

# Probing DNA Using UTM Related Concepts Based on HOL/Scala/JVM/Jikes RVM in the Context of Investigating Theoretical Aspects of Gene Therapy.

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## [I] Introduction & Inspiration :

**“Computational aspects of DNA is huge and never it is completely understood. Needs lot of R&D hence our simple communication.”**

[a] DNA – Turing Machines Concepts.

[ <http://www.dna.caltech.edu/Papers/dimacs.pdf> ]

[b] Nucleic Acids Data Sequencing using Higher Order Logic - HOL Informatics.

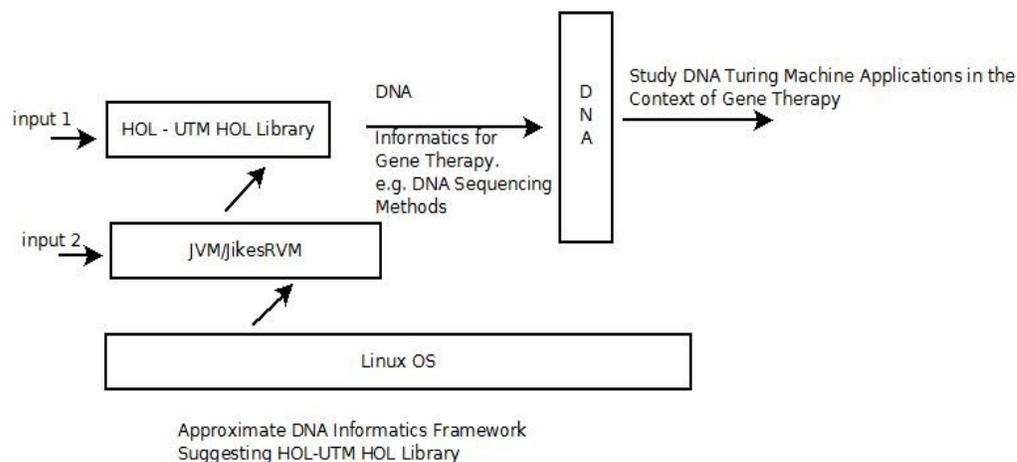
[ [http://www.scienpress.com/Upload/JAMB/Vol%202\\_2\\_6.pdf](http://www.scienpress.com/Upload/JAMB/Vol%202_2_6.pdf) ]

[c] <http://isabelle.in.tum.de/> && [https://www.isa-afp.org/entries/Universal\\_Turing\\_Machine.html](https://www.isa-afp.org/entries/Universal_Turing_Machine.html)

[ [https://www.isa-afp.org/browser\\_info/current/AFP/Universal\\_Turing\\_Machine/index.html](https://www.isa-afp.org/browser_info/current/AFP/Universal_Turing_Machine/index.html) ]

DNA – Genetic Material System ; UTM - Universal Turing Machine.

## [II] HOL Informatics Framework :



**Figure I – Our Informatics System Using HOL-Our Block Diagram is based on**  
**[<http://vixra.org/pdf/1901.0027v1.pdf>]**

### **[III] Conclusion/s With Future Perspectives --**

Possible Theoretical/Experimental R&D lines could include :

[i] “Photo-switchable and Autonomous Life-Like Colloidal Systems”

[ii] “Dynamic Materials Driven by Chemical Fuels and Feedback Mechanisms”

**[IV] Nature of our Short Communication** – Non Profit R&D.Special Thanks to all who made this happen in my LIFE.

### **[V] References :**

1. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3722627/>
2. <https://www.ncbi.nlm.nih.gov/pubmed/14684267>
3. <https://www.ncbi.nlm.nih.gov/pubmed/12022258>
4. <https://www.ncbi.nlm.nih.gov/pubmed/17981740>
5. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3722627/>
6. [http://cdn.intechopen.com/pdfs/43162/InTech-Non\\_viral\\_delivery\\_systems\\_in\\_gene\\_therapy.pdf](http://cdn.intechopen.com/pdfs/43162/InTech-Non_viral_delivery_systems_in_gene_therapy.pdf)
7. <https://www.innovationtoronto.com/2017/06/a-single-gene-therapy-treatment-could-give-life-long-protection-from-severe-allergies-such-as-asthma/>

**23/Feb/2019 - Thank You.The End.**