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Research Article

SCIENTOMETRICS MAPPING OF SCIENTIFIC RESEARCH ON MONKEY B VIRUS, 1934-2021

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Abstract

The study about the monkey B virus emerged too aware of this virus and the procurement of human life. The data analysis was observed through the web of science databases from 1934-2021 and collected a total number of records in 2030. First and foremost, the observation found the most significant number of papers (94) published in the year 2006 (4.63%), Document Type wise record counts (Articles: 1,796 & 88.47%), Authors wise record counts (Eberle R: 43 & 2.12%), Affiliations wise record counts (National Institutes of Health NIH USA: (181 & 8.92%), Publisher's wise record counts (Elsevier: 590 & 29.06%), Funding Agencies wise record counts (United States Department Of Health Human Services: 850 & 41.87%), Open access wise record counts (All Open Access: 1,126 & 55.47%), Research area wise record counts (Virology: 865 & 42.61%), Web of Science Categories wise record counts(Virology: 865 & 42.61%) and Web of Science Index wise record count (Science Citation Index Expanded (SCI-Expanded): 1,993 & 98.18%).

Keywords: Monkey B virus, COVID-19, Scientometrics, Web of Science.

INTRODUCTION

B virus (Cercopithecine herpesvirus 1, herpesviridae) is the only one of approximately 35 non-human primate herpesviruses that is extremely harmful in humans. Since its discovery in 1933, B virus has been connected to over two dozen human fatalities, five of which occurred in the past 12 years due to exposures involving macaques in acute B virus illness. This book includes B virus, a non-human herpesvirus that is neurotropic and neurovirulent in a foreign human host introduced by handling macaque monkeys often employed in scientific research (Boulter, 1975). Untreated B virus infections in humans have an 80% death rate, therefore treating macaque monkeys or macaque cells and tissues poses unique and possibly fatal risks. Human infection occurs when basic skin or mucosal barriers are breached, allowing virus from a macaque or macaque cells or tissues to infect the location. Viruses may be spread via fomites, infected particles or surfaces. In one instance, a shared medicine tube contaminated a damaged skin location with cream intended to treat another patient's bite wound. He then autoincoculated one eye while manipulating a contact lens. Out of 46 recorded zoonotic instances identified since 1933, 80 percent have survived infection thanks to antiviral treatments, compared to 80% mortality in untreated individuals. Early antiviral treatments reduce B virus-associated morbidity and mortality (Hilliard, J. (2011).Although monkey B virus (herpesvirus simiae; BV) is common in all macaque species, fatal human infections appear to be associated with exposure to rhesus macaques (*Macaca mulatta*), suggesting that BV isolates from rhesus monkeys may be more lethal to nonmacaques than are BV strains indigenous to other macaque species (Smith, 1998; Hotop. 2019). Macaques are a useful nonhuman primate model for biomedical research. BV (Cercopithecine herpesvirus 1) is a herpesvirus that spontaneously infects macaques.

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Although BV seldom causes serious illness in macaques, it may cause death in people if not treated quickly. Acute human BV infections led to BV being included to the NIH's initial target virus list for eradication through pathogen-free rhesus colonies. The diagnosis of BV infection in macaques and humans is not easy. Moreover, establishing and maintaining BV-free macaque colonies has proved difficult. Here, we examine the natural history of BV in macaques, outline current molecular knowledge, and connect it to issues related with BV diagnosis and BV-free macaque colony growth (Elmore and Eberle, 2008). More than 250 million individuals worldwide have chronic hepatitis B virus infection, increasing their risk of fatal liver illnesses including cirrhosis and hepatocellular carcinoma (HCC). In spite of current authorised antiviral treatments' efficacy in reducing viremia, HBV infection is seldom treated. The lack of appropriate animal models has hindered progress in HBV research and preclinical testing of antiviral medicines. Fortunately, surrogate animal models for HBV have been established. The creation of human chimeric mice and the evaluation of prospective chronic hepatitis B treatments has been significantly helped by a better knowledge of the obstacles to interspecies transmission. This review summarises existing animal models for studying HBV and related hepadnaviruses, and discusses difficulties and potential improvements (Liu *et al.*, 2021).

MATERIALS AND METHODS

The data provided in this research paper was collected from the database of the Science Web from 1934 until 20 July 2021. With the WoS analysis tool on the website, research data has been gathered, processed, analysed and computed. The tables and charts of this research were generated using scientometric research methodology. The article of the Monkey B virus explores the yearly wise reports (table 1), productive counts, in terms of publication years, count and percentage of 2030 during 1934-2021 and collected a total count of records in 2030.

Figure 1. Document Type wise record counts

Publication Years	Record Count	% of 2,030
1934	1	0.05%
1935	1	0.05%
1949	1	0.05%
1951	1	0.05%
1954	1	0.05%
1955	2	0.10%
1957	1	0.05%
1958	1	0.05%
1960	2	0.10%
1961	3	0.15%
1962	1	0.05%
1966	3	0.15%
1967	1	0.05%
1968	2	0.10%
1969	1	0.05%
1975	2	0.10%
1976	1	0.05%
1977	2	0.10%
1980	1	0.05%
1981	1	0.05%
1982	1	0.05%
1983	3	0.15%
1984	3	0.15%
1985	2	0.10%
1986	1	0.05%
1987	2	0.10%
1988	3	0.15%
1989	2	0.10%
1990	8	0.39%
1991	33	1.63%
1992	60	2.96%
1993	39	1.92%
1994	42	2.07%
1995	53	2.61%
1996	46	2.27%
1997	69	3.40%
1998	61	3.01%
1999	89	4.38%
2000	67	3.30%
2001	91	4.48%
2002	74	3.65%
2003	81	3.99%
2004	78	3.84%
2005	89	4.38%
2006	94	4.63%
2007	57	2.81%
2008	84	4.14%
2009	72	3.55%
2010	85	4.19%
2011	69	3.40%
2012	69	3.40%
2013	85	4.19%
2014	70	3.45%
2015	71	3.50%
2016	56	2.76%
2017	46	2.27%
2018	54	2.66%
2019	36	1.77%
2020	42	2.07%
2021	14	0.69%

The publication starting year of this article was diagnosed in 1934 with one number (0.05%). At that time, public support increased step by step for this research from 1934 to 1990. In this period, only 54 papers were published, with a slowly growing per cent of 2030. The majority of published articles started from the years 1991 to 2021 by identifying the papers (1976), where the greatest number of papers (94) were published in the year of 2006 (4.63%). On the contrary, the same number of records (69) were published three times in 1997, 2011 & 2012 with the same number of per cent of 2,030 (3.40%). Likewise, the same number of records (85) were published two times in 2010 & 2013 (4.19%).

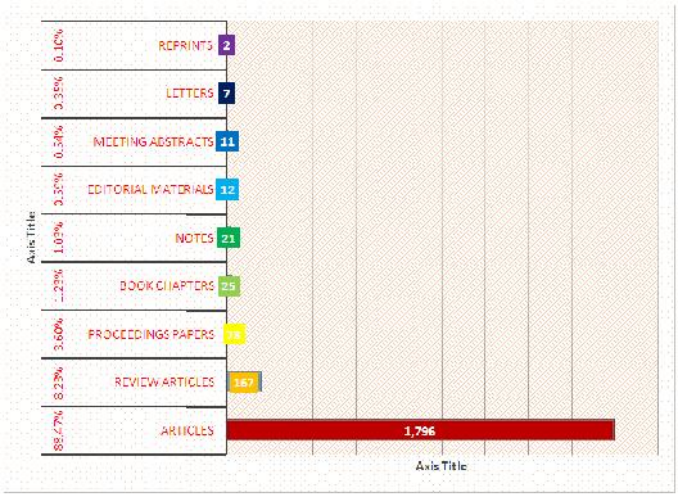

Figure 1. Document Type wise record counts

According to figure 1, defines the document type's wise record count through Document Types, Record Count and percentage of 2,030. The first place was explored by articles on the basis of record (1,796) count and percentage of 2,030 (88.47%). Subsequent places were explored by Review Articles (167 & % of 2,030: 8.23%), Proceedings Papers (73 & 3.60%), Book Chapters (25 & 1.23%), Notes (21 & 1.03%), Editorial Materials (12 & 0.59%), Meeting Abstracts (11 & 0.54%) and Letters (7 & 0.54%).

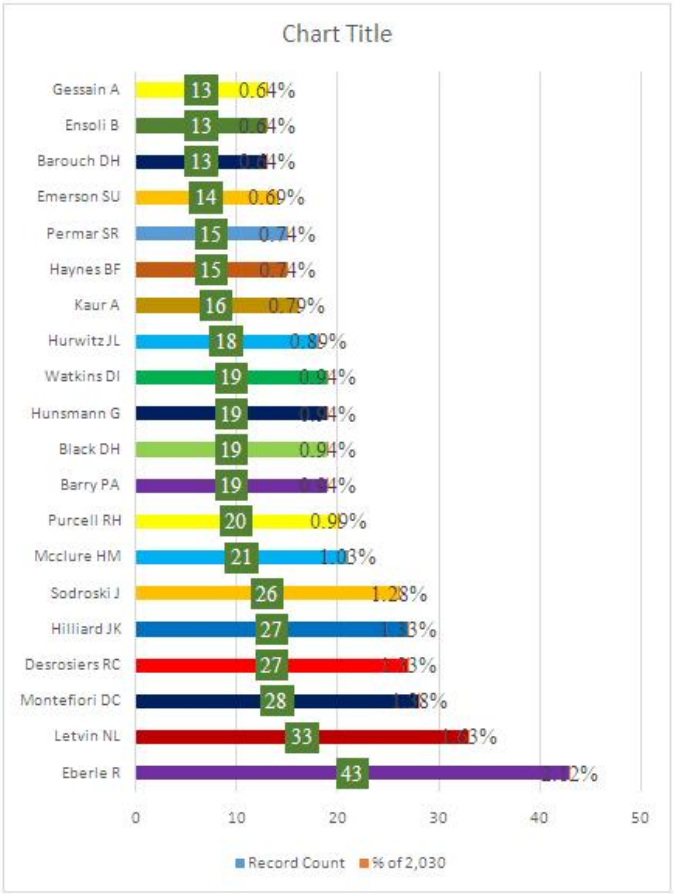

Figure 2. Authors wise Record Counts

Figure 2 determines the author's wise record in the study of the Monkey B Virus. Twenty authors appraised their counts and per cent of 2030. Out of 418, the most records count 43 numbers produced by the author of Eberle R with a per cent of

2030 (2.12%), followed by Letvin NL (33 & 1.63%). Then, the four different authors (Barry PA, Black DH, Hunsmann Gand Watkins DI) produced the same number of records count (19) with per cent of 2030 (0.94%), while three different authors (Barouch DH, Ensoli B, and Gessain A) produced the same number of records count (13) with per cent of 2030 (0.64%) respectively. The author of Desrosiers RC shared with Hilliard JK a growing record count (27 & 1.33%), and the author of Haynes BF shared with Permar SR (15 & 0.74%). The circulation of sponsored articles published through affiliations delivered record counts and % of 2,030 in table 2. The highest record counts the per cent of 2030 produced by the collaborations of the National Institutes of Health NIH USA (181 & 8.92%), closely followed by the affiliations of Harvard University (173 & 8.52%). The two collaborations (Beth Israel deaconess medical centre& NIH national cancer institute NCI) achieved the same record count (57 & 2.81%) per cent of 2030. Similarly, other Tulane University and University of Texas systems (55 & 2.71%), Dana Farber Cancer Institute, and Institute Pasteur Paris (47 & 2.32%). Finally, the affiliation of the Institute National de la Sante et de la Recherche médicaleInserm delivered the minor number of records counted per cent of 2030 (44 & 2.17%). The top 20 numbers of publishers were selected in table 3 of the Publisher's wise record counts for researching the Monkey B Virus. Elsevier identified most record counts with a per cent of 2,030 (590 & 29.06%) in these cases. The Publisher of Amer Soc Microbiology achieved the second-highest record count of 2,030 (380 & 18.72%). Meanwhile, two publishers (Frontiers Media Sa & MDPI) got the equal value of record counts with a per cent of 2,030 (21 & 1.03%), as well as another two publishers (Sage & Univ Chicago Press) got similar values (17 & 0.84%). One record count difference between the two publishers, namely Amer Assoc Laboratory Animal Science (37 & 1.82%) and Amer Assoc Immunologists (36 & 1.77%). Likewise, Natl Acad Sciences (30 & 1.48%) and Microbiology Soc (29 & 1.43%) respectively. But, the Publisher of Amer Soc Biochemistry Molecular Biology Inc got the slight value of record count with a per cent of 2,030 (14 & 0.69%).

Table 2. Affiliations wise record counts

Affiliations	Record Count	% of 2,030
National institutes of health NihUSA	181	8.92%
Harvard university	173	8.52%
Nihnational institute of allergy infectious diseases Niaid	109	5.37%
University of California system	105	5.17%
University of CaliforniaDavis	72	3.55%
Emory university	70	3.45%
Duke university	64	3.15%
Beth Israel deaconess medical center	57	2.81%
Nih national cancer institute NCI	57	2.81%
Tulane university	55	2.71%
University of Texas system	55	2.71%
Le reseau international des institutespasteurRiip	53	2.61%
Centers for disease control prevention USA	48	2.37%
Dana farber cancer institute	47	2.32%
Institutepasteur Paris	47	2.32%
Texas biomedical research institute	46	2.27%
Institute national de la sante et de la recherche medicaleinserm	44	2.17%

The United States Department of Health and Human Services got the maximum number of record counts of 850 with a per cent of 2030 (41.87%), and it stood in the top position, being prominently among the first five places of output. The next, the National Institutes of Health Nih USA got the record count of 838 with per cent of 2030 (41.28%), and it stood in the second position. For three, fourth and five places, Nih National Institute of Allergy, and Infectious Diseases NIAID (540 & 26.60%), Nih National Center for Research Resources NCRR (277 & 13.65%) and Nih National Cancer Institute NCI (177 & 8.72%) were respectively. The two funding agencies (Nih National Heart Lung Blood Institute NHLBI &Uk Research Innovation UKRI) got record counts (40 & 1.97%). The last three-place belong to the affiliations (Wellcome Trust, French National Research Agency Anr and German Research Foundation Dfg) got record counts (25 & 1.23%, 24 & 1.18%, and 23 & 1.13%).

Table 3. Publishers wise record counts

Publishers	Record Count	% of 2,030
Elsevier	590	29.06%
Amer Soc Microbiology	380	18.72%
Wiley	157	7.73%
Springer Nature	156	7.69%
Public Library Science	73	3.60%
Lippincott Williams & Wilkins	45	2.22%
Oxford Univ Press	42	2.07%
Amer Assoc Laboratory Animal Science	37	1.82%
Amer Assoc Immunologists	36	1.77%
Mary Ann Liebert, Inc	33	1.63%
Natl Acad Sciences	30	1.48%
Microbiology Soc	29	1.43%
Soc general microbiology	24	1.18%
Mary annliebertincpubl	22	1.08%
Frontiers Media Sa	21	1.03%
MDPI	21	1.03%
Taylor & Francis	19	0.94%
Sage	17	0.84%
Univ Chicago Press	17	0.84%
Amer Soc Biochemistry Molecular Biology Inc	14	0.69%

Table 4. Funding Agencies wise record counts

Funding Agencies	Record Count	% of 2,030
United States Department of Health Human Services	850	41.87%
National Institutes of Health NIH USA	838	41.28%
Nih National Institute of Allergy Infectious Diseases Niaid	540	26.60%
Nih National Center for Research Resources Ncrr	277	13.65%
Nih National Cancer Institute Nci	177	8.72%
European Commission	90	4.43%
Ministry of Education Culture Sports Science and Technology Japan Mext	48	2.37%
Nih National Institute Of General Medical Sciences Nigms	47	2.32%
National Natural Science Foundation Of China Nsfc	42	2.07%
Nih National Heart Lung Blood Institute Nhlbi	40	1.97%
Uk Research Innovation Ukri	40	1.97%
United States Public Health Service	37	1.82%
Nih National Institute of Neurological Disorders Stroke Ninds	36	1.77%
Japan Society for The Promotion of Science	34	1.68%
Medical Research Council UkMrc	32	1.58%
Grants in Aid for Scientific Research Kakenhi	30	1.48%
Nih National Institute of Mental Health Nimh	27	1.33%
Wellcome Trust	25	1.23%
French National Research Agency Anr	24	1.18%
German Research Foundation DFG	23	1.13%

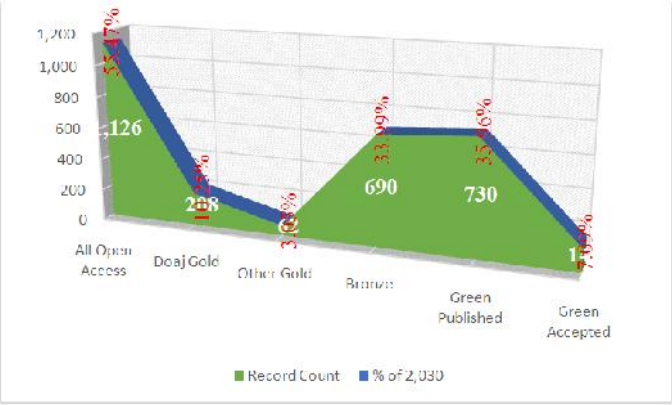

Figure 3. Open access wise record counts

Figure 3 describes the open access wise record counts through various open access, record counts and per cent of 2030 of output based on research papers in monkey B virus research. These articles showed that all open access collected the record counted 1,126 per cent of 2030 (55.47%). Then, Green Published collected the record count of 730 per cent of 2030 (35.96%). Bronze (690 & 33.99%), Doaj Gold (208 & 10.25%), Green Accepted (144 & 7.09%) and Other Gold (62 & 3.05%) were respectively. Table 5 shows the research area wise record counts, which consisted of 20 productive research areas only. Based on these research papers, the research area of Virology gathered the most record counts (865) with a per cent of 2030 (42.61%). Secondly, the research area of Immunology was 435 & 21.43% and, thirdly, the research area of Infectious Diseases (204 & 10.05%) and soon. Biotechnology Applied Microbiology and Veterinary Sciences accumulated the same number of record counts (160) per cent of 2030 (7.88%) each. Below the research count of 50, five of the research areas are tabulated, such as Gastroenterology & Hepatology (39 & 1.92%), Oncology (31 & 1.53%), Parasitology (30 &1.48%), Public Environmental Occupational Health (25 & 1.23%) and General Internal Medicine (23 & 1.13%) respectively.

Table 5. Research area wise record counts

Research Areas	Record Count	% of 2,030
Virology	865	42.61%
Immunology	435	21.43%
Infectious Diseases	204	10.05%
Biochemistry Molecular Biology	195	9.61%
Microbiology	170	8.37%
Biotechnology Applied Microbiology	160	7.88%
Veterinary Sciences	160	7.88%
Research Experimental Medicine	157	7.73%
Pharmacology Pharmacy	103	5.07%
Zoology	102	5.03%
Science Technology Other Topics	101	4.98%
Genetics Heredity	69	3.40%
Cell Biology	60	2.96%
Pathology	52	2.56%
Neurosciences Neurology	50	2.46%
Gastroenterology Hepatology	39	1.92%
Oncology	31	1.53%
Parasitology	30	1.48%
Public Environmental Occupational Health	25	1.23%
General Internal Medicine	23	1.13%

Table 6. Web of Science Categories wise record counts

Web of Science Categories	Record Count	% of 2,030
Virology	865	42.61%
Immunology	435	21.43%
Infectious Diseases	204	10.05%
Microbiology	170	8.37%
Biotechnology Applied Microbiology	160	7.88%
Veterinary Sciences	160	7.88%
Medicine Research Experimental	157	7.73%
Biochemistry Molecular Biology	111	5.47%
Zoology	102	5.03%
Multidisciplinary Sciences	99	4.88%
Pharmacology Pharmacy	99	4.88%
Biochemical Research Methods	94	4.63%
Genetics Heredity	69	3.40%
Cell Biology	59	2.91%
Pathology	52	2.56%
Neurosciences	48	2.37%
Gastroenterology Hepatology	39	1.92%
Oncology	31	1.53%
Parasitology	30	1.48%
Public Environmental Occupational Health	25	1.23%

Table 6 explains the importance of the web of science categories. The wise record counts in this field where Web of Science Categories Virology added the excellent performance of receiving the record count (865) with a percent of 2030 (42.61%), followed by Immunology (435 & 21.43%. 160 & 7.88% of record counts and per cent of 2030 added by the two webs of science categories such as Biotechnology Applied Microbiology and Veterinary Sciences. Likewise, another one was 99 & 4.88% added by Multidisciplinary Sciences and Pharmacology Pharmacy. Finally, the web of science categories of Public Environmental Occupational Health (25 & 1.23%) achieved the most deficient performance among these categories. The Web of Science Index wise record count in figure 4 provides the Web of Science Index results, and its record counts per cent of 2,030. In these Science Citation Index Expanded (SCI-Expanded) cases, most records count 1,993 per cent of 2030 (98.18%). Then, subsequent occupants were Conference Proceedings Citation Index – Science (CPCI-S) with their results (76 & 3.74%), Book Citation Index – Science (BKCI-S) with their results (25 & 1.23%), and Social Sciences Citation Index (SSCI) with their results (11 & 0.54%) respectively. The Emerging Sources Citation Index (ESCI) and Index Chemicus (IC) achieved poor results, i.e., 4 & 0.20% and 3 & 0.15%.

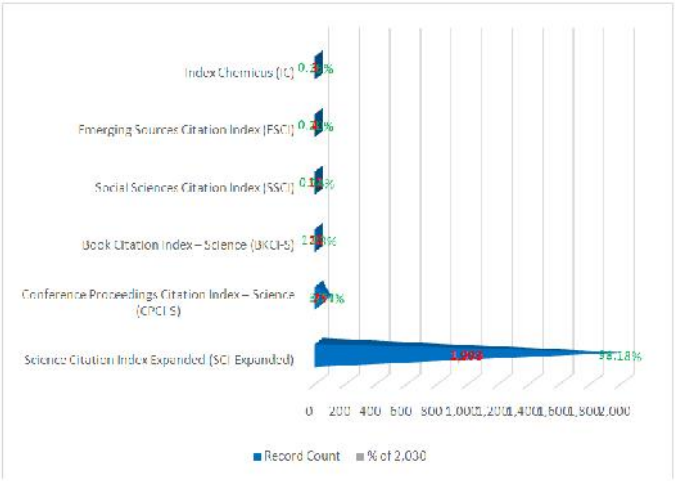

Figure 4. Web of Science Index wise record count

Conclusion

Since 1934, improvements in research in this field have been made. In the view of this study, the most productive records count with the percent of 2030 identified by the more exciting researchers involved in the field in various countries. The most significant research area in Virology was identified. Most of the research papers were published by Elsevier publications only. In all circumstances, the USA gave the best performance in this field. In this connection, the expectations of the research environment will be significantly attractive. These research papers will increase the reading habit and lead to more articles being published in this area.

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