | 4.82 | 12.17 |
| MORTALITY | 4.49 | 19.82 |
| DRUGS | 3.79 | 7.10 |
| FOLLOW-UP | 3.62 | 16.23 |
| RISK | 3.29 | 11.51 |
| DERIVATIVES | 3.26 | 1.86 |
| Title Words | f(%) | σ |
| CHAGAS | 42.65 | 32.60 |
| DISEASE | 37.63 | 30.00 |
| CRUZI | 22.54 | -4.17 |
| TRYPANOSOMA | 22.04 | -6.87 |
| PATIENTS | 10.57 | 15.43 |
| CHRONIC | 9.14 | 12.04 |
| ACTIVITY | 8.54 | 7.82 |
| TREATMENT | 8.05 | 20.24 |
| HEART | 7.81 | 18.18 |
| INFECTION | 7.45 | -2.57 |
| Journal | f(%) | σ |
| PLOS NEGLECT TROP D  INT J CARDIOL  AM J TROP MED HYG REV SOC BRAS MED TRO ANTIMICROB AGENTS CH ARQ BRAS CARDIOL  MEM I OSWALDO CRUZ EUR J MED CHEM  ACTA TROP  J MED CHEM | 6.02  3.46  3.39  3.26  2.56  2.09  2.09  1.93  1.86  1.40 | 14.65  17.76  0.93  7.78  10.86  13.75  -4.23  7.99  0.05  5.37 |

Cluster 2 (“IFN-IMM”). This cluster contains N= 2855 publications.

6

|  |  |  |
| --- | --- | --- |
| Reference | f(%) | σ |
| Gazzinelli RT, 1992, EUR J IMMUNOL, 22, 2501  Vespa GNR, 1994, INFECT IMMUN, 62, 5177  Tarleton RL, 1992, NATURE, 356, 338  Silva JS, 1992, J EXP MED, 175, 169  Silva JS, 1995, INFECT IMMUN, 63, 4862  Torrico F, 1991, J IMMUNOL, 146, 3626  Reis DD, 1993, AM J TROP MED HYG, 48, 637  Aliberti JCS, 1996, INFECT IMMUN, 64, 1961  Brener Z, 1997, INT ARCH ALLERGY IMM, 114, 103  Tarleton RL, 1990, J IMMUNOL, 144, 717  Brener Z, 1962, REV INST MED TROP SAO PAULO, 4, 389  Cardillo F, 1996, INFECT IMMUN, 64, 128  Reed SG, 1988, J IMMUNOL, 140, 4342  Gomes JAS, 2003, INFECT IMMUN, 71, 1185  Munozfernandez MA, 1992, EUR J IMMUNOL, 22, 301  Koberle F, 1968, Advances in Parasitology, 6, 63  Holscher C, 1998, INFECT IMMUN, 66, 1208  Silva JS, 1991, J EXP MED, 174, 539  Tanowitz HB, 1992, CLIN MICROBIOL REV, 5, 400  Campos MA, 2001, J IMMUNOL, 167, 416 | 8.69  7.74  7.22  6.80  6.34  5.95  5.81  5.71  5.64  5.64  5.46  5.46  5.46  5.01  4.97  4.94  4.90  4.90  4.90  4.41 | 36.10  32.87  31.63  32.09  30.28  30.76  29.26  28.54  24.90  27.71  10.77  29.18  26.03  26.47  26.81  14.31  26.37  25.82  18.82  23.80 |
| RefJournal | f(%) | σ |
| J IMMUNOL | 71.07 | 63.02 |
| INFECT IMMUN | 68.34 | 54.35 |
| J EXP MED | 54.99 | 47.03 |
| P NATL ACAD SCI USA  EUR J IMMUNOL NATURE  AM J TROP MED HYG SCIENCE  EXP PARASITOL J INFECT DIS | 48.76  45.78  43.64  39.33  36.01  35.45  35.10 | 16.88  66.69  17.19  8.38  11.63  6.22  29.54 |
| Subject | f(%) | σ |
| Immunology | 40.53 | 51.90 |
| Parasitology | 21.37 | -2.42 |
| Infectious Diseases | 14.22 | 10.51 |
| Tropical Medicine | 10.47 | -9.21 |
| Microbiology | 9.11 | 5.23 |
| Cell Biology | 8.34 | 9.78 |
| Biochemistry & Molecular Biology  Cardiac & Cardiovascular Systems Medicine, Research & Experimental Multidisciplinary Sciences | 7.01  6.76  5.78  3.82 | -12.14  5.26  8.65  1.49 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Keywords | f(%) | σ |  | Institution | f(%) | σ |
| TRYPANOSOMA-CRUZI | 21.44 | -4.51 |  | UNIV SAO PAULO | 14.08 | 11.53 |
| MICE | 20.39 | 33.80 |  | SCH MED | 11.98 | 10.45 |
| TRYPANOSOMA-CRUZI INFEC- | 18.28 | 26.02 |  | DEPT PATHOL | 11.14 | 21.10 |
| TION |  |  |  | FAC MED | 10.75 | 2.65 |
| CHAGAS-DISEASE | 17.27 | -5.01 |  | UNIV FED MINAS GERAIS | 9.70 | 12.60 |
| IFN-GAMMA | 12.40 | 37.25 |  | DEPT MED | 8.48 | 15.05 |
| INFECTION | 10.75 | 7.55 |  | BELO HORIZONTE | 7.60 | 11.17 |
| T-CELLS | 10.54 | 31.07 |  | DEPT IMMUNOL | 7.15 | 21.37 |
| EXPRESSION | 10.26 | 10.35 |  | INST OSWALDO CRUZ | 6.48 | 4.20 |
| INTERFERON-GAMMA | 9.32 | 31.27 |  | FIOCRUZ MS | 6.23 | 5.14 |
| NITRIC-OXIDE | 9.18 | 25.13 |  | UNIV FED RIO DE JANEIRO | 5.32 | 0.61 |
| CARDIOMYOPATHY | 9.04 | 17.41 |  | DEPT MICROBIOL & IMMUNOL | 4.66 | 14.26 |
| ACTIVATION | 7.11 | 18.65 |  | DEPT PARASITOL | 4.41 | -0.17 |
| TUMOR-NECROSIS-FACTOR | 6.41 | 25.45 |  | INST CIENCIAS BIOL | 4.31 | 10.09 |
| IMMUNE-RESPONSE | 6.37 | 19.06 |  | FUNDACAO OSWALDO CRUZ | 4.20 | 3.82 |
| CELLS | 6.23 | 9.57 |  | CTR PESQUISAS RENE RACHOU | 3.85 | 7.73 |
| NECROSIS-FACTOR-ALPHA | 6.16 | 26.11 |  | INST BIOFIS CARLOS CHAGAS | 3.82 | 3.99 |
| MACROPHAGES | 6.06 | 17.51 |  | FILHO |  |  |
| DISEASE | 5.92 | 6.32 |  | BUENOS AIRES | 3.61 | -1.60 |
| RESISTANCE | 5.57 | 10.69 |  | DEPT BIOCHEM & IMMUNOL | 3.50 | 18.79 |
| IN-VIVO | 5.53 | 14.60 |  | DEPT BIOQUIM & IMUNOL | 3.29 | 10.42 |
| Title Words | f(%) | σ |  | Country | f(%) | σ |
| TRYPANOSOMA | 37.65 | 11.96 |  | Brazil | 42.77 | 7.23 |
| CRUZI | 34.29 | 10.28 |  | USA | 29.18 | 4.35 |
| INFECTION | 24.34 | 29.41 |  | Argentina | 12.75 | -2.78 |
| CHAGAS | 20.56 | 1.81 |  | France | 6.62 | 2.19 |
| DISEASE | 19.58 | 3.58 |  | Germany | 4.97 | 4.88 |
| MICE | 12.68 | 22.00 |  | Spain | 3.82 | -4.80 |
| CELLS | 12.36 | 27.55 |  | Mexico | 2.91 | -2.03 |
| CHRONIC | 10.40 | 14.96 |  | UK | 2.66 | -8.94 |
| T | 8.41 | 28.34 |  | Belgium | 2.49 | 3.56 |
| EXPERIMENTAL | 8.20 | 16.62 |  | Japan | 2.45 | 3.11 |
| Journal | f(%) | σ |  | Author | f(%) | σ |
| INFECT IMMUN | 5.53 | 17.35 |  | Tanowitz HB | 3.85 | 19.24 |
| J IMMUNOL | 4.34 | 16.72 |  | Gazzinelli RT | 3.50 | 21.89 |
| MEM I OSWALDO CRUZ | 2.80 | -2.07 |  | Silva JS | 2.42 | 16.11 |
| EXP PARASITOL | 2.77 | 0.53 |  | Weiss LM | 2.17 | 15.42 |
| PLOS NEGLECT TROP D | 2.52 | 1.38 |  | Tarleton RL | 1.93 | 9.06 |
| MICROBES INFECT | 2.42 | 14.33 |  | Savino W | 1.82 | 15.86 |
| PLOS ONE | 2.28 | 3.76 |  | Teixeira MM | 1.82 | 14.66 |
| PARASITOL RES | 2.21 | 2.27 |  | Correa-Oliveira R | 1.79 | 13.92 |
| PARASITE IMMUNOL | 2.03 | 11.92 |  | Cunha-Neto E | 1.79 | 14.32 |
| FRONT IMMUNOL | 1.86 | 13.94 |  | Kalil J | 1.72 | 15.26 |

Cluster 3 (“AbodyPAR”). This cluster contains N= 2110 publications.

9

|  |  |  |
| --- | --- | --- |
| Reference | f(%) | σ |
| Laemmli UK, 1970, NATURE, 227, 680  Silva LHP, 1953, FOLIA CLIN BIOL, 20, 191  Camargo EP, 1964, Revista do Instituto de Medicina Tropical de Sao Paulo, 6, 93  Lowry OH, 1951, J BIOL CHEM, 193, 265  Brener Z, 1973, ANNU REV MICROBIOL, 27, 347  Towbin H, 1979, P NATL ACAD SCI USA, 76, 4350  Brener Z, 1980, Advances in Parasitology, 18, 247  Krettli AU, 1976, J IMMUNOL, 116, 755  Cossio PM, 1974, CIRCULATION, 49, 13  Krettli AU, 1982, J IMMUNOL, 128, 2009  Snary D, 1979, FEBS LETT, 100, 166  Brener Z, 1963, Rev Inst Med Trop Sao Paulo, 5, 220  Szarfman A, 1982, J EXP MED, 155, 1161  Wood JN, 1982, NATURE, 296, 34  Nogueira N, 1981, J EXP MED, 153, 629  Nogueira N, 1975, J EXP MED, 142, 224  Ramos C, 1979, J IMMUNOL, 122, 1243  Brener Z, 1962, REV INST MED TROP SAO PAULO, 4, 389  Trischmann T, 1978, EXP PARASITOL, 45, 160  Kierszenbaum F, 1976, J IMMUNOL, 116, 1208 | 12.27  8.86  8.34  8.10  8.06  6.92  6.49  6.16  5.26  5.26  4.79  4.41  4.36  4.31  4.27  4.22  4.17  4.12  4.12  4.08 | 21.89  21.33  14.70  17.99  17.40  20.71  26.68  25.79  24.81  22.44  28.39  15.27  24.15  24.67  25.87  22.87  25.23  5.23  19.41  22.35 |
| RefJournal | f(%) | σ |
| EXP PARASITOL | 49.15 | 19.06 |
| J IMMUNOL | 47.30 | 27.87 |
| J PARASITOL | 44.22 | 31.98 |
| NATURE | 42.18 | 13.29 |
| J EXP MED | 40.19 | 23.39 |
| AM J TROP MED HYG  INFECT IMMUN J PROTOZOOL  J BIOL CHEM  T ROY SOC TROP MED H | 37.87  37.30  34.93  27.16  25.88 | 5.76  13.60  34.70  -5.68  6.97 |
| Subject | f(%) | σ |
| Parasitology | 33.41 | 11.01 |
| Immunology | 21.75 | 16.62 |
| Tropical Medicine | 20.09 | 3.87 |
| Biochemistry & Molecular Biology  Public, Environmental & Occupational Health  Medicine, General & Internal Infectious Diseases Microbiology  Cell Biology  Zoology | 10.57  10.33  6.30  5.97  4.60  4.50  4.17 | -5.87  5.74  5.68  -4.42  -3.81  -0.06  6.24 |

|  |  |  |
| --- | --- | --- |
| Institution | f(%) | σ |
| FAC MED | 7.44 | -2.96 |
| SCH MED | 7.39 | 0.72 |
| UNIV SAO PAULO  DEPT PARASITOL UNIV BUENOS AIRES  UNIV FED RIO DE JANEIRO MICHIGAN STATE UNIV DEPT IMMUNOL  DEPT BIOL  UNIV FED MINAS GERAIS  DEPT MICROBIOL & PUBL HLTH INST PASTEUR  DEPT MED DEPT PATHOL NIAID  WAKE FOREST UNIV DEPT BIOQUIM DEPT MICROBIOL INST QUIM  E LANSING | 6.40  5.69  5.36  5.17  4.22  4.08  3.84  3.79  3.70  3.46  2.94  2.84  2.65  2.65  2.56  2.23  2.23  2.18 | -2.97  2.68  1.99  0.19  21.26  7.80  2.41  -1.99  25.90  9.15  -1.13  -2.07  10.20  15.82  1.66  -0.03  0.88  19.97 |
| Country | f(%) | σ |
| Brazil | 30.00 | -5.98 |
| USA | 26.54 | 0.96 |
| Argentina | 15.69 | 1.43 |
| France | 6.07 | 0.78 |
| UK | 5.97 | -1.69 |
| Venezuela | 4.12 | 1.44 |
| Spain | 2.32 | -7.03 |
| Mexico | 1.56 | -5.05 |
| Japan | 1.33 | -1.33 |
| Fed Rep Ger | 1.09 | 5.85 |
| Author | f(%) | σ |
| Kierszenbaum F | 5.36 | 26.91 |
| Desouza W | 3.70 | 21.27 |
| Kuhn RE | 2.65 | 18.15 |
| Brener Z | 2.04 | 14.81 |
| Colli W | 1.99 | 10.63 |
| Capron A | 1.75 | 15.07 |
| Segura EL | 1.71 | 5.92 |
| Cappa SMG | 1.56 | 11.37 |
| Dvorak JA | 1.42 | 12.62 |
| Villalta F | 1.42 | 5.70 |

|  |  |  |
| --- | --- | --- |
| Keywords | f(%) | σ |
| TRYPANOSOMA-CRUZI | 7.77 | -18.35 |
| CHAGAS-DISEASE | 5.12 | -17.99 |
| MICE | 5.02 | -1.36 |
| ANTIBODIES | 4.12 | 5.27 |
| INFECTION | 3.93 | -5.69 |
| IDENTIFICATION | 3.13 | -5.27 |
| PROTEINS | 2.80 | 1.58 |
| ANTIGENS | 2.65 | 4.17 |
| EXPERIMENTAL CHAGAS- | 2.65 | 4.25 |
| DISEASE |  |  |
| EXPRESSION | 2.61 | -6.21 |
| CELLS | 2.56 | -1.48 |
| RESISTANCE | 2.51 | 0.14 |
| MONOCLONAL-ANTIBODY | 1.99 | 7.81 |
| CRUZI | 1.85 | -6.12 |
| MONOCLONAL-ANTIBODIES | 1.71 | 5.05 |
| PURIFICATION | 1.66 | -1.67 |
| DISEASE | 1.61 | -5.07 |
| TRYPOMASTIGOTES | 1.61 | 2.99 |
| INVITRO | 1.56 | 1.08 |
| SERA | 1.56 | 7.60 |
| Title Words | f(%) | σ |
| TRYPANOSOMA-CRUZI | 49.62 | 54.66 |
| CHAGAS-DISEASE | 12.89 | 20.84 |
| MICE | 12.84 | 19.29 |
| TRYPANOSOMA | 10.57 | -17.54 |
| INFECTION | 10.05 | 2.07 |
| CRUZI | 9.86 | -16.79 |
| EXPERIMENTAL | 6.82 | 10.56 |
| FORMS | 6.26 | 16.61 |
| INFECTED | 5.83 | 8.81 |
| ANTIBODIES | 5.64 | 14.32 |
| Journal | f(%) | σ |
| EXP PARASITOL | 6.68 | 11.73 |
| AM J TROP MED HYG  J PARASITOL INFECT IMMUN MEDICINA-BUENOS AIRE J IMMUNOL  MOL BIOCHEM PARASIT J PROTOZOOL  T ROY SOC TROP MED H MEM I OSWALDO CRUZ | 5.50  5.31  4.55  4.50  4.03  3.84  3.65  3.13  2.70 | 6.36  16.06  11.24  10.34  12.98  3.57  13.50  7.28  -2.03 |

Cluster 4 (“VecTRO”). This cluster contains N= 2012 publications.

12

Keywords

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| f(%) | σ |  | Institution | f(%) | σ |
| 29.97 | 9.76 |  | FIOCRUZ MS | 8.90 | 10.21 |
| 20.33 | 47.83 |  | UNIV BUENOS AIRES | 8.90 | 9.63 |
| 14.76 | 23.59 |  | FAC MED | 8.65 | -1.03 |
| 14.61 | -10.85 |  | INST OSWALDO CRUZ | 8.60 | 7.97 |
| 13.87 | 39.68 |  | BUENOS AIRES | 7.95 | 8.36 |
| 9.39 | 26.70 |  | DEPT BIOL | 7.65 | 12.46 |
| 9.24 | 24.07 |  | FAC CIENCIAS EXACTAS & NAT | 6.71 | 15.35 |
| 7.50 | 22.42 |  | DEPT CIENCIAS BIOL | 6.66 | 19.64 |
| 7.21 | 20.78 |  | FAC CIENCIAS | 6.26 | 9.00 |
| 7.06 | -0.11 |  | CTR PESQUISAS RENE RACHOU | 5.07 | 10.50 |
| 6.36 | 24.82 |  | DEPT PARASITOL | 4.72 | 0.52 |
| 6.21 | 27.14 |  | DEPT ENTOMOL | 4.62 | 22.47 |
| 5.52 | 11.39 |  | INST BIOL | 4.22 | 10.54 |
| 5.52 | -1.58 |  | FUNDACAO OSWALDO CRUZ | 3.93 | 2.48 |
|  |  |  | BELO HORIZONTE | 3.73 | 0.14 |
| 5.52 | 19.79 |  | CNRS | 3.18 | 4.09 |
| 5.42 | 26.94 |  | UNIV ESTADUAL PAULISTA | 3.18 | 13.58 |
| 4.77 | 9.82 |  | BR-30190002 BELO HORIZONTE | 3.13 | 9.43 |
| 4.72 | 21.66 |  | LAB ECOEPIDEMIOL | 3.08 | 19.60 |
| 4.52 | 5.75 |  | CONSEJO NACL INVEST CIENT & | 3.03 | 3.48 |
| 4.17 | 20.30 |  | TECN |  |  |
| f(%) | σ |  | Country | f(%) | σ |
| 31.61 | 70.87 |  | Brazil | 31.46 | -4.48 |
| 30.12 | 15.58 |  | USA | 27.34 | 1.76 |
| 30.07 | 12.34 |  | Argentina | 22.02 | 9.44 |
| 24.65 | 65.10 |  | Mexico | 11.28 | 18.42 |
| 23.51 | 63.40 |  | France | 9.24 | 6.93 |
| 14.66 | 46.91 |  | UK | 6.61 | -0.52 |
| 14.07 | -13.62 |  | Colombia | 5.32 | 7.79 |
| 13.87 | -12.29 |  | Bolivia | 4.03 | 9.51 |
| 13.52 | 37.92 |  | Chile | 3.23 | 1.32 |
| 13.02 | 48.71 |  | Guatemala | 2.93 | 17.50 |
| f(%) | σ |  | Author | f(%) | σ |
| 12.67 | 22.31 |  | Gurtler RE | 5.27 | 27.24 |
| 7.06 | 34.11 |  | Diotaiuti L | 3.58 | 25.56 |
| 6.91 | 9.87 |  | Lazzari CR | 2.73 | 23.10 |
| 5.02 | 10.56 |  | Galvao C | 2.63 | 22.18 |
| 4.97 | 12.63 |  | Da Rosa JA | 2.58 | 19.69 |
| 4.72 | 7.97 |  | Dujardin JP | 2.29 | 19.82 |
| 3.48 | 15.95 |  | Cecere MC | 2.14 | 20.04 |
| 2.93 | 12.26 |  | Dias JCP | 2.14 | 11.87 |
| 2.39 | 19.88 |  | Kitron U | 2.14 | 17.98 |
| 1.59 | 12.53 |  | Panzera F | 2.09 | 20.33 |

CHAGAS-DISEASE REDUVIIDAE TRANSMISSION TRYPANOSOMA-CRUZI HEMIPTERA POPULATIONS RHODNIUS-PROLIXUS TRIATOMA-INFESTANS ARGENTINA INFECTION

VECTORS INFESTANS BRAZIL

TRYPANOSOMA-CRUZI INFEC- TION

|  |  |  |
| --- | --- | --- |
| Reference | f(%) | σ |
| Lent H, 1979, Bulletin of the American Museum of Natural  History, 163, 123  Schofield CJ, 2006, TRENDS PARASITOL, 22, 583  Dias JCP, 2002, MEM I OSWALDO CRUZ, 97, 603  Galvao Cleber, 2003, Zootaxa, 202, 1  Schofield CJ, 1994, TRIATOMINAE BIOL CON Schofield CJ, 2009, ACTA TROP, 110, 88  Gurtler RE, 2007, P NATL ACAD SCI USA, 104, 16194  Lent H, 1979, Bulletin of the American Museum of Natural  History, 163, 125  Picollo MI, 2005, J MED ENTOMOL, 42, 637  Zeledon R, 1981, ANNU REV ENTOMOL, 26, 101  Cohen JE, 2001, SCIENCE, 293, 694  Gurtler RE, 2004, B WORLD HEALTH ORGAN, 82, 196  Marcilla A, 2001, MOL PHYLOGENET EVOL, 18, 136  Panzera F, 2004, EMERG INFECT DIS, 10, 438  Dumonteil E, 2002, AM J TROP MED HYG, 67, 176  Forattini O P, 1980, Rev Saude Publica, 14, 265  Hypsa V, 2002, MOL PHYLOGENET EVOL, 23, 447  Lyman DE, 1999, AM J TROP MED HYG, 60, 377  Bargues MD, 2008, PLOS NEGLECT TROP D, 2, 0  Schofield CJ, 1999, ADV PARASIT, 42, 1 | 19.53  7.90  7.21  7.16  6.76  6.46  5.67  5.17  4.97  4.52  4.47  4.37  4.13  4.13  3.88  3.83  3.83  3.78  3.73  3.68 | 54.33  20.90  18.77  32.79  32.22  31.52  27.91  25.97  27.63  24.58  23.02  27.54  26.53  26.35  23.59  23.41  24.76  24.95  24.23  17.73 |
| RefJournal | f(%) | σ |
| MEM I OSWALDO CRUZ  J MED ENTOMOL  AM J TROP MED HYG ACTA TROP  MED VET ENTOMOL  T ROY SOC TROP MED H PLOS NEGLECT TROP D  Bulletin of the American Museum of Natural History  INFECT GENET EVOL EMERG INFECT DIS | 71.17  55.86  55.82  47.51  33.50  32.21  28.38  24.80  24.50  24.06 | 38.56  83.98  22.88  23.91  67.29  13.93  13.35  60.57  34.94  32.93 |
| Subject | f(%) | σ |
| Tropical Medicine | 42.10 | 30.09 |
| Parasitology | 33.95 | 11.32 |
| Entomology | 17.20 | 47.04 |
| Public, Environmental & Occupational Health  Veterinary Sciences Infectious Diseases Zoology  Biochemistry & Molecular Biology  Multidisciplinary Sciences  Genetics & Heredity | 14.26  13.82  12.33  4.57  4.08  2.78  2.73 | 12.47  35.12  5.80  7.33  -13.86  -1.34  6.18 |

VECTOR HETEROPTERA EVOLUTION

CHAGAS-DISEASE VECTOR UNITED-STATES

MEXICO

Title Words

TRIATOMA DISEASE CHAGAS REDUVIIDAE HEMIPTERA INFESTANS TRYPANOSOMA CRUZI

VECTOR TRIATOMINAE

Journal

MEM I OSWALDO CRUZ J MED ENTOMOL

AM J TROP MED HYG ACTA TROP

REV SOC BRAS MED TRO PLOS NEGLECT TROP D INFECT GENET EVOL PARASITE VECTOR

MED VET ENTOMOL J INSECT PHYSIOL

Cluster 5 (“DrugsBIOCHEM”). This cluster contains N= 1695 publications.

15

|  |  |  |
| --- | --- | --- |
| Institution | f(%) | σ |
| FAC MED | 11.15 | 2.60 |
| DEPT CHEM | 10.15 | 18.55 |
| DEPT QUIM | 9.09 | 25.67 |
| UNIV SAO PAULO  FAC QUIM  UNIV REPUBLICA FAC CIENCIAS  DEPT QUIM ORGAN INST QUIM  UNIV CHILE DEPT BIOCHEM  UNIV FED RIO DE JANEIRO UNIV BUENOS AIRES FIOCRUZ MS  DEPT BIOQUIM  INST OSWALDO CRUZ UNIV FED MINAS GERAIS  UNIV LONDON LONDON SCH HYG  & TROP MED DEPT PARASITOL FAC FARM | 9.09  8.55  8.38  7.96  7.14  7.14  6.61  6.25  5.72  5.49  4.66  4.54  3.89  3.83  3.72  3.66  3.36 | 1.38  30.39  28.06  12.44  20.49  15.36  12.72  10.78  1.22  2.04  0.76  7.25  -1.74  -1.70  10.13  -1.64  6.56 |
| Country | f(%) | σ |
| Brazil | 29.79 | -5.54 |
| USA | 14.04 | -10.92 |
| UK | 12.04 | 8.34 |
| Argentina | 11.21 | -3.94 |
| Uruguay | 10.32 | 27.71 |
| Spain | 8.97 | 5.28 |
| Chile | 7.91 | 12.98 |
| Germany | 7.61 | 9.80 |
| France | 7.26 | 2.82 |
| India | 3.24 | 7.40 |
| Author | f(%) | σ |
| Cerecetto H | 5.96 | 31.09 |
| Gonzalez M | 5.49 | 28.39 |
| Fairlamb AH | 3.83 | 25.12 |
| Stoppani AOM | 3.01 | 18.62 |
| De Castro SL | 2.89 | 17.03 |
| Gambino D | 2.83 | 23.52 |
| Ferreira VF | 2.60 | 22.17 |
| Morello A | 2.60 | 17.99 |
| Krauth-Siegel RL | 2.48 | 21.34 |
| Maya JD | 2.42 | 13.63 |

|  |  |  |
| --- | --- | --- |
| Reference | f(%) | σ |
| Fairlamb AH, 1992, ANNU REV MICROBIOL, 46, 695  Fairlamb AH, 1985, SCIENCE, 227, 1485  Coura JR, 2002, MEM I OSWALDO CRUZ, 97, 3  Krieger S, 2000, MOL MICROBIOL, 35, 542  Henderson GB, 1988, P NATL ACAD SCI USA, 85, 5374  Shames SL, 1986, BIOCHEMISTRY-US, 25, 3519  Jockersscherubl MC, 1989, EUR J BIOCHEM, 180, 267  Benson TJ, 1992, BIOCHEM J, 286, 9  Bond CS, 1999, STRUCT FOLD DES, 7, 81  Krauthsiegel RL, 1987, EUR J BIOCHEM, 164, 123  Boveris A, 1980, BIOCHEM J, 188, 643  Salmon-Chemin L, 2001, J MED CHEM, 44, 548  Jacoby EM, 1996, PROTEINS, 24, 73  Krauth-Siegel RL, 2008, BBA-GEN SUBJECTS, 1780, 1236  Wilkinson SR, 2000, J BIOL CHEM, 275, 8220  Maya JD, 2003, BIOCHEM PHARMACOL, 65, 999  Nogoceke E, 1997, BIOL CHEM, 378, 827  Bradford MM, 1976, ANAL BIOCHEM, 72, 248  Chan C, 1998, J MED CHEM, 41, 148  Otwinowski Z, 1997, METHOD ENZYMOL, 276, 307 | 12.92  10.68  6.08  5.72  5.49  5.49  5.31  5.25  5.25  5.25  4.72  4.42  4.37  4.25  4.25  4.19  4.19  4.01  4.01  4.01 | 44.21  40.82  10.66  28.60  28.31  30.45  29.20  29.55  28.68  30.10  25.65  25.95  27.27  23.23  25.15  22.04  26.87  4.67  25.63  19.78 |
| RefJournal | f(%) | σ |
| J BIOL CHEM | 50.15 | 15.05 |
| J MED CHEM | 46.02 | 47.90 |
| MOL BIOCHEM PARASIT  P NATL ACAD SCI USA BIOCHEM J  SCIENCE  BIOORGAN MED CHEM BIOCHEM PHARMACOL ANTIMICROB AGENTS CH EUR J BIOCHEM | 43.24  39.82  36.22  33.81  32.45  32.33  31.80  28.14 | 8.79  5.23  23.19  6.91  38.95  45.27  21.28  23.92 |
| Subject | f(%) | σ |
| Biochemistry & Molecular Biology  Chemistry, Medicinal Pharmacology & Pharmacy Parasitology  Chemistry, Organic Chemistry, Multidisciplinary Biophysics  Chemistry, Inorganic & Nuclear  Microbiology  Tropical Medicine | 35.63  24.01  15.04  12.45  10.56  8.32  6.43  6.14  4.90  4.54 | 23.52  32.61  17.69  -10.55  22.66  20.26  11.92  30.95  -2.92  -13.60 |

|  |  |  |
| --- | --- | --- |
| Keywords | f(%) | σ |
| TRYPANOSOMA-CRUZI | 39.88 | 14.04 |
| CHAGAS-DISEASE | 17.46 | -3.66 |
| DERIVATIVES | 13.51 | 27.41 |
| IN-VITRO | 10.91 | 8.15 |
| CRITHIDIA-FASCICULATA | 8.20 | 24.90 |
| CRYSTAL-STRUCTURE | 8.08 | 16.71 |
| DRUGS | 8.08 | 18.00 |
| METABOLISM | 7.91 | 18.67 |
| CHEMOTHERAPY | 6.67 | 10.17 |
| TRYPANOTHIONE REDUCTASE | 6.67 | 24.35 |
| INHIBITORS | 6.37 | 11.37 |
| AGENTS | 6.08 | 17.33 |
| PURIFICATION | 5.78 | 10.09 |
| ESCHERICHIA-COLI | 5.66 | 10.25 |
| GLUTATHIONE-REDUCTASE | 5.31 | 26.72 |
| CRUZI | 5.19 | 1.05 |
| HYDROGEN-PEROXIDE | 4.48 | 20.25 |
| TROPICAL DISEASES | 4.42 | 19.59 |
| ENZYME | 4.25 | 13.61 |
| BRUCEI | 4.19 | 0.73 |
| Title Words | f(%) | σ |
| CRUZI | 22.65 | -3.02 |
| TRYPANOSOMA | 21.30 | -5.84 |
| ACTIVITY | 17.64 | 22.53 |
| SYNTHESIS | 12.68 | 24.92 |
| TRYPANOTHIONE | 10.91 | 44.95 |
| REDUCTASE | 10.50 | 40.72 |
| TRYPANOSOMA-CRUZI | 10.15 | -1.82 |
| AGAINST | 9.73 | 10.24 |
| DERIVATIVES | 8.85 | 24.18 |
| NEW | 7.96 | 11.83 |
| Journal | f(%) | σ |
| BIOORGAN MED CHEM  EUR J MED CHEM  MOL BIOCHEM PARASIT J MED CHEM  BIOORG MED CHEM LETT J INORG BIOCHEM  EXP PARASITOL ANTIMICROB AGENTS CH J BIOL CHEM  J BRAZIL CHEM SOC | 4.07  4.07  3.54  2.65  2.18  2.12  1.89  1.77  1.65  1.65 | 17.46  16.52  2.43  10.61  9.56  19.28  -1.86  4.50  2.58  13.27 |

Cluster 6 (“GenBMOL”). This cluster contains N= 1658 publications.

18

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Institution | f(%) | σ |  | Reference | f(%) | σ |
| UNIV BUENOS AIRES | 7.06 | 5.11 |  | El-Sayed NM, 2005, SCIENCE, 309, 409 | 17.43 | 36.57 |
| UNIV FED RIO DE JANEIRO | 6.94 | 3.45 |  | Berriman M, 2005, SCIENCE, 309, 416 | 12.00 | 41.36 |
| SCH MED | 6.76 | -0.38 |  | Ivens AC, 2005, SCIENCE, 309, 436 | 11.94 | 40.45 |
| DEPT PARASITOL | 6.09 | 3.17 |  | Camargo EP, 1964, Revista do Instituto de Medicina Tropical | 10.13 | 17.35 |
| INST BIOFIS CARLOS CHAGAS | 6.09 | 8.83 |  | de Sao Paulo, 6, 93 |  |  |
| FILHO |  |  |  | El-Sayed NM, 2005, SCIENCE, 309, 404 | 7.66 | 27.57 |
| UNIV SAO PAULO | 6.09 | -3.09 |  | Contreras VT, 1985, MOL BIOCHEM PARASIT, 16, 315 | 7.06 | 20.77 |
| FAC MED | 5.97 | -4.68 |  | Sambrook J, 1989, MOL CLONING LAB MANU | 6.39 | 16.26 |
| BUENOS AIRES | 5.73 | 3.08 |  | Laemmli UK, 1970, NATURE, 227, 680 | 6.21 | 5.98 |
| DEPT BIOCHEM | 5.37 | 8.26 |  | Atwood JA, 2005, SCIENCE, 309, 473 | 5.67 | 18.97 |
| UNIV FED MINAS GERAIS | 5.25 | 1.04 |  | Clayton CE, 2002, EMBO J, 21, 1881 | 5.43 | 29.25 |
| FIOCRUZ MS | 4.76 | 0.96 |  | Bradford MM, 1976, ANAL BIOCHEM, 72, 248 | 5.37 | 8.30 |
| CONICET | 4.70 | 7.76 |  | Vanhamme L, 1995, MICROBIOL REV, 59, 223 | 4.22 | 23.56 |
| CONSEJO NACL INVEST CIENT & | 4.58 | 7.72 |  | Altschul SF, 1990, J MOL BIOL, 215, 403 | 3.92 | 15.30 |
| TECN |  |  |  | Contreras V T, 1988, Memorias do Instituto Oswaldo Cruz, | 3.92 | 17.19 |
| FAC CIENCIAS | 4.22 | 3.22 |  | 83, 123 |  |  |
| CSIC | 4.10 | 8.60 |  | Kelly JM, 1992, NUCLEIC ACIDS RES, 20, 3963 | 3.92 | 16.27 |
| UNIV FED SAO PAULO | 3.92 | 4.39 |  | Peacock CS, 2007, NAT GENET, 39, 839 | 3.80 | 22.47 |
| DEPT BIOL | 3.32 | 0.88 |  | Clayton C, 2007, MOL BIOCHEM PARASIT, 156, 93 | 3.68 | 24.02 |
| INST OSWALDO CRUZ | 3.32 | -2.82 |  | Barrett MP, 2003, LANCET, 362, 1469 | 3.44 | 9.84 |
| DEPT BIOQUIM & IMUNOL | 3.26 | 7.81 |  | Vazquez MP, 1999, GENE, 239, 217 | 3.38 | 18.57 |
| BELO HORIZONTE | 3.20 | -1.03 |  | Aslett M, 2010, NUCLEIC ACIDS RES, 38, D457 | 3.32 | 18.46 |
| Country | f(%) | σ |  | RefJournal | f(%) | σ |
| Brazil | 32.93 | -2.82 |  | MOL BIOCHEM PARASIT | 78.65 | 39.31 |
| USA | 26.84 | 1.13 |  | J BIOL CHEM | 70.63 | 32.62 |
| Argentina | 14.90 | 0.36 |  | P NATL ACAD SCI USA | 62.42 | 24.62 |
| UK | 9.53 | 4.22 |  | SCIENCE | 54.83 | 26.25 |
| Spain | 8.14 | 3.80 |  | NUCLEIC ACIDS RES | 53.20 | 51.20 |
| France | 5.61 | -0.11 |  | NATURE | 47.89 | 16.91 |
| Venezuela | 3.56 | 0.04 |  | EXP PARASITOL | 42.82 | 11.29 |
| Japan | 3.32 | 5.09 |  | EMBO J | 38.90 | 37.20 |
| Germany | 3.20 | -0.31 |  | CELL | 37.39 | 28.99 |
| Switzerland | 3.14 | 2.07 |  | MOL CELL BIOL | 35.04 | 49.76 |
| Author | f(%) | σ |  | Subject | f(%) | σ |
| De Souza W | 3.68 | 12.38 |  | Parasitology | 36.01 | 12.26 |
| Goldenberg S | 2.96 | 15.13 |  | Biochemistry & Molecular Biology | 34.86 | 22.38 |
| Pereira CA | 2.90 | 22.33 |  | Microbiology | 12.24 | 9.11 |
| Schenkman S | 2.47 | 11.24 |  | Tropical Medicine | 8.56 | -9.09 |
| Alonso C | 2.41 | 16.70 |  | Multidisciplinary Sciences | 7.48 | 9.46 |
| Krieger MA | 2.35 | 14.82 |  | Cell Biology | 6.76 | 4.36 |
| Requena JM | 2.23 | 18.60 |  | Genetics & Heredity | 6.45 | 19.41 |
| Lopez MC | 2.11 | 11.18 |  | Biophysics | 6.03 | 10.68 |
| Silber AM | 2.05 | 15.24 |  | Infectious Diseases | 5.49 | -4.62 |
| Soto M | 1.99 | 17.28 |  | Immunology | 3.98 | -8.76 |

|  |  |  |
| --- | --- | --- |
| Keywords | f(%) | σ |
| TRYPANOSOMA-CRUZI | 22.01 | -2.89 |
| BRUCEI | 19.60 | 33.36 |
| EXPRESSION | 12.30 | 11.45 |
| CRUZI | 10.98 | 12.23 |
| CHAGAS-DISEASE | 10.80 | -10.28 |
| SEQUENCE | 9.71 | 21.64 |
| IDENTIFICATION | 9.05 | 5.64 |
| PROTEIN | 8.99 | 15.06 |
| GENE-EXPRESSION | 8.32 | 20.31 |
| DIFFERENTIATION | 7.24 | 15.15 |
| GENE | 6.27 | 12.86 |
| PROTEINS | 6.03 | 10.23 |
| PLASMODIUM-FALCIPARUM | 5.31 | 6.38 |
| SACCHAROMYCES-CEREVISIAE | 5.31 | 12.39 |
| FAMILY | 5.07 | 15.05 |
| LEISHMANIA | 4.95 | 10.33 |
| DNA | 4.89 | 6.24 |
| GENOME | 4.83 | 18.68 |
| LEISHMANIA-MAJOR | 4.83 | 11.76 |
| PURIFICATION | 4.76 | 7.16 |
| Title Words | f(%) | σ |
| TRYPANOSOMA | 43.31 | 14.26 |
| CRUZI | 37.94 | 11.22 |
| LEISHMANIA | 16.28 | 26.05 |
| PROTEIN | 12.42 | 24.23 |
| CHARACTERIZATION | 10.07 | 13.39 |
| GENE | 9.35 | 20.51 |
| ANALYSIS | 7.12 | 10.74 |
| EXPRESSION | 6.88 | 11.40 |
| PROTEINS | 5.61 | 15.27 |
| LEISHMANIASIS | 5.55 | 16.10 |
| Journal | f(%) | σ |
| MOL BIOCHEM PARASIT  PLOS ONE  EXP PARASITOL PARASITOL RES J BIOL CHEM  INT J PARASITOL  MEM I OSWALDO CRUZ PLOS NEGLECT TROP D BIOCHEM BIOPH RES CO FEMS MICROBIOL LETT | 11.34  4.58  3.92  2.90  2.59  2.41  2.41  2.29  2.11  1.87 | 22.35  10.75  3.35  3.92  6.37  6.07  -2.44  0.41  9.74  11.21 |

Cluster 7 (“TryStrainPAR”). This cluster contains N= 1299 publications.

21

|  |  |  |
| --- | --- | --- |
| Reference | f(%) | σ |
| Souto RP, 1996, MOL BIOCHEM PARASIT, 83, 141  Tibayrenc M, 1986, P NATL ACAD SCI USA, 83, 115  Zingales B, 2009, MEM I OSWALDO CRUZ, 104, 1051  Tibayrenc M, 1988, EVOLUTION, 42, 277  Zingales B, 2012, INFECT GENET EVOL, 12, 240  Brisse S, 2000, INT J PARASITOL, 30, 35  Miles MA, 1978, NATURE, 272, 819  Machado CA, 2001, P NATL ACAD SCI USA, 98, 7396  Miles MA, 1977, T ROY SOC TROP MED H, 71, 217  Morel C, 1980, P NATL ACAD SCI-BIOL, 77, 6810  Gaunt MW, 2003, NATURE, 421, 936  Brisse S, 2001, INT J PARASITOL, 31, 1218  Westenberger SJ, 2005, GENETICS, 171, 527  Yeo M, 2005, INT J PARASITOL, 35, 225  Tibayrenc M, 1993, P NATL ACAD SCI USA, 90, 1335  Hoare CA, 1972, TRYPANOSOMES MAMMALS Miles MA, 1980, T ROY SOC TROP MED H, 74, 221  Macedo AM, 1998, PARASITOL TODAY, 14, 119  Barnabe C, 2000, PARASITOLOGY, 120, 513  Tibayrenc M, 1990, P NATL ACAD SCI USA, 87, 2414 | 24.40  19.17  18.71  15.70  14.70  13.93  13.86  13.70  12.39  12.16  10.78  10.39  10.32  10.01  9.78  9.55  9.39  9.01  8.62  8.16 | 60.52  55.68  40.97  52.02  39.20  49.48  46.55  46.61  42.76  39.56  41.57  41.91  41.73  38.38  41.48  29.52  36.74  36.20  39.47  37.57 |
| RefJournal | f(%) | σ |
| MEM I OSWALDO CRUZ  MOL BIOCHEM PARASIT AM J TROP MED HYG  T ROY SOC TROP MED H EXP PARASITOL  INT J PARASITOL PARASITOLOGY ACTA TROP  P NATL ACAD SCI USA NATURE | 65.13  62.36  60.43  56.89  54.12  54.12  53.12  52.50  48.58  36.03 | 26.28  22.32  21.95  33.51  18.86  34.73  32.27  23.38  11.25  5.55 |
| Subject | f(%) | σ |
| Parasitology | 55.66 | 27.61 |
| Tropical Medicine | 35.64 | 17.98 |
| Infectious Diseases | 13.55 | 6.23 |
| Public, Environmental & Occupational Health  Biochemistry & Molecular Biology  Microbiology Multidisciplinary Sciences Genetics & Heredity Veterinary Sciences Immunology | 11.09  8.08  5.39  4.16  3.08  2.62  2.31 | 5.56  -7.11  -1.84  1.69  6.10  0.93  -9.71 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Keywords | f(%) | σ |  | Institution | f(%) | σ |
| CHAGAS-DISEASE | 33.33 | 10.82 |  | FAC MED | 12.39 | 3.82 |
| IDENTIFICATION | 14.63 | 13.58 |  | INST OSWALDO CRUZ | 12.24 | 12.55 |
| STRAINS | 12.78 | 28.88 |  | DEPT PARASITOL | 11.24 | 11.78 |
| TRYPANOSOMA-CRUZI | 11.24 | -11.52 |  | FIOCRUZ MS | 9.01 | 8.40 |
| DNA | 10.08 | 17.54 |  | UNIV SAO PAULO | 8.62 | 0.60 |
| INFECTION | 10.01 | 4.05 |  | UNIV FED MINAS GERAIS | 7.78 | 5.22 |
| POLYMERASE-CHAIN-REACTION | 9.16 | 14.64 |  | BELO HORIZONTE | 5.39 | 3.29 |
| RIBOSOMAL-RNA | 9.01 | 30.70 |  | CNRS | 5.39 | 9.07 |
| CRUZI | 8.85 | 7.19 |  | FAC CIENCIAS | 5.16 | 4.86 |
| BRAZIL | 8.62 | 17.19 |  | INST CIENCIAS BIOL | 5.16 | 9.11 |
| TRANSMISSION | 8.47 | 7.66 |  | UNIV CHILE | 4.77 | 6.56 |
| MULTILOCUS ENZYME ELEC- | 8.08 | 34.25 |  | DEPT BIOL | 4.46 | 3.22 |
| TROPHORESIS |  |  |  | UNIV LOS ANDES | 4.39 | 9.23 |
| LINEAGES | 7.24 | 29.88 |  | DEPT BIOQUIM & IMUNOL | 4.31 | 10.42 |
| PHYLOGENETIC LINEAGES | 7.16 | 31.54 |  | FUNDACAO OSWALDO CRUZ | 4.23 | 2.64 |
| EVOLUTION | 7.08 | 14.10 |  | DEPT TROP MED | 4.00 | 12.65 |
| VARIABILITY | 6.93 | 25.13 |  | DEPT BIOQUIM | 3.93 | 4.78 |
| POPULATIONS | 6.70 | 13.93 |  | BUENOS AIRES | 3.77 | -0.78 |
| MICE | 5.77 | 0.10 |  | UNIV LONDON LONDON SCH HYG | 3.62 | 8.53 |
| AGENT | 5.70 | 26.63 |  | & TROP MED |  |  |
| PARASITIC PROTOZOA | 5.62 | 17.71 |  | INST CIENCIAS BIOMED | 3.46 | 5.14 |
| Title Words | f(%) | σ |  | Country | f(%) | σ |
| TRYPANOSOMA | 62.12 | 27.79 |  | Brazil | 44.96 | 6.52 |
| CRUZI | 54.20 | 23.32 |  | USA | 16.86 | -7.24 |
| CHAGAS | 14.70 | -4.14 |  | France | 11.47 | 9.03 |
| DISEASE | 13.78 | -3.14 |  | UK | 11.16 | 6.06 |
| TRYPANOSOMA-CRUZI | 10.93 | -0.71 |  | Argentina | 10.01 | -4.68 |
| BRAZIL | 8.85 | 16.19 |  | Colombia | 9.55 | 15.89 |
| STRAINS | 8.39 | 22.10 |  | Venezuela | 5.47 | 3.75 |
| GENETIC | 8.24 | 25.66 |  | Chile | 5.31 | 5.65 |
| INFECTION | 8.24 | -0.68 |  | Bolivia | 4.54 | 9.19 |
| CHARACTERIZATION | 7.08 | 6.21 |  | Spain | 4.23 | -2.60 |
| Journal | f(%) | σ |  | Author | f(%) | σ |
| MEM I OSWALDO CRUZ | 9.08 | 10.90 |  | Tibayrenc M | 8.01 | 39.07 |
| ACTA TROP | 6.39 | 12.15 |  | Miles MA | 5.93 | 26.09 |
| EXP PARASITOL | 5.70 | 6.98 |  | Jansen AM | 5.54 | 28.47 |
| INFECT GENET EVOL | 4.93 | 19.35 |  | Barnabe C | 5.00 | 29.75 |
| PARASITOLOGY | 4.46 | 10.17 |  | Macedo AM | 4.16 | 23.50 |
| PARASITOL RES | 4.31 | 7.46 |  | Solari A | 3.85 | 18.72 |
| MOL BIOCHEM PARASIT | 4.23 | 3.70 |  | Chiari E | 3.39 | 13.61 |
| AM J TROP MED HYG | 4.00 | 1.88 |  | Breniere SF | 3.23 | 16.93 |
| PLOS NEGLECT TROP D | 3.77 | 4.04 |  | Zingales B | 3.23 | 17.17 |
| INT J PARASITOL | 3.62 | 9.83 |  | Guhl F | 3.00 | 15.24 |

Cluster 8 (“TrypBMOL”). This cluster contains N= 1244 publications.

24

|  |  |  |
| --- | --- | --- |
| Institution | f(%) | σ |
| UNIV FED SAO PAULO  SCH MED  ESCOLA PAULISTA MED UNIV BUENOS AIRES  UNIV FED RIO DE JANEIRO  DEPT MICROBIOL IMUNOL & PARASITOL  UNIV SAO PAULO | 12.54  10.85  10.05  8.36  8.28  6.83  6.83 | 24.08  5.34  24.05  6.66  5.15  20.76  -1.72 |
| INST BIOFIS CARLOS CHAGAS  FILHO  FAC CIENCIAS EXACTAS & NAT DEPT PATHOL  DEPT BIOCHEM DEPT QUIM ORGAN DEPT CHEM | 6.59  6.35  6.11  5.87  5.79  5.71 | 8.75  11.16  4.52  8.33  13.45  6.34 |
| DEPT MICROBIOL IMMUNOL & | 5.55 | 19.63 |
| PARASITOL |  |  |
| FAC MED | 5.55 | -4.57 |
| RA-1428 BUENOS AIRES  DEPT BIOQUIM DEPT MICROBIOL  INST INVEST BIOTECNOL INST OSWALDO CRUZ | 5.39  4.26  4.26  3.54  3.54 | 13.48  5.51  4.82  12.15  -2.08 |
| Country | f(%) | σ |
| Brazil | 37.14 | 0.65 |
| USA | 32.72 | 5.73 |
| Argentina | 16.56 | 1.97 |
| UK | 9.16 | 3.15 |
| France | 5.39 | -0.44 |
| Germany | 4.74 | 2.76 |
| Canada | 2.81 | 1.99 |
| Japan | 2.81 | 3.04 |
| Chile | 2.17 | -1.25 |
| India | 1.93 | 2.16 |
| Author | f(%) | σ |
| Yoshida N | 5.47 | 29.32 |
| Schenkman S | 4.42 | 19.40 |
| Frasch ACC | 4.34 | 19.40 |
| Mortara RA | 4.26 | 22.23 |
| Previato JO | 3.94 | 22.66 |
| Andrews NW | 3.62 | 22.81 |
| De Lederkremer RM  Colli W Campetella O Mendonca-Previato L | 3.30  2.97  2.89  2.73 | 25.45  13.37  20.62  19.17 |

|  |  |  |
| --- | --- | --- |
| Reference | f(%) | σ |
| Schenkman S, 1991, CELL, 65, 1117 | 22.35 | 62.55 |
| Schenkman S, 1994, ANNU REV MICROBIOL, 48, 499  Previato JO, 1985, MOL BIOCHEM PARASIT, 16, 85  Tardieux I, 1992, CELL, 71, 1117  Schenkman S, 1993, MOL BIOCHEM PARASIT, 59, 293  Andrews NW, 1987, EXP PARASITOL, 64, 474  Frasch ACC, 2000, PARASITOL TODAY, 16, 282  Tardieux I, 1994, J EXP MED, 179, 1017  Pereira MEA, 1983, SCIENCE, 219, 1444  Buschiazzo A, 2002, MOL CELL, 10, 757  Parodi AJ, 1992, EMBO J, 11, 1705  Schenkman S, 1992, J EXP MED, 175, 567  Yoshida N, 1989, INFECT IMMUN, 57, 1663  Brener Z, 1973, ANNU REV MICROBIOL, 27, 347  Laemmli UK, 1970, NATURE, 227, 680  Pereira MEA, 1991, J EXP MED, 174, 179  Previato JO, 1990, J BIOL CHEM, 265, 2518  Previato JO, 1995, J BIOL CHEM, 270, 7241  Almeida IC, 1994, BIOCHEM J, 304, 793  Burleigh BA, 1995, ANNU REV MICROBIOL, 49, 175 | 13.67  12.14  12.06  11.41  10.37  10.37  9.08  9.00  8.92  8.44  8.28  7.96  7.88  7.80  7.64  7.64  7.15  7.07  7.07 | 46.23  46.37  42.07  44.04  34.25  34.65  37.83  34.22  39.50  38.88  39.29  35.28  12.94  8.22  36.84  35.30  34.55  29.91  27.08 |
| RefJournal | f(%) | σ |
| J BIOL CHEM | 76.21 | 32.44 |
| MOL BIOCHEM PARASIT  INFECT IMMUN J EXP MED CELL  P NATL ACAD SCI USA SCIENCE  NATURE  EXP PARASITOL J IMMUNOL | 69.86  59.41  52.97  51.85  49.28  43.41  41.08  40.68  39.95 | 27.46  28.56  29.26  40.15  11.53  13.60  9.35  8.12  15.15 |
| Subject | f(%) | σ |
| Biochemistry & Molecular Biology  Parasitology Immunology Microbiology Infectious Diseases Cell Biology Tropical Medicine Chemistry, Organic  Medicine, Research & Experimental  Multidisciplinary Sciences | 32.96  24.20  15.68  11.98  11.01  10.21  6.99  6.35  3.86  3.38 | 17.52  0.76  5.80  7.52  2.92  9.63  -9.35  9.51  1.75  0.12 |

|  |  |  |
| --- | --- | --- |
| Keywords | f(%) | σ |
| TRYPANOSOMA-CRUZI | 24.84 | -0.21 |
| MAMMALIAN-CELLS | 21.30 | 46.25 |
| TRANS-SIALIDASE | 17.44 | 37.97 |
| CHAGAS-DISEASE | 15.51 | -4.82 |
| INVASION | 14.15 | 37.85 |
| IDENTIFICATION | 9.00 | 4.82 |
| ACID | 8.28 | 24.58 |
| EXPRESSION | 7.96 | 3.34 |
| INFECTION | 7.80 | 0.93 |
| METACYCLIC TRYPOMASTIG- | 7.80 | 27.83 |
| OTES |  |  |
| TRYPOMASTIGOTES | 6.67 | 20.48 |
| PROTEIN | 6.11 | 6.94 |
| SURFACE | 5.63 | 16.33 |
| CELLS | 5.47 | 4.76 |
| PROTEINS | 5.23 | 6.95 |
| GLYCOPROTEINS | 4.90 | 25.28 |
| FORMS | 4.74 | 11.87 |
| CRUZI | 4.66 | 0.02 |
| MEMBRANE | 4.66 | 14.38 |
| BIOSYNTHESIS | 4.42 | 12.97 |
| Title Words | f(%) | σ |
| TRYPANOSOMA | 49.84 | 17.50 |
| CRUZI | 45.42 | 15.75 |
| TRANS-SIALIDASE | 13.91 | 48.53 |
| CELL | 11.90 | 19.59 |
| TRYPANOSOMA-CRUZI | 11.82 | 0.28 |
| INVASION | 10.69 | 36.63 |
| HOST | 9.32 | 20.70 |
| CELLS | 8.60 | 10.69 |
| INFECTION | 7.07 | -2.12 |
| SYNTHESIS | 6.51 | 8.07 |
| Journal | f(%) | σ |
| MOL BIOCHEM PARASIT  INFECT IMMUN J BIOL CHEM GLYCOBIOLOGY EXP PARASITOL  MEM I OSWALDO CRUZ CARBOHYD RES  CELL MICROBIOL MICROBES INFECT PARASITOLOGY | 6.19  5.55  4.02  3.70  2.57  2.25  2.09  2.09  2.01  1.93 | 7.95  11.49  10.51  19.26  -0.08  -2.42  19.70  15.38  7.44  2.01 |

Cluster 9 (“KetoBIOCHEM”). This cluster contains N= 1004 publications.

27

|  |  |  |
| --- | --- | --- |
| Institution | f(%) | σ |
| UNIV ILLINOIS | 11.75 | 38.94 |
| UNIV FED RIO DE JANEIRO | 10.56 | 7.92 |
| INST BIOFIS CARLOS CHAGAS  FILHO  DEPT PATHOBIOL DEPT CHEM  UNIV GEORGIA | 9.86  8.86  8.67  7.77 | 14.34  31.67  11.41  16.02 |
| INST VENEZOLANO INVEST | 7.47 | 24.12 |
| CIENT |  |  |
| DEPT CELLULAR BIOL  MOL PARASITOL LAB UNIV SAO PAULO  CTR TROP & EMERGING GLOBAL DIS  FAC CIENCIAS DEPT PARASITOL LAB QUIM BIOL  UNIV BUENOS AIRES  UNIV ESTADUAL CAMPINAS SCH MED  FAC CIENCIAS EXACTAS & NAT DEPT QUIM  LAB ULTRAESTRUTURA CELU- LAR HERTHA MEYER | 7.07  7.07  6.37  6.27  5.78  5.48  5.38  4.98  4.78  4.68  4.58  4.48  4.48 | 23.16  24.55  -2.08  20.61  5.44  1.53  28.90  0.79  11.60  -2.87  5.98  7.76  15.74 |
| Country | f(%) | σ |
| Brazil | 35.26 | -0.66 |
| USA | 32.57 | 5.04 |
| Venezuela | 11.65 | 13.91 |
| Argentina | 9.96 | -4.16 |
| UK | 6.77 | -0.16 |
| Spain | 6.37 | 0.58 |
| Germany | 4.98 | 2.90 |
| France | 3.69 | -2.72 |
| Japan | 2.79 | 2.67 |
| India | 2.49 | 3.54 |
| Author | f(%) | σ |
| Docampo R | 15.04 | 45.54 |
| Urbina JA | 7.67 | 31.74 |
| De Souza W | 6.97 | 20.90 |
| Moreno SNJ | 6.37 | 31.83 |
| Tempone AG | 3.78 | 25.24 |
| Oldfield E | 3.59 | 28.24 |
| Rodriguez JB | 3.59 | 25.96 |
| Nakamura CV | 3.29 | 16.56 |
| Vercesi AE | 3.09 | 23.44 |
| Ueda-Nakamura T | 2.99 | 17.98 |

|  |  |  |
| --- | --- | --- |
| Reference | f(%) | σ |
| Docampo R, 1995, BIOCHEM J, 310, 1005  Martin MB, 2001, J MED CHEM, 44, 909  Urbina JA, 1999, J BIOL CHEM, 274, 33609  Scott DA, 1998, J BIOL CHEM, 273, 22151  Vercesi AE, 1994, BIOCHEM J, 304, 227  Lu HG, 1998, MOL CELL BIOL, 18, 2309  Docampo R, 2005, NAT REV MICROBIOL, 3, 251  Lazardi K, 1990, ANTIMICROB AGENTS CH, 34, 2097  Urbina JA, 1996, SCIENCE, 273, 969  Urbina JA, 1988, ANTIMICROB AGENTS CH, 32, 1237  Ruiz FA, 2001, J BIOL CHEM, 276, 26114  Scott DA, 1997, J BIOL CHEM, 272, 28020  Urbina JA, 1995, MOL BIOCHEM PARASIT, 73, 199  Montalvetti A, 2001, J BIOL CHEM, 276, 33930  Urbina JA, 1993, ANTIMICROB AGENTS CH, 37, 580  Docampo R, 1989, J BIOL CHEM, 264, 108  Rodrigues CO, 1999, MOL CELL BIOL, 19, 7712  Scott DA, 2000, J BIOL CHEM, 275, 24215  Urbina JA, 1996, CHEMOTHERAPY, 42, 294  Urbina JA, 2003, TRENDS PARASITOL, 19, 495 | 9.76  8.86  8.67  7.87  6.67  5.98  5.88  5.88  5.88  5.68  5.38  5.28  5.18  5.08  5.08  4.98  4.98  4.98  4.98  4.68 | 40.55  36.80  37.24  37.33  35.66  32.54  28.31  25.86  20.63  27.67  30.69  29.82  28.96  24.91  24.55  30.31  30.96  30.31  27.05  7.81 |
| RefJournal | f(%) | σ |
| J BIOL CHEM | 65.14 | 21.69 |
| MOL BIOCHEM PARASIT  P NATL ACAD SCI USA ANTIMICROB AGENTS CH BIOCHEM J  SCIENCE  EXP PARASITOL NATURE  BIOCHEM BIOPH RES CO FEBS LETT | 59.06  45.32  44.52  44.42  37.45  36.95  30.08  29.88  27.29 | 17.41  7.70  28.03  24.99  7.94  4.73  0.72  17.43  15.49 |
| Subject | f(%) | σ |
| Biochemistry & Molecular Biology  Parasitology  Pharmacology & Pharmacy  Microbiology Chemistry, Medicinal Cell Biology Chemistry, Organic Tropical Medicine Biophysics  Infectious Diseases | 31.18  24.60  17.23  15.34  12.95  6.47  5.78  5.48  4.88  4.28 | 14.16  0.99  16.69  11.02  9.95  2.96  7.33  -9.68  5.82  -4.95 |

|  |  |  |
| --- | --- | --- |
| Keywords | f(%) | σ |
| TRYPANOSOMA-CRUZI | 41.93 | 12.31 |
| IN-VITRO | 18.23 | 15.91 |
| CHAGAS-DISEASE | 12.35 | -6.79 |
| SACCHAROMYCES-CEREVISIAE | 8.76 | 18.52 |
| CRUZI | 7.47 | 4.24 |
| BRUCEI | 6.97 | 5.15 |
| GROWTH | 6.57 | 14.18 |
| KETOCONAZOLE | 6.47 | 27.09 |
| LEISHMANIA-DONOVANI | 6.37 | 11.96 |
| PLASMODIUM-FALCIPARUM | 6.18 | 6.65 |
| ACIDOCALCISOMES | 5.18 | 27.06 |
| TOXOPLASMA-GONDII | 5.18 | 7.21 |
| EPIMASTIGOTES | 5.08 | 10.86 |
| EXPRESSION | 4.78 | -1.32 |
| PROGRAMMED CELL-DEATH | 4.78 | 16.31 |
| TRYPANOSOMA SCHIZOTRY- | 4.68 | 20.10 |
| PANUM CRUZI |  |  |
| CHEMOTHERAPY | 4.58 | 3.74 |
| INHIBITORS | 4.48 | 4.72 |
| PLASMA-MEMBRANE | 4.28 | 16.35 |
| CELLS | 3.98 | 1.57 |
| Title Words | f(%) | σ |
| TRYPANOSOMA | 29.08 | 1.02 |
| CRUZI | 26.49 | 0.45 |
| LEISHMANIA | 12.85 | 14.65 |
| ACTIVITY | 12.35 | 9.88 |
| AGAINST | 7.77 | 4.90 |
| INHIBITORS | 6.27 | 9.76 |
| VITRO | 6.08 | 8.11 |
| EFFECTS | 5.68 | 7.95 |
| SYNTHESIS | 5.48 | 5.25 |
| CELL | 5.18 | 4.64 |
| Journal | f(%) | σ |
| MOL BIOCHEM PARASIT  J BIOL CHEM ANTIMICROB AGENTS CH EXP PARASITOL PARASITOL RES  BIOCHEM J  J MED CHEM  J EUKARYOT MICROBIOL PARASITOLOGY  BIOORG MED CHEM LETT | 5.78  4.88  4.48  4.18  3.59  2.79  2.29  1.79  1.69  1.49 | 6.32  12.16  13.12  3.13  4.77  10.72  6.70  6.92  1.14  4.32 |

Cluster 10 (“ProtBMOL”). This cluster contains N= 835 publications.

Keywords f(%) σ

TRYPANOSOMA-CRUZI 44.43 12.89

CHAGAS-DISEASE 19.40 -1.20

IDENTIFICATION 16.17 12.80

Institution f(%) σ

UNIV FED RIO DE JANEIRO 11.86 8.93

|  |  |  |
| --- | --- | --- |
| Reference | f(%) | σ |
| Eakin AE, 1992, J BIOL CHEM, 267, 7411  Engel JC, 1998, J EXP MED, 188, 725  Mcgrath ME, 1995, J MOL BIOL, 247, 251  Meirelles MNL, 1992, MOL BIOCHEM PARASIT, 52, 175  Harth G, 1993, MOL BIOCHEM PARASIT, 58, 17  Campetella O, 1992, MOL BIOCHEM PARASIT, 50, 225  Sajid M, 2002, MOL BIOCHEM PARASIT, 120, 1  Murta ACM, 1990, MOL BIOCHEM PARASIT, 43, 27  Laemmli UK, 1970, NATURE, 227, 680  Cazzulo JJ, 1989, MOL BIOCHEM PARASIT, 33, 33  Cazzulo JJ, 1990, BIOCHIM BIOPHYS ACTA, 1037, 186  Gillmor SA, 1997, PROTEIN SCI, 6, 1603  Soutopadron T, 1990, J CELL SCI, 96, 485  Engel JC, 1998, J CELL SCI, 111, 597  Mckerrow JH, 1993, ANNU REV MICROBIOL, 47, 821  Mottram JC, 1989, FEBS LETT, 258, 211  Cazzulo JJ, 2001, CURR PHARM DESIGN, 7, 1143  Scharfstein J, 1986, J IMMUNOL, 137, 1336  Cazzulo JJ, 1997, BIOL CHEM, 378, 1  Eakin AE, 1993, J BIOL CHEM, 268, 6115 | 19.16  17.37  15.69  13.89  12.69  11.98  11.74  11.38  11.02  10.78  10.18  9.46  9.10  8.74  8.62  8.38  8.02  7.78  7.66  7.54 | 57.20  48.64  52.53  43.69  45.73  40.93  43.25  38.61  11.80  41.88  39.24  40.80  32.31  35.62  38.71  40.64  33.49  30.98  32.50  36.98 |
| RefJournal | f(%) | σ |
| J BIOL CHEM | 75.57 | 26.19 |
| MOL BIOCHEM PARASIT  BIOCHEM J  EXP PARASITOL  P NATL ACAD SCI USA FEBS LETT  EUR J BIOCHEM INFECT IMMUN NATURE  J EXP MED | 70.66  44.55  44.31  42.28  38.92  35.33  34.25  33.53  31.98 | 22.99  22.89  8.95  5.17  24.61  23.59  6.51  2.86  8.77 |
| Subject | f(%) | σ |
| Biochemistry & Molecular Biology  Parasitology Chemistry, Medicinal Microbiology Immunology  Cell Biology  Biophysics  Pharmacology & Pharmacy Tropical Medicine Chemistry, Organic | 38.92  24.31  16.41  8.38  7.54  7.31  6.59  5.51  4.79  4.55 | 19.16  0.70  13.39  1.99  -2.88  3.86  8.67  0.18  -9.36  4.33 |

UNIV CALIF SAN FRANCISCO 11.38 28.78

DEPT PATHOL 8.98 8.11

EXPRESSION 11.62 7.28

INHIBITORS 10.90 16.77

INST BIOFIS CARLOS CHAGAS FILHO

7.19 8.24

IN-VITRO 10.18 4.84

PLASMODIUM-FALCIPARUM 8.50 10.18

CRUZI 7.90 4.46

PURIFICATION 7.90 11.27

PROTEINASE 7.78 32.46

CRYSTAL-STRUCTURE 6.95 9.47

INFECTION 6.47 -0.73

PROTEASE 5.99 27.99

CATHEPSIN-B 5.51 28.31

MAJOR CYSTEINE PROTEINASE 5.51 25.15

UNIV SAO PAULO 6.83 -1.42

INST OSWALDO CRUZ 6.59 2.42

DEPT CHEM 5.63 5.05

SCH MED 5.51 -1.68

UNIV BUENOS AIRES 5.51 1.46

UNIV FED SAO PAULO 5.51 6.18

UNIV GLASGOW 5.39 17.95

FAC MED 5.03 -4.26

ESCOLA PAULISTA MED 4.91 7.76

FIOCRUZ MS 4.91 0.89

SPECIFICITY

30

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | 5.27 | 16.19 |  | DEPT MICROBIOL GERAL | 4.55 | 21.38 |
| SEQUENCE |  | 5.15 | 6.16 |  | CONICET | 4.19 | 4.45 |
| CYSTEINE PROTEINASE |  | 4.79 | 18.95 |  | FUNDACAO OSWALDO CRUZ | 4.07 | 1.84 |
| CHEMOTHERAPY |  | 4.67 | 3.57 |  | FAC CIENCIAS EXACTAS & NAT | 3.95 | 4.14 |
| CYSTEINE PROTEASE | IN- | 4.67 | 21.26 |  | DEPT PHARMACEUT CHEM | 3.83 | 16.59 |
| HIBITORS |  |  |  |  | INST QUIM | 3.83 | 3.90 |
| Title Words |  | f(%) | σ |  | Country | f(%) | σ |
| CYSTEINE |  | 31.26 | 77.80 |  | Brazil | 34.49 | -1.06 |
| TRYPANOSOMA |  | 24.67 | -1.92 |  | USA | 23.23 | -1.58 |
| CRUZI |  | 20.84 | -3.32 |  | Argentina | 15.69 | 0.90 |
| PROTEASE |  | 16.17 | 53.31 |  | UK | 9.22 | 2.64 |
| INHIBITORS |  | 13.89 | 24.70 |  | France | 6.59 | 1.14 |
| PROTEINASE |  | 10.90 | 46.22 |  | Germany | 4.67 | 2.15 |
| TRYPANOSOMA-CRUZI |  | 10.54 | -0.93 |  | Sweden | 4.31 | 9.09 |
| CRUZIPAIN |  | 9.22 | 39.02 |  | Canada | 4.19 | 4.47 |
| CRUZAIN |  | 8.98 | 42.40 |  | Belgium | 3.35 | 3.90 |
| ACTIVITY |  | 8.38 | 3.91 |  | Spain | 3.35 | -3.16 |
| Journal |  | f(%) | σ |  | Author | f(%) | σ |
| MOL BIOCHEM PARASIT |  | 7.66 | 9.19 |  | Cazzulo JJ | 11.02 | 35.55 |
| EXP PARASITOL |  | 4.31 | 3.08 |  | Mckerrow JH | 8.50 | 36.83 |
| EUR J MED CHEM |  | 3.11 | 8.30 |  | Juliano L | 5.15 | 30.15 |
| J BIOL CHEM |  | 3.11 | 6.01 |  | Coombs GH | 4.91 | 29.92 |
| PARASITOL RES |  | 3.11 | 3.28 |  | Scharfstein J | 4.91 | 23.21 |
| PARASITOLOGY |  | 2.04 | 1.92 |  | Mottram JC | 4.67 | 26.95 |
| FEMS MICROBIOL LETT |  | 1.92 | 8.19 |  | Branquinha MH | 4.43 | 28.12 |
| BIOORGAN MED CHEM |  | 1.80 | 4.10 |  | Juliano MA | 3.95 | 24.37 |
| COMP BIOCHEM PHYS B |  | 1.80 | 9.19 |  | D’avila-Levy CM | 3.71 | 26.31 |
| EUR J BIOCHEM |  | 1.80 | 9.30 |  | Santos ALS | 3.23 | 23.85 |

Cluster 11 (“BloodHEM”). This cluster contains N= 772 publications.

33

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Institution | f(%) | σ |  | Reference | f(%) | σ |
| FAC MED | 12.69 | 3.23 |  | Schmunis GA, 1991, TRANSFUSION, 31, 547 | 16.71 | 48.06 |
| UNIV SAO PAULO | 9.97 | 1.83 |  | Grant IH, 1989, ANN INTERN MED, 111, 849 | 15.16 | 48.53 |
| SCH MED | 8.29 | 1.41 |  | Nickerson P, 1989, ANN INTERN MED, 111, 851 | 11.79 | 41.96 |
| DEPT PATHOL | 5.57 | 2.77 |  | Moser DR, 1989, J CLIN MICROBIOL, 27, 1477 | 10.10 | 26.69 |
| DEPT PARASITOL | 5.31 | 1.12 |  | Sturm NR, 1989, MOL BIOCHEM PARASIT, 33, 205 | 9.46 | 25.67 |
| AMER RED CROSS | 4.92 | 20.29 |  | Avila HA, 1991, MOL BIOCHEM PARASIT, 48, 211 | 8.94 | 29.42 |
| UNIV FED MINAS GERAIS | 4.53 | -0.23 |  | Kirchhoff LV, 1987, AM J MED, 82, 915 | 8.55 | 34.23 |
| DEPT MED | 4.02 | 0.97 |  | Wincker P, 1994, AM J TROP MED HYG, 51, 771 | 8.29 | 23.75 |
| INST OSWALDO CRUZ | 3.63 | -1.52 |  | Kirchhoff LV, 1993, NEW ENGL J MED, 329, 639 | 7.77 | 17.60 |
| ESCOLA PAULISTA MED | 3.50 | 4.30 |  | Avila HA, 1993, J CLIN MICROBIOL, 31, 2421 | 7.38 | 26.96 |
| BUENOS AIRES | 3.37 | -1.16 |  | Britto C, 1995, PARASITOLOGY, 110, 241 | 6.87 | 25.06 |
| BELO HORIZONTE | 3.24 | -0.64 |  | Kerndt PR, 1991, TRANSFUSION, 31, 814 | 6.74 | 30.38 |
| FIOCRUZ MS | 3.11 | -1.62 |  | Ibanez CF, 1988, MOL BIOCHEM PARASIT, 30, 27 | 6.35 | 20.92 |
| DEPT INTERNAL MED | 2.98 | 4.07 |  | Delcastillo M, 1990, AM J MED, 88, 693 | 6.22 | 29.26 |
| HOSP CLIN | 2.72 | 3.13 |  | Carvalho MR, 1993, TRANSFUSION, 33, 830 | 6.09 | 30.94 |
| DEPT BIOL | 2.59 | -0.59 |  | Krieger MA, 1992, AM J TROP MED HYG, 46, 427 | 6.09 | 27.51 |
| UNIV CALIF SAN FRANCISCO | 2.46 | 3.71 |  | Leiby DA, 2002, TRANSFUSION, 42, 549 | 6.09 | 20.57 |
| INST CIENCIAS BIOL | 2.33 | 1.11 |  | Da Silveira JF, 2001, TRENDS PARASITOL, 17, 286 | 5.83 | 23.79 |
| UNIV BRASILIA | 2.33 | 3.22 |  | Leiby DA, 1997, J INFECT DIS, 176, 1047 | 5.83 | 26.90 |
| UNIV FED GOIAS | 2.33 | 4.91 |  | Britto C, 1993, MEM I OSWALDO CRUZ, 88, 171 | 5.70 | 22.49 |
| Country | f(%) | σ |  | RefJournal | f(%) | σ |
| Brazil | 37.69 | 0.83 |  | AM J TROP MED HYG | 57.90 | 15.42 |
| USA | 31.35 | 3.64 |  | TRANSFUSION | 41.58 | 51.39 |
| Argentina | 13.47 | -0.88 |  | J CLIN MICROBIOL | 41.06 | 33.14 |
| France | 5.57 | -0.12 |  | MEM I OSWALDO CRUZ | 37.82 | 3.90 |
| Spain | 5.05 | -1.04 |  | MOL BIOCHEM PARASIT | 35.10 | 1.13 |
| Chile | 3.76 | 1.71 |  | J INFECT DIS | 30.83 | 12.06 |
| Canada | 3.37 | 2.67 |  | T ROY SOC TROP MED H | 30.05 | 7.13 |
| Bolivia | 3.24 | 4.08 |  | NEW ENGL J MED | 29.66 | 15.61 |
| UK | 3.24 | -4.02 |  | LANCET | 25.13 | 6.32 |
| Venezuela | 3.24 | -0.46 |  | EXP PARASITOL | 24.35 | -3.49 |
| Author | f(%) | σ |  | Subject | f(%) | σ |
| Kirchhoff LV | 2.85 | 12.58 |  | Tropical Medicine | 21.50 | 3.38 |
| Leiby DA | 2.85 | 16.55 |  | Parasitology | 20.08 | -2.11 |
| Umezawa ES | 2.20 | 11.52 |  | Hematology | 15.80 | 29.87 |
| Luquetti AO | 1.94 | 8.72 |  | Microbiology | 13.47 | 7.58 |
| Marcipar IS | 1.94 | 16.27 |  | Infectious Diseases | 13.21 | 4.47 |
| Chiari E | 1.81 | 4.65 |  | Immunology | 11.79 | 1.06 |
| Da Silveira JF | 1.81 | 8.37 |  | Public, Environmental & Occupational Health | 10.88 | 4.07 |
| Levin MJ | 1.81 | 5.78 |  | Medicine, General & Internal | 6.99 | 4.42 |
| Dodd RY | 1.68 | 13.66 |  | Biochemistry & Molecular Biology | 4.66 | -8.13 |
| Reed SG | 1.55 | 7.13 |  | Surgery | 3.37 | 7.64 |

|  |  |  |
| --- | --- | --- |
| Keywords | f(%) | σ |
| TRYPANOSOMA-CRUZI | 27.07 | 1.27 |
| CHAGAS-DISEASE | 25.00 | 2.66 |
| DIAGNOSIS | 15.67 | 23.20 |
| INFECTION | 13.21 | 6.59 |
| UNITED-STATES | 12.05 | 16.91 |
| POLYMERASE-CHAIN-REACTION | 8.03 | 9.33 |
| ANTIBODIES | 7.90 | 10.08 |
| DISEASE | 7.64 | 5.82 |
| TRANSMISSION | 7.64 | 4.76 |
| SERODIAGNOSIS | 7.51 | 22.40 |
| IDENTIFICATION | 7.38 | 1.87 |
| TRYPANOSOMA-CRUZI INFEC- | 6.74 | 0.40 |
| TION |  |  |
| AMPLIFICATION | 6.35 | 15.04 |
| ANTIGENS | 6.09 | 10.28 |
| TRANSFUSION | 5.70 | 25.08 |
| ACQUIRED- | 5.44 | 21.59 |
| IMMUNODEFICIENCY- |  |  |
| SYNDROME |  |  |
| AIDS | 5.44 | 22.84 |
| BLOOD-DONORS | 5.44 | 18.65 |
| HUMAN-IMMUNODEFICIENCY- | 5.44 | 19.13 |
| VIRUS |  |  |
| BLOOD | 5.18 | 11.34 |
| Title Words | f(%) | σ |
| CHAGAS | 27.72 | 5.99 |
| TRYPANOSOMA | 27.20 | -0.28 |
| CRUZI | 26.81 | 0.60 |
| DISEASE | 24.87 | 5.77 |
| BLOOD | 14.77 | 23.68 |
| INFECTION | 10.49 | 1.69 |
| DIAGNOSIS | 9.72 | 18.63 |
| TRYPANOSOMA-CRUZI | 9.33 | -1.94 |
| CHAGAS-DISEASE | 7.51 | 4.98 |
| DETECTION | 7.38 | 13.33 |
| Journal | f(%) | σ |
| TRANSFUSION | 7.51 | 19.60 |
| MEM I OSWALDO CRUZ  AM J TROP MED HYG J CLIN MICROBIOL  REV SOC BRAS MED TRO VOX SANG  EXP PARASITOL PARASITOL RES  T ROY SOC TROP MED H MOL BIOCHEM PARASIT | 5.96  5.05  4.02  3.11  2.59  2.46  1.94  1.94  1.81 | 3.69  3.13  17.96  3.60  13.93  -0.26  0.61  1.52  -1.38 |

Cluster 12 (“VecPAR”). This cluster contains N= 500 publications.

36

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Institution | f(%) | σ |  | Reference | f(%) | σ |
| UNIV FED RIO DE JANEIRO | 23.80 | 19.08 |  | Garcia ES, 1991, PARASITOL TODAY, 7, 240 | 12.80 | 40.62 |
| INST OSWALDO CRUZ | 17.40 | 13.18 |  | Kollien AH, 2000, PARASITOL TODAY, 16, 381 | 11.20 | 27.55 |
| FIOCRUZ MS | 11.80 | 8.29 |  | Chagas C, 1909, Memorias do Instituto Oswaldo Cruz, 1, 0 | 10.00 | 10.49 |
| UNIV FED FLUMINENSE | 9.80 | 20.06 |  | Azambuja P, 2004, EXP PARASITOL, 107, 89 | 9.60 | 39.94 |
| DEPT BIOL | 9.40 | 8.52 |  | Schaub GA, 1989, EXP PARASITOL, 68, 260 | 8.40 | 33.60 |
| INST BIOQUIM MED | 8.60 | 29.75 |  | Lowry OH, 1951, J BIOL CHEM, 193, 265 | 8.20 | 8.90 |
| FUNDACAO OSWALDO CRUZ | 8.00 | 6.59 |  | Garcia ES, 2007, J INSECT PHYSIOL, 53, 11 | 7.80 | 31.12 |
| INST BIOFIS CARLOS CHAGAS | 7.40 | 6.68 |  | Mello CB, 1996, EXP PARASITOL, 82, 112 | 7.80 | 31.94 |
| FILHO |  |  |  | Eichler S, 2002, EXP PARASITOL, 100, 17 | 7.60 | 35.02 |
| RUHR UNIV BOCHUM | 6.80 | 29.91 |  | Mello CB, 1995, J INVERTEBR PATHOL, 65, 261 | 7.60 | 35.81 |
| DEPT BIOQUIM | 6.60 | 7.18 |  | Brener Z, 1973, ANNU REV MICROBIOL, 27, 347 | 7.40 | 7.50 |
| MISSISSAUGA | 6.20 | 35.97 |  | Pereira MEA, 1981, SCIENCE, 211, 597 | 7.20 | 28.88 |
| DEPT BIOQUIM & BIOL MOL | 6.00 | 15.33 |  | Furuya T, 1998, MOL BIOCHEM PARASIT, 92, 339 | 7.00 | 35.90 |
| INST BIOL | 5.60 | 7.84 |  | Berredo-Pinho M, 2001, ARCH BIOCHEM BIOPHYS, 391, | 6.80 | 35.33 |
| CCS | 5.40 | 11.67 |  | 16 |  |  |
| RIO DE JANEIRO | 5.40 | 7.56 |  | Schaub GA, 1988, EXP PARASITOL, 65, 174 | 6.80 | 33.51 |
| DEPT SPECIAL ZOOL | 5.00 | 30.88 |  | Kollien AH, 1998, ACTA TROP, 70, 127 | 6.40 | 27.25 |
| LAB BIOQUIM & FISIOL INSETOS | 5.00 | 28.85 |  | Araujo CAC, 2006, INSECT BIOCHEM MOLEC, 36, 547 | 6.20 | 32.58 |
| UNIV TORONTO | 5.00 | 19.33 |  | Whitten MMA, 2001, EXP PARASITOL, 98, 44 | 6.20 | 31.69 |
| DEPT BIOL GERAL | 4.80 | 22.12 |  | Bradford MM, 1976, ANAL BIOCHEM, 72, 248 | 6.00 | 5.50 |
| INST CIENCIAS BIOMED | 4.60 | 5.18 |  | Garcia ES, 2010, TRENDS PARASITOL, 26, 499 | 6.00 | 26.26 |
| Country | f(%) | σ |  | RefJournal | f(%) | σ |
| Brazil | 57.20 | 9.74 |  | EXP PARASITOL | 54.60 | 11.94 |
| USA | 11.60 | -7.18 |  | J BIOL CHEM | 49.00 | 7.63 |
| Argentina | 10.80 | -2.40 |  | J INSECT PHYSIOL | 46.40 | 59.11 |
| Canada | 9.40 | 11.74 |  | P NATL ACAD SCI USA | 45.20 | 5.38 |
| Germany | 8.80 | 6.81 |  | MEM I OSWALDO CRUZ | 38.60 | 3.52 |
| UK | 7.40 | 0.44 |  | SCIENCE | 38.60 | 6.18 |
| France | 4.40 | -1.23 |  | ACTA TROP | 38.40 | 7.18 |
| Mexico | 3.00 | -0.74 |  | PARASITOL RES | 36.60 | 12.91 |
| Fed Rep Ger | 2.80 | 9.37 |  | INSECT BIOCHEM MOLEC | 36.00 | 55.41 |
| Colombia | 1.80 | -1.09 |  | PARASITOL TODAY | 31.80 | 10.61 |
| Author | f(%) | σ |  | Subject | f(%) | σ |
| Azambuja P | 14.00 | 54.67 |  | Parasitology | 37.40 | 7.47 |
| Garcia ES | 12.80 | 51.30 |  | Biochemistry & Molecular Biology | 19.20 | 2.52 |
| Meyer-Fernandes JR | 10.00 | 41.03 |  | Tropical Medicine | 17.00 | 0.04 |
| Schaub GA | 9.20 | 38.57 |  | Entomology | 16.60 | 22.52 |
| Gonzalez MS | 6.80 | 36.50 |  | Zoology | 7.20 | 7.67 |
| Orchard I | 4.40 | 30.54 |  | Physiology | 6.40 | 13.05 |
| Mello CB | 4.20 | 28.50 |  | Microbiology | 5.40 | -1.13 |
| Lange AB | 3.60 | 27.36 |  | Multidisciplinary Sciences | 5.40 | 2.60 |
| Ratcliffe NA | 3.60 | 28.10 |  | Infectious Diseases | 4.80 | -3.08 |
| Castro DP | 3.40 | 28.09 |  | Pharmacology & Pharmacy | 4.60 | -0.76 |

|  |  |  |
| --- | --- | --- |
| Keywords | f(%) | σ |
| TRYPANOSOMA-CRUZI | 28.80 | 1.91 |
| RHODNIUS-PROLIXUS | 20.00 | 29.58 |
| CHAGAS-DISEASE | 14.60 | -3.56 |
| REDUVIIDAE | 9.40 | 8.99 |
| CRUZI | 9.20 | 4.83 |
| DROSOPHILA-MELANOGASTER | 7.20 | 22.95 |
| VECTOR | 6.80 | 12.70 |
| MIDGUT | 6.20 | 29.08 |
| INFECTION | 6.00 | -0.97 |
| TRIATOMA-INFESTANS | 6.00 | 8.39 |
| AEDES-AEGYPTI | 5.80 | 19.53 |
| IDENTIFICATION | 5.40 | -0.39 |
| HEMIPTERA | 5.20 | 5.49 |
| HEMOLYMPH | 5.00 | 25.95 |
| TRANSMISSION | 5.00 | 0.89 |
| CHAGAS-DISEASE VECTOR | 4.60 | 10.47 |
| DROSOPHILA | 4.20 | 17.85 |
| IN-VITRO | 4.20 | -1.82 |
| EXPRESSION | 4.00 | -1.68 |
| INSECT | 4.00 | 17.63 |
| Title Words | f(%) | σ |
| PROLIXUS | 30.80 | 59.71 |
| RHODNIUS | 30.40 | 50.12 |
| TRYPANOSOMA | 28.80 | 0.58 |
| CRUZI | 21.40 | -2.28 |
| VECTOR | 13.80 | 19.36 |
| TRIATOMA | 13.20 | 12.34 |
| ACTIVITY | 10.60 | 5.23 |
| CHAGAS | 10.20 | -5.12 |
| CHARACTERIZATION | 10.20 | 7.50 |
| DISEASE | 10.20 | -4.08 |
| Journal | f(%) | σ |
| EXP PARASITOL | 8.20 | 7.84 |
| MEM I OSWALDO CRUZ  INSECT BIOCHEM MOLEC PARASITOL RES  J INSECT PHYSIOL PARASITE VECTOR ACTA TROP  PLOS ONE  PLOS NEGLECT TROP D PARASITOLOGY | 4.80  4.60  4.60  4.40  3.80  3.60  3.40  3.00  2.20 | 1.56  22.90  5.14  19.20  8.47  2.91  3.68  1.32  1.81 |

Cluster 13 (“DigeGASTRO”). This cluster contains N= 227 publications.

39

|  |  |  |
| --- | --- | --- |
| Reference | f(%) | σ |
| Koberle F, 1968, Advances in Parasitology, 6, 63  Chagas C, 1909, Memorias do Instituto Oswaldo Cruz, 1, 0  Acosta-Rodriguez EV, 2004, J IMMUNOL, 172, 493  Oliveira RB, 1998, AM J GASTROENTEROL, 93, 884  Chagas C, 1916, MEM I O CRUZ, 8, 37  Oliveira RB, 1995, AM J GASTROENTEROL, 90, 1119  Chagas C, 1916, Memorias do Instituto Oswaldo Cruz, 8, 5  Chagas Carlos, 1911, Memorias do Instituto Oswaldo Cruz, 3,  0  Dantas RO, 2001, DIGEST DIS SCI, 46, 1200  Chagas C, 1922, MEM I O CRUZ, 14, 5  Dantas RO, 1990, DIGEST DIS SCI, 35, 508  Herbella FAM, 2004, DIGEST DIS SCI, 49, 353  Laranja FS, 1956, CIRCULATION, 14, 1035  Rezende JM, 1960, REV BRAS GASTROENTER, 12, 247  Yang RY, 1996, P NATL ACAD SCI USA, 93, 6737  Dantas RO, 1999, J CLIN GASTROENTEROL, 28, 245  Meneghelli UG, 1985, BRAZ J MED BIOL RES, 18, 255  Oliveira RB, 1983, DIGEST DIS SCI, 28, 294  Silva-Monteiro E, 2007, AM J PATHOL, 170, 546  Vianna Gaspar, 1911, Memorias do Instituto Oswaldo Cruz,  3, 0 | 18.50  11.89  10.13  10.13  9.69  9.69  8.81  8.81  7.93  7.05  7.05  6.61  6.61  6.61  6.61  6.17  6.17  6.17  6.17  6.17 | 20.37  8.87  35.30  39.09  25.82  44.26  28.09  19.62  40.95  18.40  37.43  34.05  6.34  21.39  36.17  30.88  25.75  33.73  29.33  11.26 |
| RefJournal | f(%) | σ |
| GASTROENTEROLOGY | 47.58 | 53.69 |
| DIGEST DIS SCI  AM J GASTROENTEROL GUT  J CLIN GASTROENTEROL Memorias do Instituto Oswaldo Cruz REV GOIANA MED  BRAZ J MED BIOL RES NATURE  NEW ENGL J MED | 36.56  29.07  28.63  23.35  21.59  20.26  19.38  18.94  18.94 | 54.49  44.03  37.72  54.88  6.84  24.76  8.22  -3.35  3.43 |
| Subject | f(%) | σ |
| Gastroenterology & Hepatology  Tropical Medicine  Cardiac & Cardiovascular Systems  Immunology  Parasitology  Medicine, General & Internal Medicine, Research & Experimental Surgery  Clinical Neurology  Cell Biology | 32.60  15.42  7.49  7.49  7.05  6.61  5.29  5.29  4.85  4.41 | 53.84  -0.61  2.00  -1.53  -5.79  2.10  2.01  7.29  8.92  -0.09 |

|  |  |  |
| --- | --- | --- |
| Institution | f(%) | σ |
| UNIV SAO PAULO  DEPT CLIN MED SCH MED  FAC MED RIBEIRAO PRETO FAC MED  DEPT MED  UNIV BUENOS AIRES DEPT SURG  DEPT GASTROENTEROL BUENOS AIRES  UNIV FED SAO PAULO ESCOLA PAULISTA MED CONSEJO NACL INVEST CIENT & TECN  UNIV FED MINAS GERAIS  FAC CIENCIAS EXACTAS & NAT HOSP CLIN  UBERABA  UNIV FED TRIANGULO MINEIRO BELO HORIZONTE  DEPT QUIM BIOL | 21.15  15.86  15.42  12.78  12.33  8.37  8.37  7.93  7.49  6.61  6.17  4.85  4.41  4.41  3.96  3.96  3.96  3.96  3.52  3.52 | 7.14  24.95  4.98  17.85  1.57  4.16  2.85  17.55  28.09  1.80  3.88  3.97  2.66  -0.22  2.17  3.29  6.81  6.51  -0.12  12.02 |
| Country | f(%) | σ |
| Brazil | 57.71 | 6.72 |
| USA | 19.38 | -2.15 |
| Argentina | 10.57 | -1.71 |
| UK | 3.96 | -1.75 |
| Italy | 2.64 | 1.07 |
| France | 2.20 | -2.26 |
| Spain | 1.76 | -2.66 |
| Australia | 1.32 | 0.54 |
| Germany | 1.32 | -1.69 |
| Mexico | 1.32 | -1.85 |
| Author | f(%) | σ |
| Dantas RO | 12.78 | 45.59 |
| Rabinovich GA | 7.93 | 40.11 |
| Troncon LEA | 6.17 | 32.74 |
| Herbella FAM | 5.29 | 35.42 |
| Meneghelli UG | 5.29 | 31.61 |
| Oliveira RB | 4.41 | 24.64 |
| Cecconello I | 3.52 | 24.58 |
| Patti MG | 3.52 | 27.23 |
| Anselmi A | 3.08 | 21.46 |
| Crema E | 3.08 | 16.62 |

|  |  |  |
| --- | --- | --- |
| Keywords | f(%) | σ |
| ACHALASIA | 12.33 | 39.14 |
| TRYPANOSOMA-CRUZI INFEC- | 11.89 | 3.40 |
| TION |  |  |
| CHAGAS-DISEASE | 10.57 | -3.88 |
| MOTILITY | 7.93 | 26.37 |
| DENDRITIC CELLS | 6.17 | 7.64 |
| DISEASE | 5.73 | 1.63 |
| IDIOPATHIC ACHALASIA | 4.41 | 27.72 |
| LOWER ESOPHAGEAL SPHINC-  TER  REGULATED EXPRESSION EXPRESSION EXTRACELLULAR-MATRIX | 3.52  3.52  3.08  3.08 | 22.10  19.29  -1.73  8.10 |
| GALACTOSIDE-BINDING PRO- | 3.08 | 20.38 |
| TEIN |  |  |
| GENE-EXPRESSION | 3.08 | 1.51 |
| MEGAESOPHAGUS | 3.08 | 13.40 |
| RECOMBINANT GALECTIN-1 | 3.08 | 23.19 |
| ESOPHAGUS | 2.64 | 17.42 |
| MACROPHAGES | 2.64 | 1.02 |
| MEGACOLON | 2.64 | 9.67 |
| PRESSURE | 2.64 | 13.82 |
| T-CELL DEATH | 2.64 | 11.73 |
| Title Words | f(%) | σ |
| CHAGAS | 44.93 | 9.83 |
| DISEASE | 39.21 | 8.87 |
| PATIENTS | 22.03 | 12.44 |
| ACHALASIA | 15.86 | 50.38 |
| ESOPHAGEAL | 14.10 | 39.92 |
| MEGAESOPHAGUS | 10.13 | 32.58 |
| CHRONIC | 9.25 | 3.39 |
| CHAGAS-DISEASE | 8.37 | 3.36 |
| CHAGASIC | 7.93 | 6.99 |
| GALECTIN-3 | 6.17 | 25.86 |
| Journal | f(%) | σ |
| DIS ESOPHAGUS | 8.81 | 42.59 |
| REV SOC BRAS MED TRO  DIGEST DIS SCI  BRAZ J MED BIOL RES MEM I OSWALDO CRUZ NEUROGASTROENT MOTIL AM J GASTROENTEROL  INT J CARDIOL AM HEART J DIGESTION | 7.49  5.29  3.96  2.64  2.64  2.20  2.20  1.76  1.76 | 7.34  22.09  5.58  -0.71  19.28  16.91  2.64  5.29  20.45 |

Cluster 14 (“PlantPHA”). This cluster contains N= 184 publications.

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|  |  |  |
| --- | --- | --- |
| Institution | f(%) | σ |
| SWISS TROP INST  FAC PHARM UNIV BASEL UNIV ANTWERP  DEPT PHARMACOGNOSY  SWISS TROP & PUBL HLTH INST DEPT CHEM  DEPT MED PARASITOL & INFECT BIOL | 26.63  17.93  17.39  14.13  13.59  13.04  12.50  11.41 | 53.21  24.10  34.78  38.07  48.43  26.28  8.06  39.98 |
| FAC PHARMACEUT BIOMED &  VET SCI  INST ORGAN CHEM  DEPT PHARMACEUT SCI LMPH  UNIV FED SANTA MARIA SCH PHARM  COLL PHARM | 11.41  9.78  9.24  8.70  8.15  7.61  7.07 | 42.63  32.29  21.17  37.08  25.46  14.10  19.84 |
| DEPT MICROBIOL & PARASITOL  SMITHSONIAN TROP RES INST UNIV LONDON  UNIV PANAMA UNIV WURZBURG | 7.07  7.07  7.07  6.52  6.52 | 9.14  26.67  21.20  18.08  24.15 |
| Country | f(%) | σ |
| Switzerland | 47.28 | 40.12 |
| Germany | 19.57 | 12.26 |
| Belgium | 15.76 | 15.08 |
| Brazil | 14.67 | -6.09 |
| UK | 14.67 | 4.16 |
| USA | 14.67 | -3.40 |
| Panama | 9.78 | 19.81 |
| Spain | 6.52 | 0.33 |
| Turkey | 6.52 | 20.25 |
| France | 5.43 | -0.14 |
| Author | f(%) | σ |
| Brun R | 32.07 | 56.71 |
| Kaiser M | 28.26 | 53.82 |
| Maes L | 13.04 | 38.73 |
| Tasdemir D | 10.33 | 44.05 |
| Cos P | 9.78 | 40.85 |
| Monteiro SG | 8.15 | 33.97 |
| Da Silva AS | 7.61 | 33.82 |
| Schmidt TJ | 6.52 | 29.63 |
| Bringmann G | 5.98 | 36.11 |
| Cubilla-Rios L | 5.43 | 31.49 |

|  |  |  |
| --- | --- | --- |
| Reference | f(%) | σ |
| Raz B, 1997, ACTA TROP, 68, 139 | 38.59 | 67.66 |
| Buckner FS, 1996, ANTIMICROB AGENTS CH, 40, 2592  Baltz T, 1985, EMBO J, 4, 1273  Matile H, 1990, IMMUNOLOGICAL METHOD  Desjardins RE, 1979, ANTIMICROB AGENTS CH, 16, 710  Cunningham I, 1977, J PROTOZOOL, 24, 325  Cos P, 2006, J ETHNOPHARMACOL, 106, 290  Hirumi H, 1989, J PARASITOL, 75, 985  Trager W, 1976, SCIENCE, 193, 673  Makler MT, 1993, AM J TROP MED HYG, 48, 739  Corbett Y, 2004, AM J TROP MED HYG, 70, 119  Huber W, 1993, ACTA TROP, 55, 257  Ridley RG, 1996, ANTIMICROB AGENTS CH, 40, 1846  Colpo Cristina Braccini, 2005, Ciencia Rural, 35, 717  Freiburghaus F, 1996, J ETHNOPHARMACOL, 55, 1  Mikus Judith, 2000, Parasitology International, 48, 265  Bringmann G, 1996, PHYTOCHEMISTRY, 43, 1393  Page B, 1993, INT J ONCOL, 3, 473  Schmidt TJ, 2009, MOLECULES, 14, 2062  Schmidt TJ, 2012, CURR MED CHEM, 19, 2128 | 27.72  25.00  14.67  13.59  13.04  12.50  10.87  9.78  8.70  8.15  7.61  7.61  5.98  5.98  5.98  5.43  5.43  5.43  5.43 | 33.81  54.62  52.91  34.28  34.73  42.86  20.90  21.59  34.21  36.88  30.51  37.55  30.41  30.41  18.03  33.96  32.35  22.15  16.55 |
| RefJournal | f(%) | σ |
| ANTIMICROB AGENTS CH  J NAT PROD PLANTA MED ACTA TROP  PHYTOCHEMISTRY  J ETHNOPHARMACOL PHYTOTHER RES EMBO J  AM J TROP MED HYG SCIENCE | 61.41  55.43  54.35  53.80  53.26  45.11  27.17  26.09  25.54  25.00 | 18.62  41.33  41.37  9.21  38.94  36.52  25.22  6.77  -1.88  -0.43 |
| Subject | f(%) | σ |
| Chemistry, Medicinal | 50.00 | 25.98 |
| Pharmacology & Pharmacy  Plant Sciences  Biochemistry & Molecular Biology  Chemistry, Organic  Integrative & Complementary Medicine Chemistry, Multidisciplinary Parasitology  Microbiology  Medical Laboratory Technology | 43.48  35.33  19.02  11.96  11.96  8.15  7.61  3.80  3.26 | 22.94  43.08  1.46  8.73  22.02  6.51  -5.03  -1.56  6.43 |

|  |  |  |
| --- | --- | --- |
| Keywords | f(%) | σ |
| IN-VITRO | 25.00 | 10.63 |
| RHODESIENSE | 16.85 | 45.46 |
| NATURAL-PRODUCTS | 16.30 | 25.30 |
| TRYPANOSOMA-BRUCEI | 16.30 | 18.41 |
| GAMBIENSE | 14.67 | 43.80 |
| DRUGS | 10.87 | 8.64 |
| PLASMODIUM-FALCIPARUM | 10.87 | 6.74 |
| ASSAY | 9.78 | 12.01 |
| MEDICINAL-PLANTS | 9.24 | 21.08 |
| EXTRACTS | 8.70 | 18.33 |
| MALARIA | 8.70 | 10.27 |
| TRYPANOSOMA-CRUZI | 8.15 | -5.30 |
| CRUZI | 7.61 | 1.90 |
| DRUG-SENSITIVITY | 7.07 | 35.19 |
| RESISTANCE | 7.07 | 4.02 |
| ANTIPLASMODIAL ACTIVITY | 6.52 | 22.70 |
| BRUCEI | 6.52 | 1.89 |
| DERIVATIVES | 6.52 | 3.19 |
| PLANTS | 6.52 | 11.77 |
| ANTIMALARIAL ACTIVITY | 5.98 | 13.00 |
| Title Words | f(%) | σ |
| ACTIVITY | 38.04 | 19.73 |
| ANTIPROTOZOAL | 34.24 | 54.11 |
| VITRO | 21.20 | 17.25 |
| ACTIVITIES | 12.50 | 14.14 |
| TRYPANOSOMA | 12.50 | -4.59 |
| PLANTS | 11.96 | 27.83 |
| AGAINST | 11.41 | 4.47 |
| EVALUATION | 9.78 | 6.34 |
| EXTRACTS | 9.78 | 21.09 |
| MEDICINAL | 8.70 | 24.11 |
| Journal | f(%) | σ |
| J ETHNOPHARMACOL | 8.15 | 25.99 |
| MOLECULES | 7.61 | 18.48 |
| J NAT PROD | 7.07 | 21.16 |
| PHYTOCHEMISTRY | 5.98 | 23.38 |
| PHYTOTHER RES | 5.98 | 20.81 |
| PLANTA MED | 5.43 | 14.01 |
| EXP PARASITOL | 4.89 | 1.94 |
| BIOORGAN MED CHEM  PHARM BIOL J MED CHEM | 3.80  3.26  2.72 | 5.30  15.00  3.60 |