

## According to Quantum Perspective Model, are the Numbers of Pi Also Meaningful in Biochemistry?

Tahir ÖLMEZ\*

*Selçuk University, Social Sciences Dept., Selçuklu/Konya*

*Email: bsonmez3@gmail.com, tolmez123@yahoo.com*

### Abstract

This article researches whether there is a link between pi numbers and genetic codes. At first, the digits of the pi numbers after the comma are added respectively. Then, the sum of the numbers after the comma are converted to bases in genetic codes. Secondly, the resulting sum corresponds to the nucleotide bases, the results obtained in this way are expressed as nucleotide bases. (A, T, C, G, and U). (A)Adenine, (T) Thymine, (C) Cytosine, (G) Guanine, (U) Uracil. From this point of view, when the first four hundred digits of pi numbers after the comma are calculated [1], the gene sequence is obtained as follows: [TCGATTATACTGGTTGGTTGTTAACGGTAC]. Thirdly, after NCBI (National Biotechnology Information Center) has researched this sequence, the search result is similar to **DANIO RERIO (Zebra fish)** and even **Timema**. Fourthly, fish containing Arginine “CGG”, one of the results of the NCBI blasts, is also an example of Zebra fish, a species of bony fish. Zebra fish and human genetic codes have been proven to be very similar to each other. Fifthly, while pi, one of the irrational numbers, should be a non-repetitive sequence, some repetitive gene sequences were found after investigating this sequence [TCGATTATACTGGTTGGTTGTTAACGGTAC] at the NCBI (National Biotechnology Information Center). Just like “TTA”, “TAC” and “GTT”. “Finally, given that Timemas reproduce asexually, not only are the pi numbers irrational numbers, but there is also an abnormal sexual reproduction in Timema. In summary, the relationship between pi numbers and genetic codes can also help in obtaining new clues in Biochemistry.

**Key words:** Quantum Perspective Model; Danio Rerio; Pi numbers; NCBI (National Biotechnology Information Center); Timema.

---

\* Corresponding author.

## 1.Introduction

Before this study, irrational numbers were also studied as Pi numbers [4], golden ratio numbers [6], Euler numbers [7], square root of two numbers, square root of three numbers and square root of five numbers. Let me see the similarities of irrational numbers with respect to genetic sequences. For example, as a result of manually dividing the number twenty-two (22) into seven (7), the series of numbers "428571" that continue continuously after the comma can be achieved. When this sequence of numbers is written in fourteen (14) groups, it can be similar to nucleotide basic codes: ATU. Also, it can be expressed as "UTA" because not only "428571" is cycling numbers but "ATU" genetic codes are also cycling, too. So, it can be expressed as forever UTA's [Uracil (U), Thymine (T) and Adenine(A)]. (Remember, in RNA polymerase can only read the DNA strand not in the 3' to 5' direction but reads 5' to 3' direction; that is one REVERSE gene expression) [2]. After searching for this gene sequence "UTA" in NCBI databases, results were obtained on Zebra fish (Danio Rerio) [4]. In other words, atoms with the smallest base structure are taken as a small unit, while they are analyzed from the point of view of the Quantum Perspective Model. Mathematical numbers can also be taken as a unit [4].

## 2. Methods and discussion

The chemical structures of bases include Carbon(C), Nitrogen (N), Oxygen (O), and Hydrogen (H). **Calculation of bases with chemical atoms** (See also **Table-2**). (Ölmez T, 2020)

**Table 1:** Representation of nucleotide bases (A, T, C, G and U) in chemical atoms

ATOMS /NUCLEOTIDE BASES	C=6	H=1	O=8	N=7	SUM
ADENINE: C <sub>5</sub> H <sub>5</sub> N <sub>5</sub>	5	5	-	5	70
THYMINE: C <sub>5</sub> H <sub>6</sub> N <sub>2</sub> O <sub>2</sub>	5	6	2	2	66
CYTOSINE: C <sub>4</sub> H <sub>5</sub> N <sub>3</sub> O <sub>1</sub>	4	5	1	3	64
GUANINE: C <sub>5</sub> H <sub>5</sub> N <sub>5</sub> O <sub>1</sub>	5	5	1	5	78
URACIL : C <sub>4</sub> H <sub>4</sub> N <sub>2</sub> O <sub>2</sub>	4	4	2	2	58

The atomic numbers of them: Carbon(C):6, Nitrogen (N):7, Oxygen (O):8, Hydrogen (H):1 (Wieser E M and his colleagues 2013). The chemical structures of bases (A, T, C, G, and U) are shown at below [6].

(A) Adenine: C<sub>5</sub>H<sub>5</sub>N<sub>5</sub>:70;

(T) Thymine: C<sub>5</sub>H<sub>6</sub>N<sub>2</sub>O<sub>2</sub>:66,

(C) Cytosine: C<sub>4</sub>H<sub>5</sub>N<sub>3</sub>O<sub>1</sub>:64,

(G) Guanine: C<sub>5</sub>H<sub>5</sub>N<sub>5</sub>O<sub>1</sub>:78, and

(U) Uracil: C<sub>4</sub>H<sub>4</sub>N<sub>2</sub>O<sub>2</sub>: 58

(Lodish H and his colleagues 2018).

Also in this research, genetic codes were used as a new formula (Nirenberg and his colleagues 1965) just like as **(A, T, C, G, and U)**. **(A)**Adenine, **(T)**Thymine, **(C)**Cytosine, **(G)**Guanine, **(U)**Uracil. Before this work, the fourteen group of Pi number can be shown as: Continuous **UTA's** by [4]. Secondly, another favorite sample of this research is done with velocity of light numbers by Kevser Köklü again [3]. This relationship between the numbers and genetic codes is called **Quantum Perspective Model** by [4]. Thirdly, in another article with identical cis regulatory elements examined the links between the Golden Ratio numbers [6]. Fourthly, There is a connection between Euler numbers and the Fibonacci series. When the numbers of Euler after the comma were converted from a decimal (10) number-based system to a binary (2) number-based system, they corresponded to the number "55" in the Fibonacci series [8]. After all these studies, pi numbers and the genetic codes are now being investigated in relation to the **Quantum Perspective Model**.

### 3. Calculation of pi numbers and genetic codes

The first four hundred digits of the number pi after the comma are:

3.1415926535 8979323846 2643383279 5028841971 6939937510 5820974944

5923078164 0628620899 8628034825 3421170679 8214808651 3282306647

0938446095 5058223172 5359408128 4811174502 8410270193 8521105559

6446229489 5493038196 4428810975 6659334461 2847564823 3786783165

2712019091 4564856692 3460348610 4543266482 1339360726 0249141273

7245870066 0631558817 4881520920 9628292540 9171536436 7892590360

0113305305 4882046652 1384146951 9415116094 3305727036 5759591953

0921861173 8193261179 3105118548 0744623799 6274956735 18 [1]

Also, Pi numbers can be shown as: **[TCGATTATACTGGTTGGTTGTTAACGGTAC]**

The **first** group of Pi numbers after the comma:

$1+4+1+5+9+2+6+5+3+5+8+9+7=65$ . Just like as in Thymine **(T):66**.

The **second** group of Pi numbers after the comma:

$9+3+2+3+8+4+6+2+6+4+3+3+8+3=64$ . Just like as in Cytosine **(C):64**

The **third** group of Pi numbers after the comma:

$2+7+9+5+0+2+8+8+4+1+9+7+1+6+9=78$ . Just like as in Guanine (G):**78**

The **fourth** group of Pi numbers after the comma:

$3+9+9+3+7+5+1+0+5+8+2+0+9+7=68$ . Just like as in Adenine (A):**70**

The **fifth** group of Pi numbers after the comma:

$4+9+4+4+5+9+2+3+0+7+8+1+6+4=66$ . Just like as in Thymine (T):**66**

The **sixth** group of Pi numbers after the comma:

$0+6+2+8+6+2+0+8+9+9+8+6+2=66$ . Just like as in Thymine (T):**66**

The **seventh** group of Pi numbers after the comma:

$8+0+3+4+8+2+5+3+4+2+1+1+7+0+6+7+9=70$ . Just like as in Adenine (A):**70**

The **eighth** group of Pi numbers after the comma:

$8+2+1+4+8+0+8+6+5+1+3+2+8+2+3+0+6=67$ . Just like as in Thymine (T):**66**

The **ninth** group of Pi numbers after the comma:

$6+4+7+0+9+3+8+4+4+6+0+9+5+5=70$ . Just like as in Adenine (A):**70**

The **tenth** group of Pi numbers after the comma:

$0+5+8+2+2+3+1+7+2+5+3+5+9+4+0+8=64$ . Just like as in Cytosine(C):**64**

The **eleventh** group of Pi numbers after the comma:

$1+2+8+4+8+1+1+1+7+4+5+0+2+8+4+1+0+2+7=66$ . Just like as in Thymine (T):**66**

The **twelfth** group of Pi numbers after the comma:

$0+1+9+3+8+5+2+1+1+0+5+5+5+9+6+4+4+6+2+2=78$ . Just like as in Guanine (G):**78**

The **thirteenth** group of Pi numbers after the comma:

$9+4+8+9+5+4+9+3+0+3+8+1+9+6=78$ . Just like as in Guanine (G):**78**

The **fourteenth** group of Pi numbers after the comma:

$4+4+2+8+8+1+0+9+7+5+6+6+5=65$ . Just like as in Thymine (**T**):**66**

The **fifteenth** group of Pi numbers after the comma:

$9+3+3+4+4+6+1+2+8+4+7+5+6+4=66$ . Just like as in Thymine (**T**):**66**

The **sixteenth** group of Pi numbers after the comma:

$8+2+3+3+7+8+6+7+8+3+1+6+5+2+7+1+2=78$ . Just like as in Guanine (**G**):**78**

The **seventeenth** group of Pi numbers after the comma:

$0+1+9+0+9+1+4+5+6+4+8+5+6+6+9+2+3=78$ . Just like as in Guanine (**G**):**78**

The **eighteenth** group of Pi numbers after the comma:

$4+6+0+3+4+8+6+1+0+4+5+4+3+2+6+6+4=66$ . Just like as in Thymine (**T**):**66**

The **nineteenth** group of Pi numbers after the comma:

$8+2+1+3+3+9+3+6+0+7+2+6+0+2+4+9+1=66$ . Just like as in Thymine (**T**):**66**

The **twentieth** group of Pi numbers after the comma:

$4+1+2+7+3+7+2+4+5+8+7+0+0+6+6+0+6+3+1+5=77$ . Just like as in Guanine (**G**):**78**

The **twentyfirst** group of Pi numbers after the comma:

$5+8+8+1+7+4+8+8+1+5+2+0+9=66$ . Just like as in Thymine (**T**):**66**

The **twenty second** group of Pi numbers after the comma:

$2+0+9+6+2+8+2+9+2+5+4+0+9+1+7=66$ . Just like as in Thymine (**T**):**66**

The **twenty third** group of Pi numbers after the comma:

$1+5+3+6+4+3+6+7+8+9+2+5+9=68$ . Just like as in Adenine (**A**):**70**

The **twenty fourth** group of Pi numbers after the comma:

$0+3+6+0+0+1+1+3+3+0+5+3+0+5+4+8+8+2+0+4+6+6=68$ . Just like as in Adenine (**A**):**70**

The twenty fifth group of Pi numbers after the comma:

$5+2+1+3+8+4+1+4+6+9+5+1+9+4+1=64$ . Just like as in Cytosine(C):**64**

The twenty sixth group of Pi numbers after the comma:

$5+1+1+6+0+9+4+3+3+0+5+7+2+7+0+3+6+5+7+5=79$ . Just like as in Guanine (G):**78**

The twenty seventh group of Pi numbers after the comma:

$9+5+9+1+9+5+3+0+9+2+1+8+6+1+1+7+3=79$ . Just like as in Guanine (G):**78**

The twenty eighth group of Pi numbers after the comma:

$8+1+9+3+2+6+1+1+7+9+3+1+0+5+1+1+8=66$ . Just like as in Thymine (T):**66**

The twenty ninth group of Pi numbers after the comma:

$5+4+8+0+7+4+4+6+2+3+7+9+9=68$ . Just like as in Adenine (A):**70**

The eighteenth group of Pi numbers after the comma:

$6+2+7+4+9+5+6+7+3+5+1+8=63$ . Just like as in Cytosine(C):**64**

This sequence is” [TCGATTATACTGGTTGGTTGTTAACGGTAC]. Let me try to explain this sequence with the “Quantum Perspective Model”. For example, The **first** group of Pi numbers after comma equal to Thymine (T) with the lack of one ”1” Hydrogen bonds(**H:1**).(Remember, See **Table-1**; (A)Adenine:70) This result could be the meaning of Pi numbers sequence in groups [TCGATTATACTGGTTGGTTGTTAACGGTAC]. The **fourth** group of Pi numbers after the comma is regarded as Adenine (A) with the lack of two ”1” Hydrogen bonds(**H:1**).So, the **deviations** in the calculation of Pi numbers can be derived from the Adenine (A) - Thymine (T) Hydrogen bonds because of Adenine (A) pairs with Thymine (T) by *two* hydrogen bonds. Cytosine(C) - Guanine (G) pairs with by *three* hydrogen bonds [3]. The reason for the lack of hydrogen bonds: **Hydrogen bonding** is a very versatile attraction [6]. Hydrogen bonds are relatively *weak and easily broken* by increasing hardness (Farrell R E, 2010).

#### 4. Results

After searching for Pi numbers after comma result in National Biotechnology Information Center (NCBI) databases, some conceptual relationships with bony fish can be found. [14]. Types of **bony fishes** are based on **Danio rerio (Zebra fish) and Acanthopagrus latus (bony fishes)** (See **Figure-2**). Types of other living creatures are homo sapiens 19 chromosome, mus musculus (house mouse) ,Patria miniata (star fish), motacilla alba (birds), Alligator sinensis, viruses, Timema douglasi, Timema poppensis, Timema monikensis, Timema bartmani and Timema cristinae (walking sticks)(See **Figure-1**). [13] Another interesting result of NCBI is

**Timema** .The longest known asexual period for **Timema** [12], including two species that have not engaged in sexual reproduction for a million years. **Asexuality** in animals is rare, and the Timema-insect lineage that evolved without sex has been proven to have survived for centuries and even Timema reproduces asexually [13]. In summary, the relationship between pi numbers in mathematics and genetic codes in Biochemistry may shed light on new discoveries. At the NCBI (National Biotechnology Information Center), when gene sequences obtained from pi numbers are investigated, a gene sequence is obtained as follows: [TCGATTATACTGGTTGGTTTAAACGGTAC].

## 5. Conclusion

At first, the results of this research can be summarized as taking pi numbers after commas as the chemical structure of genetic codes. Secondly, the Pi digits after the comma can be considered as an indicator of genetic codes. One result of the common features of both Biochemistry and Mathematical Science was the NCBI blast results, which include both bony fish and, in particular [9]. Zebra fish are an excellent favorite sample used in many studies related to Biochemistry and genetics [4]. One of the common NCBI results of Pi numbers and Euler numbers along with the square of the speed of light is Zebra fish. [3] [6]. Aside from this result, the NCBI result for CAAT Box and TATA Box also consists of bony fish, including Zebra fish. [7]. Thirdly ,although the Pi number is an irrational number, some repetitive gene sequences were found after researching [TCGATTATACTGGTTGGTTGTTAAACGGTAC] sequence at the NCBI (National Biotechnology Information Center).These are “**TTA**”[ (T) Thymine, (T) Thymine and (A) Adenine],”**TAC**”[ (T) Thymine, (A) Adenine and , (C) Cytosine] and” **GTT**”[ (G) Guanine, (G) Guanine and(T) Thymine]. These three triplets, which are triplets like codons, are interesting because repetitive gene sequences that shouldn't be in irrational numbers could shed light on new research between mathematics and Biochemistry. Let alone this triplets, none of this triplet's are in the Universal Genetic Code Table except [“CGG” (**ARGININE**)] [18].Since the human body does not produce arginine on its own, it must be taken from outside. Arginine, which is among the essential amino acids, is a molecule that can be obtained from **fish** nutrition, which plays a critical role in health, such as immune function [17]. Also, Arginine has greater potential in terms of its shown anti-aging benefits [16] and it plays an important role in blood pressure regulation [19]. So not only arginine is obtained from fish, but also one of the NCBI blast results includes both one of the bony fish, DANIO RERIO. Finally, the calculation results of pi numbers with genetic codes [especially (A) Adenine, (T) Thymine, (C) Cytosine, (G) Guanine and (U) Uracil] are related to both Biochemistry and Mathematics. In short, the digits of pi after the comma can be attributed not only to numbers in *Mathematics*, but also to genetic codes in *Biochemistry*.

## References

- [1]. <http://www.math.com/tables/constants/pi.htm> January 2021.
- [2]. <https://www.wikizero.com/en/SgRNA> January 2021.
- [3]. Köklü K. Is Relativity Theory Also Valid in Biogenetics and Mathematics? NeuroQuantology April 2019b; 17:3. DOI: [10.14704/nq.2019.17.3.1999](https://doi.org/10.14704/nq.2019.17.3.1999).
- [4]. Köklü K. A Quantum Perspective Model to Genetic Codes through Various Sciences. Neuroquantology April 2019a; Vol 17.No:3. DOI: [10.14704/nq.2019.17.3.1974](https://doi.org/10.14704/nq.2019.17.3.1974)

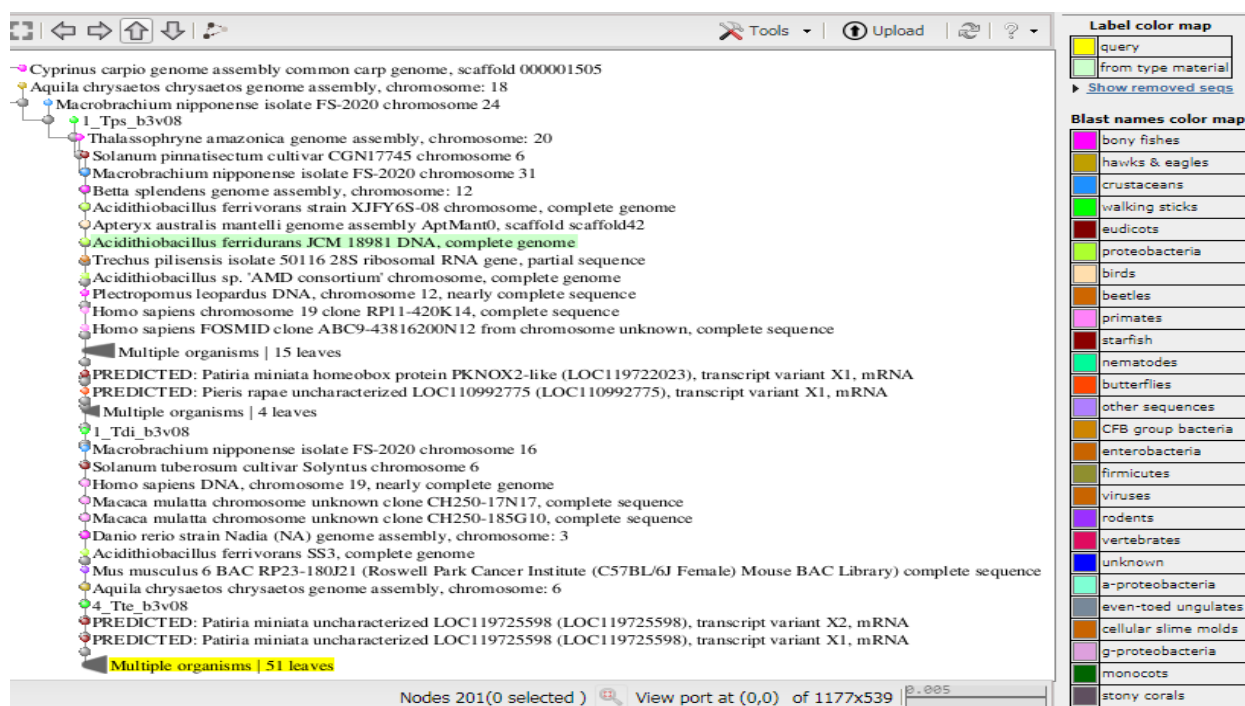
- [5]. Lodish H, Berk A, Zipursky S L, Matsudaira P, Baltimore D and Darnell J. Molecular Cell Biology, 6th edition, Translation: Geçkil H, Özmen M, Yeşilada Ö, Palme Publishing, New York, 2018, 294-302
- [6]. Ölmez T. Is there an aesthetics in golden ratio as regards to the common cis-regulatory elements versus to atomic numbers of elements with respect to Quantum perspective model? *Neurology and Neuroscience Reports* 2020; Vol.3.DOI: [10.15761/NNR.1000119](https://doi.org/10.15761/NNR.1000119)
- [7]. Ölmez T. With respect to Quantum perspective model, Can Euler Numbers be related to Biochemistry? *Global Journal of Science Frontier Research* 2020; Vol.20, Issue: 9.
- [8]. Ölmez T. Is there a similarity between Fibonacci sequence and Euler's number with respect to quantum perspective model? *Global Journal of Science Frontier Research* 2020; Vol.20, Issue: 9
- [9]. <https://ipfs.io/ipfs/QmXoypizjW3WknFi-JnKLwHCnL72vedxjQkDDP1mXWo6uco/wiki/Zebrafish.html> January 2021.
- [10]. Wieser E M, Holden N, Coplen B T, Böhlke J K, Berglund M and Brand W A and et al. Atomic weights of the elements 2011, *Pure and Application Chemistry* 2013; 85(5): 1047-1078
- [11]. Farrell RE (2010) *RNA Methodologies A Laboratory Guide For Isolation and Characterization*, 4th Edition, Amsterdam Elsevier Acad Press, The Pennsylvania State University York pp. 704-710.
- [12]. <https://en.wikipedia.org/wiki/Timema> 14 December 2020 December 2020.
- [13]. Schwander, Tanja; Lee Henry; Bernard J Crespi (2011). "Molecular evidence for ancient asexuality in *Timema* stick insects". *Current Biology*. **21** (13): 1129–34. Doi :[10.1016/j.cub.2011.05.026](https://doi.org/10.1016/j.cub.2011.05.026)
- [14]. <https://blast.ncbi.nlm.nih.gov/Blast.cgi> January 2021.
- [15]. Nirenberg M, Leder P, Bernfield M, Brimacombe R, Trupin J, Rottman F, O'Neal C. NA Codewords and Protein Synthesis. VII on the General Nature of the RNA Code. *Proc Natl Acad. Sci, USA*. 1965; 53(5): 1161-1168
- [16]. Gad M.Z. Anti-aging effects of l-arginine, *Journal of Advanced Research* (2010)1, 169–177. Doi: <https://doi.org/10.1016/j.jare.2010.05.001>.
- [17]. Seyyed Morteza Hoseini, Mukhtar Ahmad Khan, Morteza Yousefi and Benjamin Costas, Roles of arginine in fish nutrition and health: insights for future researches, *Reviews in Aquaculture* Vol.12.Issue:4, November 2020, pages :2091-2108, doi: <https://doi.org/10.1111/raq.12424>.
- [18]. Kurnaz M L, Bilgin T. and Kurnaz I.A. A Statistical Analysis of the Robustness of Alternate Genetic Coding Tables, *Int. J. Mol. Sci.* 2008, 9, 679-697. doi: [10.3390/ijms9050679](https://doi.org/10.3390/ijms9050679) .
- [19]. <https://en.wikipedia.org/wiki/Arginine> 02 January 2021 January 2021.



## The figures

<a href="#">3_Tms_b3v08</a>	<a href="#">Timema monike...</a>	34.2	34.2	56%	162	100.00%	130673	<a href="#">OB794886.1</a>
<a href="#">3_Tms_b3v08</a>	<a href="#">Timema monike...</a>	34.2	34.2	56%	162	100.00%	132122	<a href="#">OB794869.1</a>
<a href="#">4_Tte_b3v08</a>	<a href="#">Timema tahoe</a>	34.2	34.2	56%	162	100.00%	51979	<a href="#">OE005579.1</a>
<a href="#">PREDICTED: Patiria miniata uncharacterized LOC119725598 (LOC119725598), transcript variant X2,...</a>	<a href="#">Patiria miniata</a>	34.2	34.2	56%	162	100.00%	3012	<a href="#">XM_038197064.1</a>
<a href="#">PREDICTED: Patiria miniata uncharacterized LOC119725598 (LOC119725598), transcript variant X1,...</a>	<a href="#">Patiria miniata</a>	34.2	34.2	56%	162	100.00%	3300	<a href="#">XM_038197063.1</a>
<a href="#">PREDICTED: Motacilla alba alba PKHD1 ciliary IPT domain containing fibrocystin/polyductin (PKHD1)...</a>	<a href="#">Motacilla alba a...</a>	34.2	34.2	56%	162	100.00%	14416	<a href="#">XM_038131606.1</a>
<a href="#">PREDICTED: Motacilla alba alba PKHD1 ciliary IPT domain containing fibrocystin/polyductin (PKHD1)...</a>	<a href="#">Motacilla alba a...</a>	34.2	34.2	56%	162	100.00%	14456	<a href="#">XM_038131605.1</a>
<a href="#">PREDICTED: Motacilla alba alba PKHD1 ciliary IPT domain containing fibrocystin/polyductin (PKHD1)...</a>	<a href="#">Motacilla alba a...</a>	34.2	34.2	56%	162	100.00%	14551	<a href="#">XM_038131604.1</a>
<a href="#">2_Tsi_b3v08</a>	<a href="#">Timema shepardi</a>	34.2	34.2	56%	162	100.00%	138102	<a href="#">OC001878.1</a>
<a href="#">2_Tsi_b3v08</a>	<a href="#">Timema shepardi</a>	34.2	34.2	56%	162	100.00%	171829	<a href="#">OC001342.1</a>
<a href="#">1_Tdi_b3v08</a>	<a href="#">Timema douglasi</a>	34.2	34.2	56%	162	100.00%	1083	<a href="#">OA613359.1</a>
<a href="#">Klebsiella pneumoniae strain KP19-3088 plasmid pKP19-3088-375k, complete sequence</a>	<a href="#">Klebsiella pneu...</a>	34.2	34.2	56%	162	100.00%	375474	<a href="#">CP063149.1</a>
<a href="#">4_Tbi_b3v08</a>	<a href="#">Timema bartmani</a>	34.2	34.2	56%	162	100.00%	979	<a href="#">OD618958.1</a>
<a href="#">3_Tce_b3v08</a>	<a href="#">Timema cristinae</a>	34.2	34.2	56%	162	100.00%	197504	<a href="#">OC317615.1</a>
<a href="#">3_Tce_b3v08</a>	<a href="#">Timema cristinae</a>	34.2	34.2	70%	162	95.24%	440826	<a href="#">OC316734.1</a>
<a href="#">3_Tms_b3v08</a>	<a href="#">Timema monike...</a>	34.2	34.2	70%	162	95.24%	499548	<a href="#">OB792974.1</a>
<a href="#">3_Tms_b3v08</a>	<a href="#">Timema monike...</a>	34.2	34.2	56%	162	100.00%	630379	<a href="#">OB792851.1</a>
<a href="#">Cyprideis torosa</a>	<a href="#">Cyprideis torosa</a>	34.2	34.2	70%	162	95.24%	1020	<a href="#">OB698471.1</a>
<a href="#">Klebsiella pneumoniae strain KP19-3023 plasmid pKP19-3023-374k, complete sequence</a>	<a href="#">Klebsiella pneu...</a>	34.2	34.2	56%	162	100.00%	374513	<a href="#">CP063748.1</a>
<a href="#">CrAssphage cr107_1, complete genome</a>	<a href="#">crAssphage cr1...</a>	34.2	34.2	56%	162	100.00%	93787	<a href="#">MT774377.1</a>
<a href="#">Macrobrachium nipponense isolate FS-2020 chromosome 34</a>	<a href="#">Macrobrachium...</a>	34.2	34.2	56%	162	100.00%	71390351	<a href="#">CP062047.1</a>
<a href="#">Macrobrachium nipponense isolate FS-2020 chromosome 19</a>	<a href="#">Macrobrachium...</a>	34.2	34.2	56%	162	100.00%	86821439	<a href="#">CP062040.1</a>
<a href="#">Acanthopagrus latus isolate v.2019 genome assembly, chromosome: 24</a>	<a href="#">Acanthopagrus...</a>	34.2	34.2	56%	162	100.00%	16042954	<a href="#">LR884483.1</a>

**Figure 1:** The NCBI (National Biotechnology Information Center) Result for Nucleotide Sequence “TCGATTATACTGGTTGGTTGTAAACGGTAC” [14].



**Figure 2:** The NCBI (National Biotechnology Information Center) Result Blast Tree View Widget for “TCGATTATACTGGTTGGTTGTTAACGGTAC” Nucleotide Sequence [14].