# **CIÊNCIAS BIOMÉDICAS**

Walter Colli

## CIÊNCIAS BIOMÉDICAS

Bioquímica e Biologia Molecular

Fisiologia

Farmacologia e Farmácia

Biofísica

Imunologia

Parasitologia

Micologia

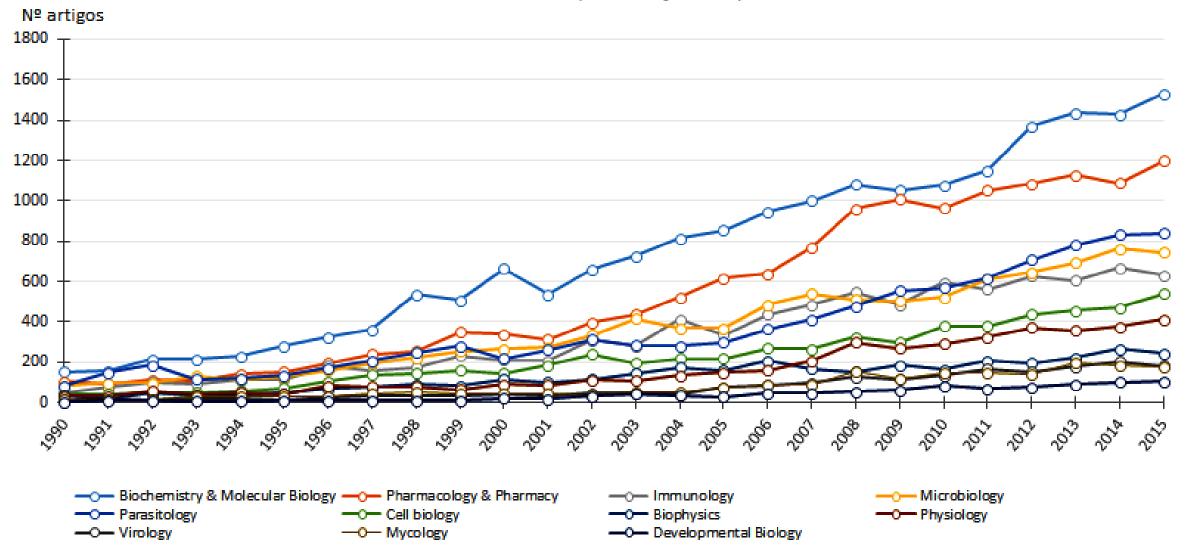
Microbiologia

Virologia

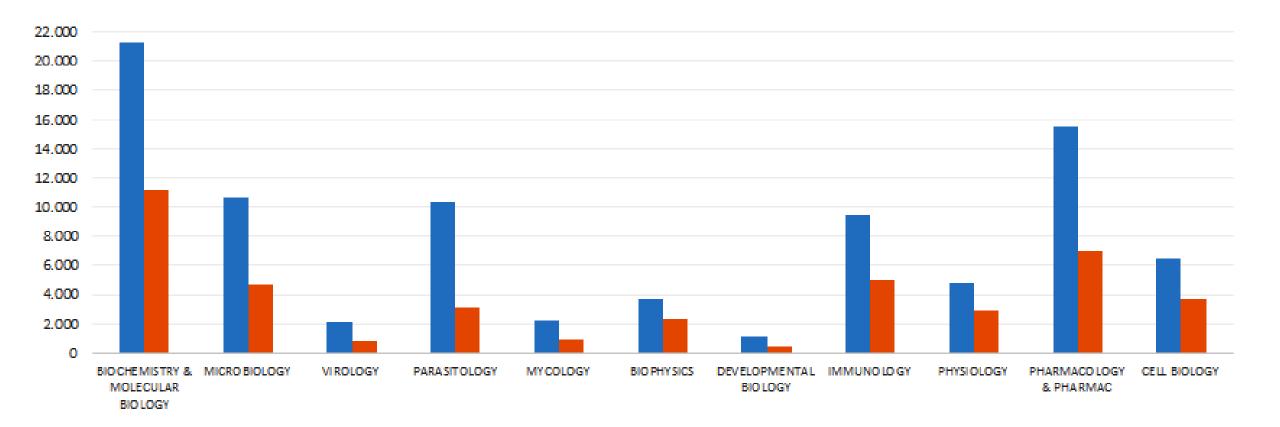
Biologia do Desenvolvimento

Biologia Celular

## Número de artigos cadastrado no WoS com pelo menos um autor do Brasil, áreas do conhecimento selecionadas (classificação WoS)



Número de artigos cadastrados no WoS 1980-2016, Brasil São Paulo



## Tabela 4

Dissertações de Mestrado

	2013		2014		2015		2016	
	Total	SP	Total	SP	Total	SP	Total	SP
Bioquímica	313	60	250	56	275	48	179	36
Biofísica	30	<u>0</u>	28	Ũ	43	Ũ	21	Ũ
Farmacologia	211	74	158	52	149	31	79	21
Fisiologia	296	98	276	92	271	76	117	35
Imunologia	<mark>98</mark>	25	86	25	82	26	44	14
Microbiologia	198	37	168	38	201	42	102	17
Parasitologia	90	23	116	30	139	25	68	9
Total	1236	317	1082	293	1160	248	610	132
		25,6%		27%		21,4%		21,6%

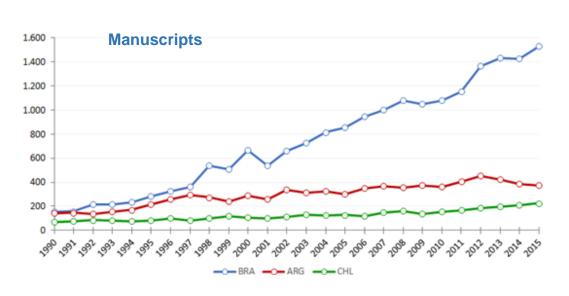
## Tabela 5

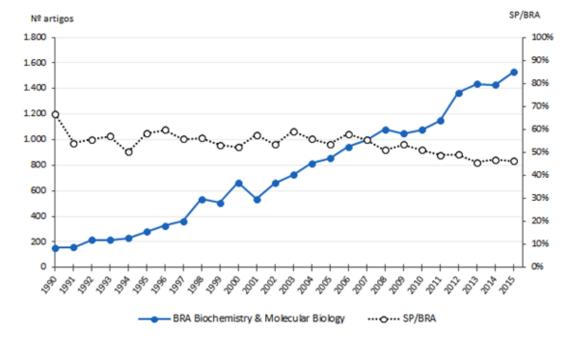
Teses de Doutoramento
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	2013		2014		201	2015		2016	
	Total	SP	Total	SP	Total	SP	Total	SP	
Bioquímica	212	67	254	79	235	66	137	12	
Biofísica	25	<u>0</u>	38	<u>0</u>	24	Ũ	14	<u>0</u>	
Farmacologia	84	40	91	43	97	42	45	14	
Fisiologia	147	44	169	64	208	74	78	31	
Imunologia	56	27	65	38	52	26	32	17	
Microbiologia	120	33	103	32	91	24	52	12	
Parasitologia	46	17	51	14	74	17	18	7	
Total	690	228 33%	771	270 35%	781	249 31,8%	376	93 24,7%	
http://bancodeteses.capes.gov.br/banco-teses/#/									

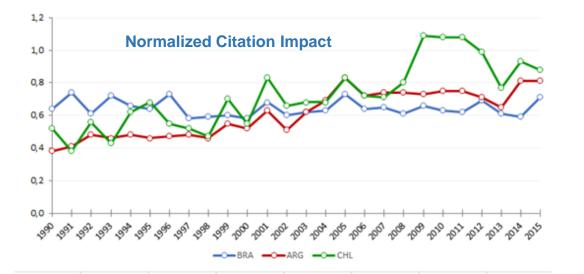
Área de Pesquisa WoS	Mundo 2015	Brasil 2015	% Brasil
Total	1.527.066	41.631	2,7%
Biochemistry &			
Molecular Biology	56.339	1.529	2,7%
Microbiology	20.946	745	3,6%
Virology	6.861	182	2,7%
Parasitology	6.155	838	13,6%
Mycology	2.082	173	8,3%
Biophysics	12.515	243	1,9%
Developmental Biology	3.664	104	2,8%
Immunology	21.405	630	2,9%
Physiology	9.821	414	4,2%
Pharmacology &			
Pharmacy	34.381	1.196	3,5%
Cell biology	29.150	541	1,9%

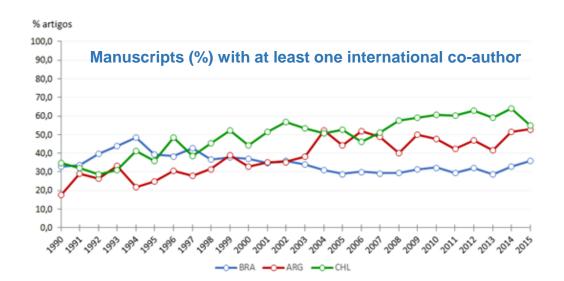
## **Biochemistry and Molecular Biology, 1990 - 2015**



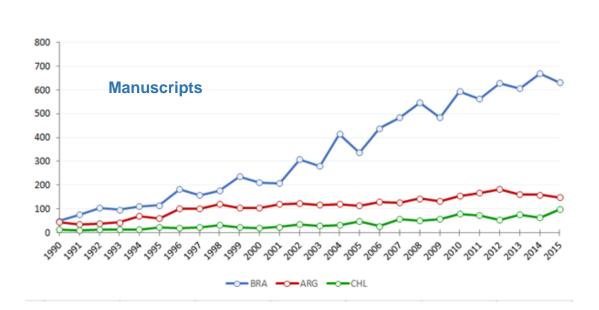


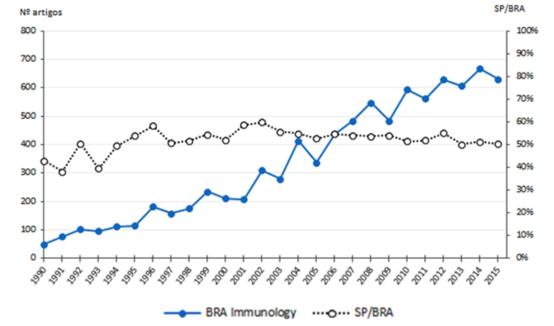
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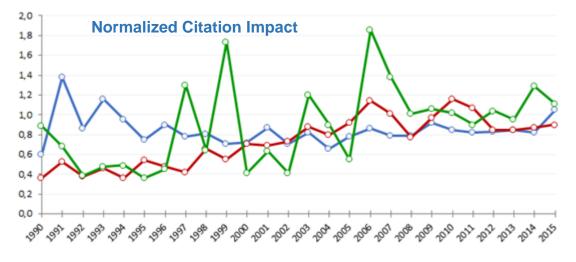


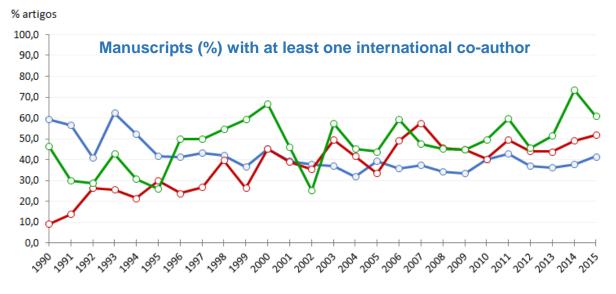


## Immunology, 1990 - 2015

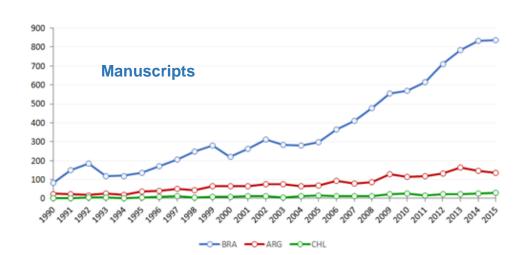


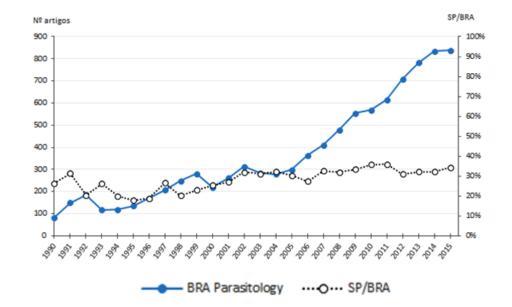


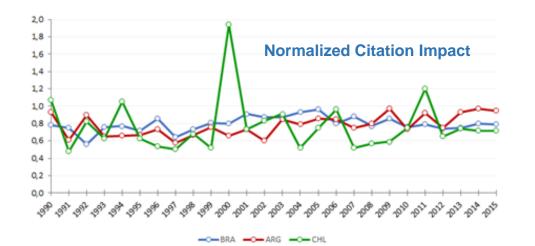




## **Parasitology, 1990 - 2015**







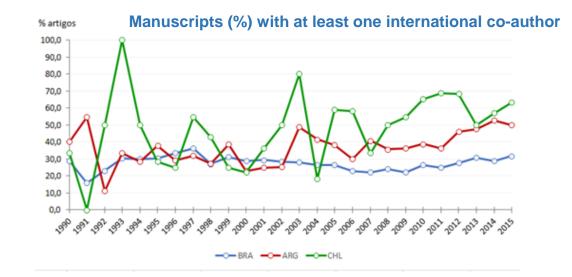


Tabela 3

## Artigos publicados em 2015 por Brasil, Argentina e Chile e seu impacto

	Brasil		Argen	tina	Chile	
	Artigos	Impacto*	Artigos	Impacto*	Artigos	Impacto
Bioq. Biol. Molecular	1529	0,71	371	0,81	224	0,88
Fisiologia	<mark>414</mark>	0,68	56	0,78	51	<mark>1,1</mark> 0
Farmacol/Farmácia	1196	0,76	180	0,89	86	0,86
Biofísica	243	0,63	92	0,60	66	0,66
Imunologia	630	1,05	147	0,90	97	1,11
Parasitologia	836	0,79	136	0,95	30	0,72
Micologia	173	1,15	41	1,16	12	1,36
Microbiologia	745	0,82	232	0,73	102	<mark>1,19</mark>
Virologia	182	0,94	57	1,09	<mark>1</mark> 4	1, <mark>65</mark>
Biol Desenvolv	104	0,68	39	0,78	18	0,78
<b>Biol</b> Celular	541	0,69	161	0,69	98	0,98

\*Quociente entre a média de citações do conjunto dos artigos de cada país em cada área e a média de citações de todos os artigos da área.

#### Bioquímica e Biologia Molecular

#### A-Embrapa/Cenargen

Aljanabi, S.M.; Martinez, I (1997) Universal and rapid salt-extraction of high quality genomic DNA for PCR-based techniques. Nucleic Acid Res. 25, 4692-4693 (997 citações).

#### B-Aníbal Eugênio Vercesi

Kowaltowski, A.J.; de Souza-Pinto, N. C.; Castilho, R.F.; Vercesi, A. E. (2009) Mitochondria and reactive oxygen species. Free Rad. Biol. Med. 47, 333-343 (373 citações)

C-Walter Ribeiro Terra e Clélia Ferreira

Terra, W.R.; Ferreira, C. (1994) Insect digestive enzymes: properties, compartmentalization and function. Comp. <u>Biochem</u>. Physiol., Part B 109, 1-62 (602 citações).

D-Sérgio Verjovski-Almeida

Verjovski-Almeida, S.; De Marco, R.; Martins, E.A.; Guimarães, P.E.; Ojopi, E.P.; Paquola, A.C.; Piazza, J.P.; Nishiyama, M.Y.; Kitajima, J.P.; Adamson, R.E.; Ashton, P.D.; Bonaldo, M.F.; Coulson, P.S.; Gargioni, C. (2003) Transcriptome analysis of the accelomate human parasite *Schistosoma mansoni*. Nature Genetics 35, 148-157 (339 citações).

E-Sérgio Teixeira Ferreira

De Felice, F. G.; Lambert, M.P.; Viola, K.; Velasco, P.T.; Fernandez, S.J.; Ferreira, S.T.; Klein, W. L. (2007). Aβ oligomers induce neuronal oxidative stress through an NMDA receptor-dependent mechanism that is blocked by the Alzheimer drug memantine. J. Biol. Chem. 282, 11590-11601 (394 citações).

#### Fisiologia

#### (A) Esper Abrão Cavalheiro

Mello, L.E.A.; Cavalheiro, E. A.; Tan, A.M.; Kupfer, W.R.; Pretorius, J.K.; Babb, T.L.; Finch, D.M. (1993) Circuit Mechanisms of Seizures in the Pilocarpine Model of Chronic Epilepsy: Cell Loss and Mossy Fiber Sprouting. Epilepsia 34, 985-993 (483 citações).

#### (B) Dora Selma Fix Ventura

Peitsch, D.; Fietz, A.; Hertel, H.; Souza, J. M.; Ventura, D.F.; Menzel, R. (1992). The spectral input systems of hymenopteran insects and their receptor-based colour vision models. J. Comp. Physiol. A 170, 23-40, 1992 (344 citações).

#### (C) Ana Maria de Lauro Castrucci e Maria Tereza Lamy-Freund

Shida, C.S.; Castrucci, A.M.L.; Lamyfreund, M.T. (1994) High melatonin solubility in aqueous medium. J. Pineal Res. 16, 198-201 (204 citações)

#### (D) Ivan Izquierdo

Izquierdo, I.; Medina, J.H. (1997) Memory formation: The sequence of biochemical events in the hippocampus and its connection to activity in other brain structures. Neurobiology of Learning and Memory 68, 285-316 (DOI: 10.1006/nlme.1997.3799) (581 citações)

Bernabeu, R.; Bevilaqua, L.; Ardenghi, P.; Bromberg, E.; Schmitz, P.; Bianchin, M.; Izquierdo, I.; Medina, J.H. (1997) Involvement of hippocampal cAMP/cAMP-dependent protein kinase signaling pathways in a late memory consolidation phase of aversively motivated learning in rats, Proc. Natl. Acad. Sci. USA 94, 7041-7046. (355 citações)

#### Farmacologia e Farmácia

#### (A) João Batista Calixto

Calixto, J.B. (2000) Efficacy, safety, quality control, marketing and regulatory guidelines for herbal medicines (Phytotherapics).. Braz. J. Med. Biol.Res. 33, 179-189 (244 citações).

(B) Sérgio Henrique Ferreira e Fernando de Queiroz Cunha

Ferreira, S.H., Lorenzetti, B.B., Bristow, A.F., Poole, S. (2002) Interleukin-1β as a potent <u>hyperalgesic</u> agent antagonized by a tripeptide analogue. <u>Nature</u> 334, 698-700 (463 citações)

Cunha, F.Q.; Poole, S.; Lorenzetti, B.B.; Ferreira, S.H. (1992) The pivotal role of tumor necrosis fator alpha in the development of inflammatory hyperalgesia. British J. Pharmacol. 107, 660-664 (337 citações)

#### **Biofísica**

#### (A) Marcel Tabak

Gelamo, E.L., Silva, C.H.T.P., Imasato, H., Tabak, M. (2002) Interaction of bovine (BSA) and human (HSA) serum albumins with ionic surfactants: spectroscopy and modeling. <u>Biochim. Biophys. Acta</u> – Protein Structure and Molecular Enzymology 1594, 84-99 (374 citações).

(B) Marcelo Hermes-Lima

1-Lopes, G.K.B., Schulman, H.M., Hermes-Lima, M. (1999) Polyphenol tannic acid inhibits hydroxyl radical formation from Fenton reaction by complexing ferrous ions. <u>Biochim. Biophys. Acta</u> – General Subjects 1472, 142-152 (**253 citações**).

#### Imunologia

#### A - Ricardo Tostes Gazzinelli

1-Seder, R. A.; <u>Gazzinelli</u>, R.T.; Sher, A.; Paul, W. E. (1993) IL-12 acts directly on CD4+T cells to enhance priming for IFN $\gamma$  production and diminishes IL-4 inhibition of such priming. Proc. Natl. Acad. Sci. USA 90, 10188-10192 (**915** citações).

#### B-João Santana da Silva

Cunha, T. M.; Verri Jr, W.A.; Silva, J. S.; Poole, S.; Cunha, F. Q.; Ferreira, S. H. (2005) A cascade of cytokines mediates mechanical inflammatory <u>hypernociception</u> in mice. Proc. <u>Natl.</u> Acad. <u>Sci.</u> USA 102, 1755-1760 (283 citações).

#### C - Manoel Barral Netto e Aldina Barral

1-Barral-Netto, M.; Barral, A.; Ellingsworth, L. R.; Twardzik, D. R.; Reed, S. (1992) Transforming Growth Factor-Beta in *Leishmania* Infection: An Important Parasite Escape Mechanism. Science 257, 545-548 (364 citações).

2-Badaró, R.; Falcoff, E.; Badaró, F.; Carvalho, E. M.; Sampaio, D.; Barral, A.; Carvalho, J. S.; Barral-Netto, M.; Brandley, M.; Silva, L.; Bina, J. C.; Johnson, W. D.; Teixeira, R.; Falcoff, R.; Rocha, H.; Ho, J. (1990). Treatment of visceral leishmaniasis with pentavalent antimony and interferon gamma.. New Engl. J. Med. 322, 16-21 (250 citações),

#### D - Mauro Martins Teixeira

Maslowski, K. M.; Vieira, A. T.; Ng, A.; Kranich, J.; Sierro, F.; Di Y.; Schilter, H.C.; Rolph, M.S.; Mackay, F.; Artis, D.; Xavier, R. J.; Teixeira, M. M.; Mackay, C. R. (2009) Regulation of inflammatory responses by gut microbiota and chemoattractant receptor GPR43. Nature 461, 1282-1286 (655 citações).

#### E - Dario Simões Zamboni

Zamboni, D.S.; Kobayashi, K.; Kohlsdorf, T.; Ogura, Y.; Long, M.; Vance, R.; Kuida, K.; Mariathasan, S.; Dixit, V. M.; Flavell, R.A.; Dietrich, W.F; Roy, C. R. (2006) The Birc1e cytosolic pattern-recognition receptor contributes to the detection and control of *Legionella pneumophila* infection. Nature Immunol. 7, 318-325, 2006 (309 citações).

#### Micologia, Microbiologia

#### Arnaldo Lopes Colombo

Mora-Duarte, J.; Betts, R.; Rotstein, C.; Colombo, A.L.; Thompson-Moya, L.; Smietana, J.; Lupinacci, R.; Sable, C.; Kartsonis, N.; Perfect, J. (2002) Comparison of caspofungin and amphotericin B for invasive candidiasis, New Engl. J. Med. 347, 2020-2029 (827 citações).

#### José Nelson Couceiro

Toshihiro, T., Couceiro J.N.S.S., Kelm, S., Baum, L.G., Krauss, S., Castrucci, M.R., Donatelli, I., Kida, H., Paulson, J.C, Webster, R.G., Kawaoka, Y (1998) Molecular Basis for the Generation in Pigs of Influenza A Viruses with Pandemic Potential, J. Virol. 72, 7367–7373 (579 citações).

#### Biologia do Desenvolvimento

#### Irina Kerkis

Kerkis, I.; Kerkis, A.; Dozortsev, D.; Stukart-Parsons, G.C.; Massironi, S.M.G.; Pereira, L.V.; Caplan, A.I.; Cerruti, H.F. (2006) Isolation and characterization of a population of immature dental pulp stem cells expressing OCT-4 and other embryonic stem cell markers. Cell Tissues Organs 184, 105-116 (180 citações).

#### **Biologia Celular**

#### Nance Beyer Nardi

Meirelles, L.D.S.; Chagastelles, P.C.; Nardi, N.B. (2006) Mesenchymal stem cells reside in virtually all post-natal organs and tissues. J. Cell Sci. 119, 2204-2213 (551 citações).

### Parasitologia

Destacam-se dois trabalhos do grupo de Bianca Zingales quais sejam:

1-Souto, RP; Fernandes, O; Macedo, AM; Campbell, DA; Zingales, B. (1996) DNA markers define two major phylogenetic lineages of *Trypanosoma cruzi*. Mol. Biochem. Parasitol. 83, 141-152 (380 citações).

2-Zingales, B; Andrade, SG; Briones, MRS; Campbell, DA; Chiari, E; Fernandes, O; Guhl, F; Lages-Silva, E; Macedo, AM; Machado, CR; Miles, MA; Romanha, AJ; Sturm, NR; Tibayrenc, M ; Schijman, AG (2009) A new consensus for *Trypanosoma cruzi* intraspecific nomenclature: second revision meeting recommends Tcl to TcVI. Memórias do Instituto Oswaldo Cruz 104, 1051-1054 (392 citações).

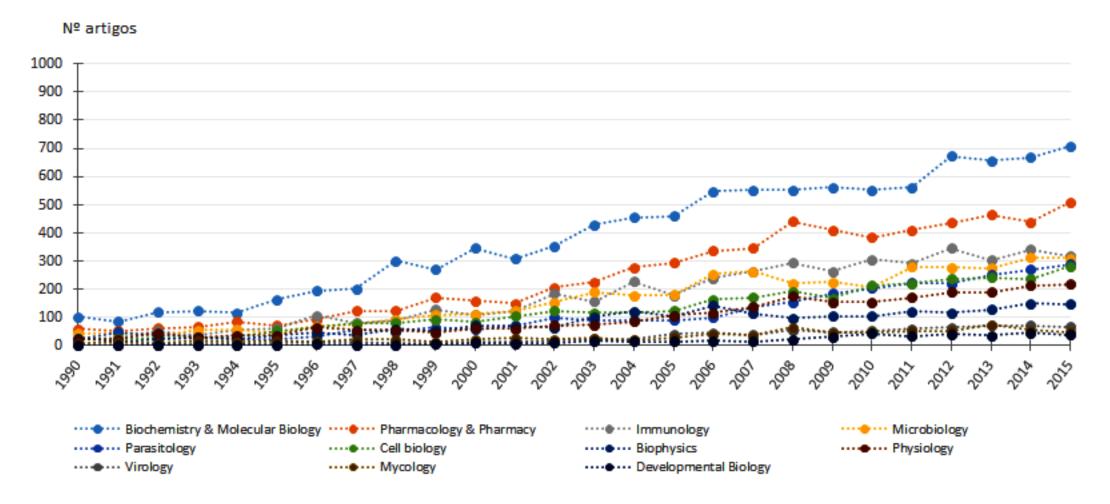
## CONCLUSÕES

**Ciências Biomédicas** 

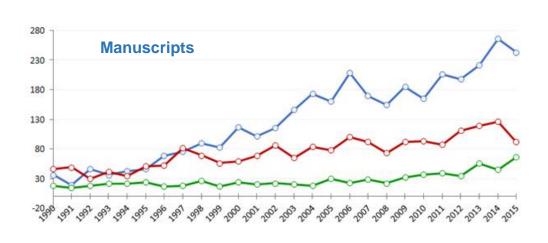
- (A) A PRODUÇÃO CIENTÍFICA
  BRASILEIRA, MEDIDA A PARTIR DE
  1990, CRESCEU CONSTANTEMENTE
  DE FORMA MONÓTONA.
- (B) ESSA PRODUÇÃO REPRESENTA, EM MÉDIA, 3% DA PRODUÇÃO MUNDIAL.
- (C) OS TRABALHOS BRASILEIROS SÃO, EM MÉDIA, MENOS CITADOS QUE OS EQUIVALENTES DA ARGENTINA E DO CHILE.
- (D) OS TRABALHOS ARGENTINOS E CHILENOS TÊM MAIOR PARTICIPAÇÃO RELATIVA DE AUTORES ESTRANGEIROS.

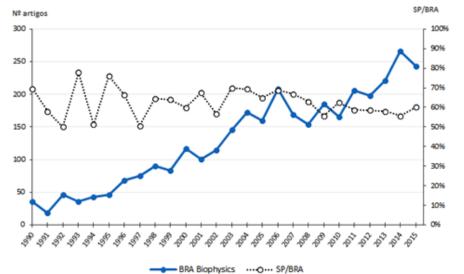


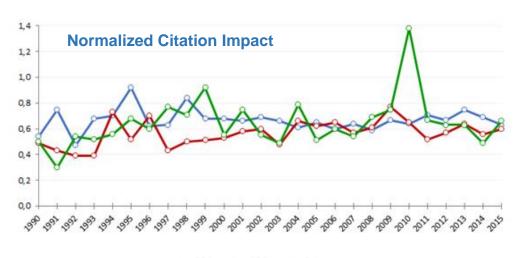
### Número de artigos cadastrado no WoS com pelo menos um autor do Estado de São Paulo, áreas do conhecimento selecionadas (classificação WoS)



## **Biophysics, 1990 - 2015**



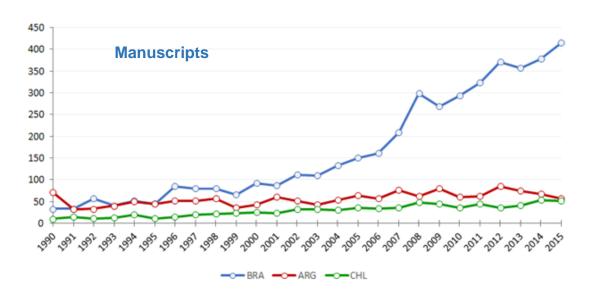


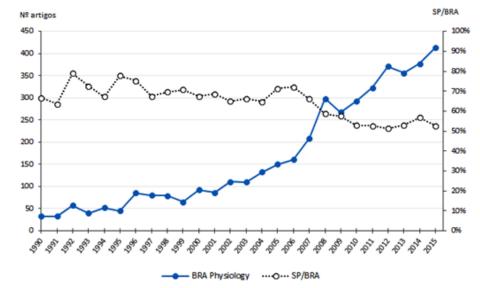


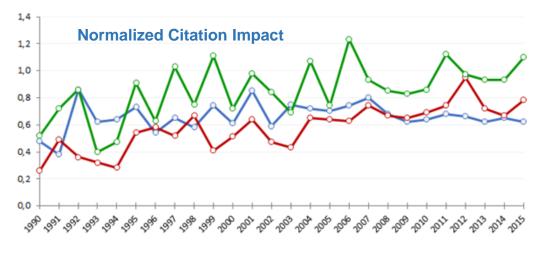
% artigos 100,0 Manuscripts (%) with at least one international co-author 90,0 80,0 70,0 60,0 50,0 40,0 30,0 20,0 10,0 0,0 - 20° 2014 2004 2005 200 2001 2009 2010 2012 2012 2013 2015

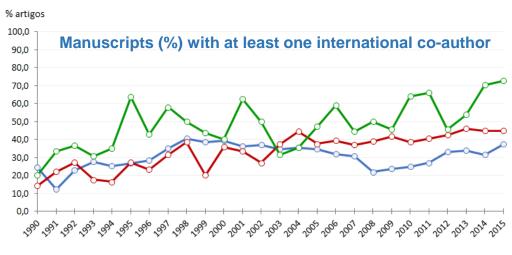
-O-BRA -O-ARG -O-CHL

## Physiology, 1990 - 2015



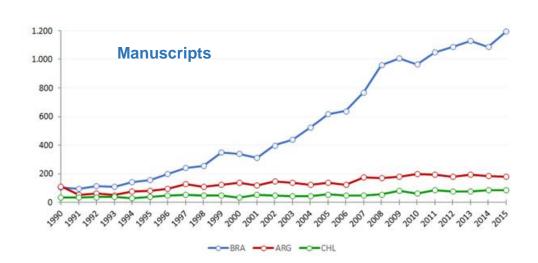


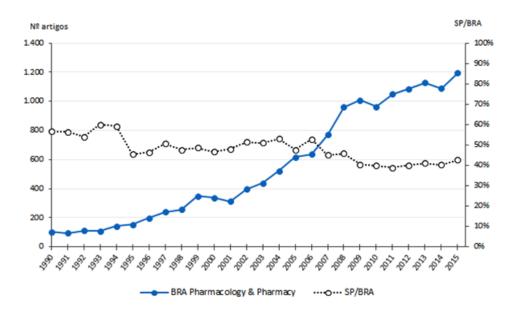


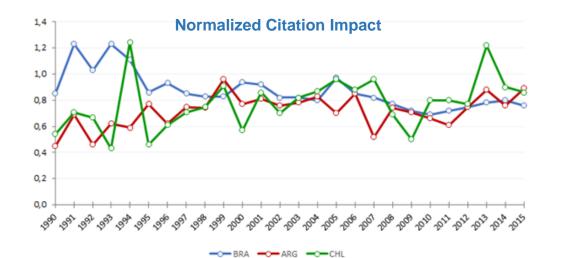


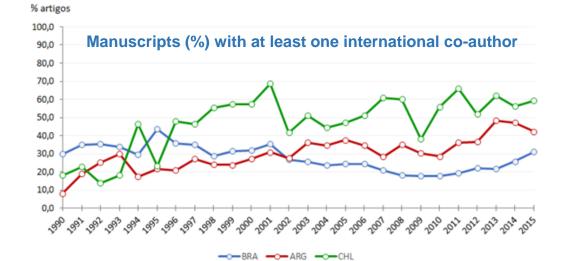
 

## Pharmacology and Pharmacy, 1990 - 2015

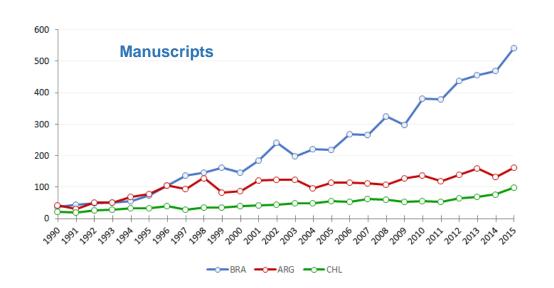


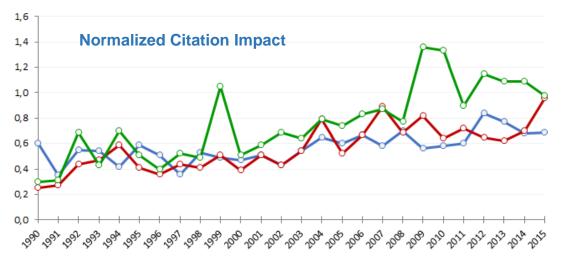




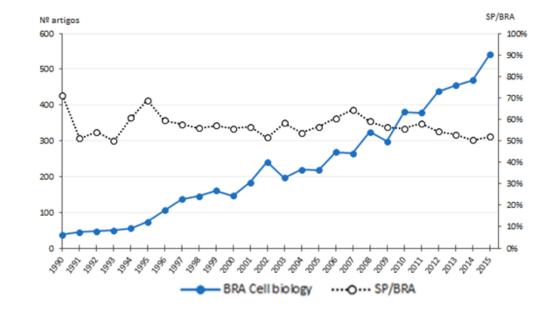


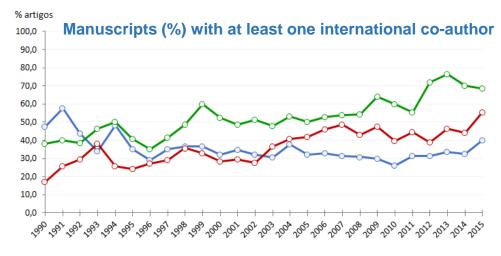
## Cell Biology, 1990 - 2015





-O-BRA -O-ARG -O-CHL

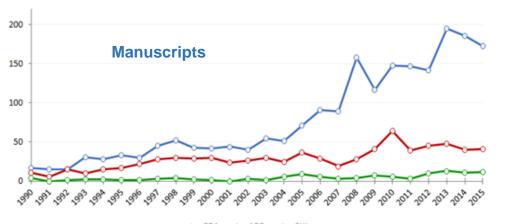




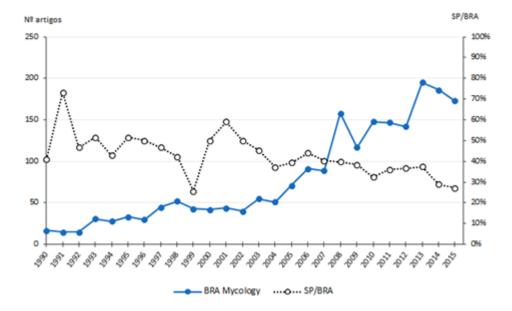
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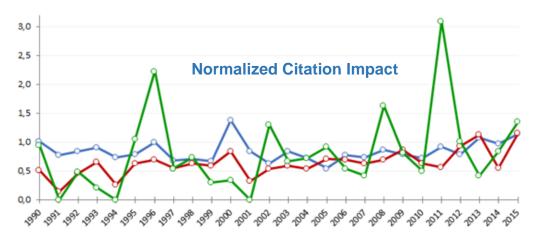
## Mycology, 1990 - 2015

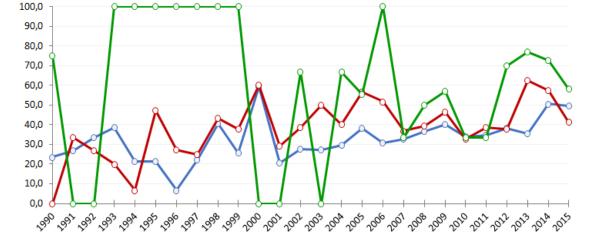
% artigos



-O-BRA -O-CHL

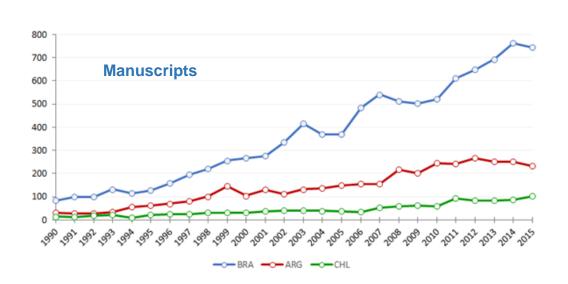


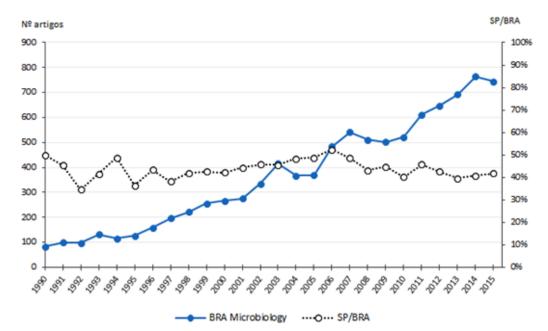


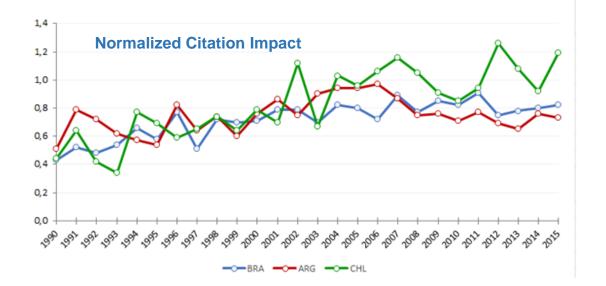


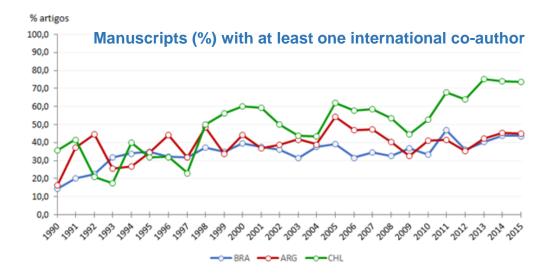
Manuscripts (%) with at least one international co-author

## Microbiology, 1990 - 2015

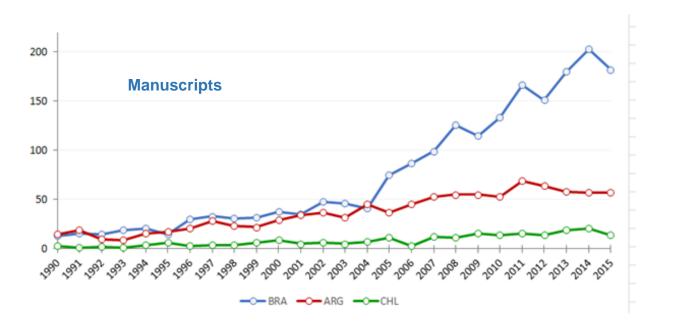


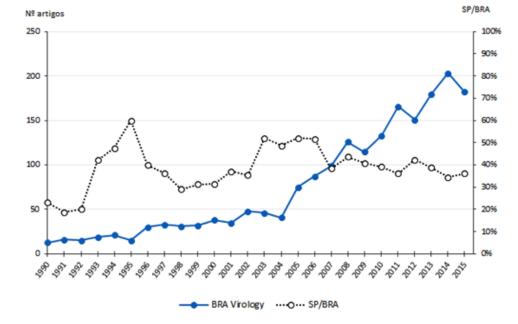


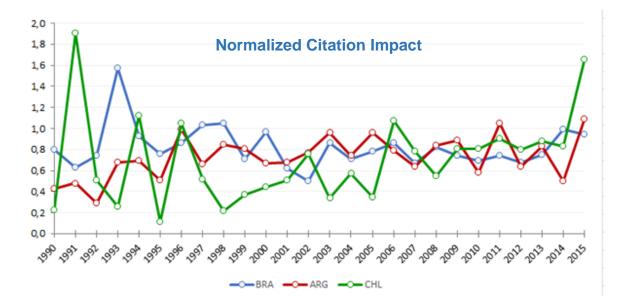


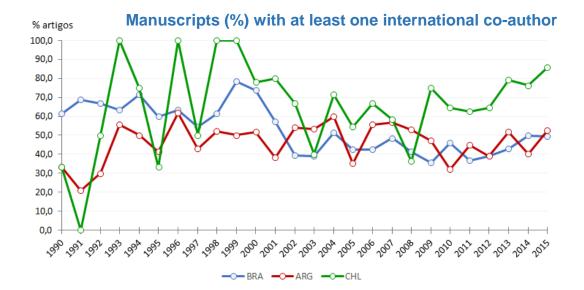


Virology, 1990 - 2015









## **Developmental Biology, 1990 - 2015**

