

CHAPTER I

INTRODUCTION

A. Background

The development of genetics was discussed widely not only in various magazine and scientific books but also in various mass media types. Genetics has many contributions in solving various health problems such as cancer until the possibility to create “a new brave world”, tube baby with restrained genetic constitution or even until regards human species evolution in the future.

Because of its huge potential impact, everyone absolutely needs to have basic science of its knowledge. Only by this way, the meaning and benefits of genetics can be absorbed maximally and man`s role as part of environment in this threatened planet can be understood. Civil people have to know the basic theory of genetics. Before we step further, let`s know the definition of genetics.¹

Genetics is known as inheritance science. It comes from *Genos* (Latin) means tribe or derivation.² In this knowledge, studied how genetic endowment (heredity) was inherited to posterity and also variation that may arise in it. So, genetics explain various human problematic such as man healthy, physical and mental defect, character inherits, until engineers it.

In the history of its development, genetics has been existing

¹ Anna C. Pai, *Dasar-Dasar Genetika: Ilmu Untuk Masyarakat* (Jakarta: Erlangga, 1998), p.xi

² Dr. Wildan Yatim, *Genetika*, (Bandung: Tarsito, 1996), p.1

before 19th century; it's called by pre-Mendel era. Babylonian, 6000 years ago has been arranged the ancestry of their horses in order to make its heritage better. Many years before centuries, China has known the selection to rice in order to look for superior characters on that plant. In America and Europe also did selection and cross fertilization toward wheat and corn that its origin is weeded. But all those things cannot be identified yet as inherit characters on creation.

Then, since Gregor Mendel's (1822 - 1884) discovery, genetics developed as one part of science in Biological study. Mendel successfully observed a genetic endowment (character) from generation to next generation, and to make mathematics count toward that genetic character. Since that time, many discoveries found and genetics developed quickly.³

Every human being brings gen from its ancestral in his cell of sex. The genetic factors that inherited into the next generation are; physical characteristics -i.e. skin color, shape of body, etc.-, characters and behaviors, and diseases. All of those characters started since human in fetus.

In the context of religion, a concept of genetics include in God destiny (*taqdīr*). It has been determined since human in fetus. Although it's something *ghaib* but our prophet also has a horizon about genetic.

³ Dr. Wildan Yatim, *Genetika.....*, p.1-16

Mohammed is the last prophet and messenger. His prophetic becomes the completing of apostolate before him. His *risālah* absolutely has to be kept and maintained because of its function as the guidance for all human problems including *aqīdah's*, *ibādah*, *akhlāq*, and *mu`āmalah* problems.

One of the biggest secret in *Qur`ān* and *hadīth* is prophet sign about nature, its component and phenomenon published in a thousand more *Qur`ānic* verses and prophet traditions. All of that cosmologic signs often used as an argument on God's power that so creative in creating universe and as a proof on Mohammed prophetic.

In order to understand cosmologic verses, firstly, we have to understand it in Arabic frame accurately, from its word (*lafadz*), language styles and *asbāb an nuzūl's* perspectives. As like as *Qur`ān*, to understand cosmologic sign in *hadīth*, that *hadīth* has to be understood by the text using Arabic and its *asbāb al wurūd*^{4,5}.

There are two trends used by scholar in understanding the

⁴ Etymologically, *asbāb* is the plural word of *sabab* which means rope. *Sabāb* also means another liaison. Terminologically, *sabab* means a method to get to the law without giving effect to the law.

Al wurūd etymologically means *al-manāhil* (drinking places) or *al-mā'u turadh alaihi* (water that flow from its original place). So, *asbāb al wurūd* can be defined by the causes or the background of a Hadith arising.

According to As-Suyuti, *asbāb al wurūd* is something that becomes a way or method to determine the purposes of a hadith is general or special, *muthlaq* or *muqayyad* and the presence or absence of *naskh* in a *Hadith*. <http://d-scene.blogspot.com/2011/05/pemahaman-kontekstual-terhadap-hadits.html> on 18/05/2011.

⁵Dr. Zaghlul An Najjar, *Pembuktian sains dalam Assunnah*, (Jakarta: Amzah, 2007), p.9

meaning of *hadīth* deeply, restriction of traditionalist and modernist scriptualism. First group (restriction of traditionalist) limiting on the tradition that they get from classic scholar without seeing on the social reality. And the others, modernist scriptualism not only limiting on that tradition but also compared it with the contexts and social reality. Both also called textual/literal and contextual understanding.⁶

There are also many sciences and knowledge used to give the proof toward *ayat kauniyah*. As like as Qur'an, there are many *hadīth* studies linked with modern sciences. Such as Ibnu Al Qayyim, Ibnu Khaldun and also Yusuf al Qardhawi that studied *hadīth* with science approach. For example *hadīth* related to healthy, economic, and environment. He tried to apply *hadīth* in this era.

Dr. Yusuf Qardhawi is an Islamic scholar who has moderate thinking toward *hadīth*. He tried to interpret *hadīth* contextually. He divided the study of *hadīth* into three kinds; the study about the juridical (*tasyrī*) aspect in *hadīth*, *hadīth* as the source of knowledge, and *hadīth* as the source of civilization.⁷ Even he is not specially study between *hadīth* as source of knowledge and Islamic people culture comparability, but its study constitute that, *hadīth* besides *tasyrī* factor it is also knowledge and civilization source for

⁶Syuhudi Ismail, *Hadits Nabi yang Tekstual dan Kontekstual: Telaah ma`ani hadits yang universal, temporal, dan lokal*, (Jakarta: Bulan Bintang, 2004)

⁷Dr. Yusuf Al Qardawi, *Assunnah Sebagai sumber IPTEK dan Peradaban*, (Jakarta Timur: Pustaka Al Kautsar), p. 3

nowadays and future. He also explain about the correlation between experimental science and the guidance of *hadith* in this problem

Discussing about *hadīth* and science, it's as same as talking about *Qur'ān* and science. Both are the basic of religion. If in *Qur'ān* it is popular with *tafsīr`ilmy`⁸*, it's also in *hadīth*. *Hadīth* as the second basic of Islam mentioned all aspect of life. Although its authenticity still debatable, but its existence can't be separated from religion aspect.

There are three trends used in undrstanding *hadīth* with sciences:

1. Conservative group, refusing sciences used to know the authenticity of *hadīth*. According to them, the authenticity of *hadīth* only can known by the science of *hadīth* (*ulūm al hadīth*) dan it didnt contradicted with its *ulūm*.
2. Extrimist group, receiving sciences to understanding *hadīth* based on sciences. انتم اعلم بامر دنياكم (all of you know about your world matter)⁹, they said that this *hadīth* that talking about *dunyawiyah* must be tested by sciences.
3. Moderat people, they said that sciences can be used to know the authecithy of *hadīth* if it sciences has been agreed by

⁸ Tafsīr Ilmy (scientific interpretation) is an interpretation that more influenced by recent scientific discoveries. See, Muhammad Nor Ichwan, *Tafsir Ilmiy: Memahami Al Qur'ān Melalui Pendekatan Sains Modern*, (Jogja: Penerbit Menara Kudus, 2004), p.125-128

⁹ Muslim, Shahih *Muslim* No. 4358, CD-ROM *Maushū`ah al Hadīth al Syarīf al Kutub al Tis`ah*, Global Islamic Software, 1997.

scientis and didnt changing through all the time.¹⁰

From those trends, writer more tends on moderat people because in order to understand *hadīth*, it has to observe from many aspect. But, if the science cannot prove or contradict with *hadīth*, *hadīth* must be won from science. Beside, science is relative and always develops with new discoveries, so science cannot be the absolute method in understanding the meaning of *hadīth*.

There are also three basic problems that will always be the object of *hadīth* study and discourse continuously: *first*, the problem of existence and authority of *hadīth*, *second*, the problem of authenticity and validity of *hadīth* in Islam, *third*, the problem of method and approach used in understanding *hadīth* textually or contextually.¹¹ One of method that often used in understanding *hadīth* is thematic method -collecting *hadīth* in certain theme-.

Islam is a perfect teaching. Al-Qur'an and *hadīth* as the main guidance manage all life aspect of Muslim, including the heredity of parent's characters toward their child. Islam also teaches us to choose good couple from good family, because beside of environment, man characters also determined by

¹⁰ H. Ali Mushtofa Ya`qub, *Imam Bukhari & Metodologi kritik Dalam Ilmu Hadits*, (Jakarta: Pustaka Firdaus, 1991), p. 33-36

¹¹ The first problem (the problem of existence and authority of *Hadīth*) was product *inkār as sunnah* in one side, and *nashir as sunnah* in other side. Second problem (the problem of authenticity and validity of *Hadīth* in Islam) appearing critique of sanad study (*an naqd al Kharijiy*: extern critique) and critique of matan study (*an naqd ad Dakhil*: kritik intern)

Dr. Moh. Ishom Yoesqi., dkk, *Eksistensi Hadits dan Wacana Tafsir Tematik*, (Yogyakarta: CV Grafika Indah, 2777) p.120

genetic. Allah also prohibits man to do inbreeding (marriage with close family) because genetics declares that inbreeding have big possibility caused abnormality or mental deviation.¹²

In the Islamic context, there are many *hadīth*¹³ those explain many genetic theories, from the beginning of human life to the last human life. For example, *hadīth* narrated by Bukhari about the fetus development:

حَدَّثَنَا الْحُسَيْنُ بْنُ الرَّبِيعِ حَدَّثَنَا أَبُو الْأَحْوَصِ عَنِ الْأَعْمَشِ عَنِ زَيْدِ بْنِ وَهَبٍ قَالَ قَالَ عَبْدُ اللَّهِ
حَدَّثَنَا رَسُولُ اللَّهِ صَلَّى اللَّهُ عَلَيْهِ وَسَلَّمَ وَهُوَ الصَّادِقُ الْمَصْدُوقُ قَالَ إِنَّ أَحَدَكُمْ يُجْمَعُ خَلْفُهُ
فِي بَطْنِ أُمِّهِ أَرْبَعِينَ يَوْمًا ثُمَّ يَكُونُ عَلَقَةً مِثْلَ ذَلِكَ ثُمَّ يَكُونُ مُضْغَةً مِثْلَ ذَلِكَ ثُمَّ يَبْعَثُ اللَّهُ
مَلَكًا فَيُؤَمِّرُ بِأَرْبَعِ كَلِمَاتٍ وَيُقَالُ لَهُ أَكْتُبْ عَمَلَهُ وَرِزْقَهُ وَأَحْلَهُ وَشَقِيَّ أَوْ سَعِيدٌ ثُمَّ يُنْفَخُ فِيهِ
الرُّوحُ فَإِنَّ الرَّجُلَ مِنْكُمْ لَيَعْمَلُ حَتَّى مَا يَكُونُ بَيْنَهُ وَبَيْنَ الْجَنَّةِ إِلَّا ذِرَاعٌ فَيَسْبِقُ عَلَيْهِ كِتَابُهُ
فَيَعْمَلُ بِعَمَلِ أَهْلِ النَّارِ وَيَعْمَلُ حَتَّى مَا يَكُونُ بَيْنَهُ وَبَيْنَ النَّارِ إِلَّا ذِرَاعٌ فَيَسْبِقُ عَلَيْهِ الْكِتَابُ
فَيَعْمَلُ بِعَمَلِ أَهْلِ الْجَنَّةِ (صحيح البخاري)¹⁴

Narrated from Hasan bun Rabi`, narrated from Abu Al Akhwash, from Al A`masy, from Zaid bin Wahb,

¹² http://eprints.ums.ac.id/1452/1/2._AMBARWATI.pdf accessed on 16/05/2011

¹³ As we know that *hadīth* is historical record and also the second source of Islamic teaching after al-Quran. Its existence in Islamic teaching is very urgent. Its role becomes more important when al-Quran did not give a certain decision, so *hadīth* can be a basic law in religion decision. Besides, *hadīth* is applied and actualized in daily life. Therefore, *hadīth* has important role in Islam.

¹⁴ Shahih bukhari, 2969, CD ROOM Al Maktabah Al Syāmilah, Global Islamic Software, 1997, vol.10, p. 485

Abdullah said: "Allah's Apostle, the truthful and truly-inspired, said, "Each one of you collected in the womb of his mother for forty days, and then turns into a clot for an equal period (of forty days) and turns into a piece of flesh for a similar period (of forty days) and then Allah sends an angel and orders him to write four things, i.e., his provision, his age, and whether he will be of the wretched or the blessed (in the Hereafter). Then the soul is breathed into him. And by Allah, a person among you (or a man) may do deeds of the people of the Fire till there is only a cubit or an arm-breadth distance between him and the Fire, but then that writing (which Allah has ordered the angel to write) precedes, and he does the deeds of the people of Paradise and enters it; and a man may do the deeds of the people of Paradise till there is only a cubit or two between him and Paradise, and then that writing precedes and he does the deeds of the people of the Fire and enters it.

From that *hadīth* known that prophet has horizon about genetics, especially embryology. Prophet revealed the characters of fetus. Meanwhile, another *hadīth* explain about the influence heredity toward man character and behavior.

حَدَّثَنَا يَحْيَى بْنُ قَزَعَةَ حَدَّثَنَا مَالِكٌ عَنْ ابْنِ شَهَابٍ عَنْ سَعِيدِ بْنِ الْمُسَيَّبِ عَنْ أَبِي هُرَيْرَةَ
 أَنَّ رَجُلًا أَتَى النَّبِيَّ صَلَّى اللَّهُ عَلَيْهِ وَسَلَّمَ فَقَالَ يَا رَسُولَ اللَّهِ وُلِدَ لِي عُلاَمٌ أَسْوَدُ فَقَالَ هَلْ
 لَكَ مِنْ إِبِلٍ قَالَ نَعَمْ قَالَ مَا أَلْوَأْنَهَا قَالَ حُمْرٌ قَالَ هَلْ فِيهَا مِنْ أَوْزَقٍ قَالَ نَعَمْ قَالَ فَأَتَى ذَلِكَ
 قَالَ لَعَلَّهُ نَزَعَهُ عِزْقٌ قَالَ فَلَعَلَّ ابْنَكَ هَذَا نَزَعَهُ (صحيح البخارى)¹⁵

¹⁵ Shahih Bukhari, no. 4983, see CD ROOM *Al Maktabah Al Syāmilah*, Global Islamic Software, 1997, vol.16, p.359

“Narrated from Yahya bin Quza`ah from Malik bin Abi Syihab, from Sa`id bi Musayyab, from Abi Hurairah, A man came to the Prophet (peace and blessings be upon him) and said, ‘O Allah’s Messenger, a black child has been born for me. The Prophet asked, “Do you have any camels?” The man said, “Yes” The Prophet asked, “What color are they?” The man replied, “Red”, The Prophet asked, “Is there a grey one among them?” The man replied, “Yes”, The Prophet asked, “Whence come that?” The man said, “May be it (color) was pulled out by a hidden trait of heredity.” The Prophet said, “May be your son’s (color) was also pulled out by a trait of heredity.” (Narrated from Al-Bukhari; At-Talak ‘divorce’ book)¹⁶

In other redaction narrated from Ahmad, “A man from Bani Fazarah came to Prophet Muhammad and said, “My wife has borne children swarthy,” it looks like he doesn’t admit it. Prophet stated, “Do you have camel?” That man answered, “Yes.” Prophet asked, “What is its color?” That man answered, “Red.” Prophet asked, “Is there black color on that camel?” That man answered, “Actually blackish. I don’t know from where it’s coming.” Rasulullah stated, “Maybe it caused by heredity factor.” (HR. Ahmad)

Those *hadīth* defined that genetic factor influenced skin color. Physical characters not only endowed from parents but also from ancestral.

¹⁶ It’s also narrated in Shahih Muslim (18/1500), Sunan Abi Dawud (2260), Sunan An Nasa’i (2434), Sunan at Tirmidzi (2094), Sunan Ibnu Majah (2003), Sunan Al Baihaqi (16918), and *musnad* Imam Ahmad (6892).

Two conclusions can be drawn from those *hadīth*. First, the Prophet indicated that the laws of heredity are similar between man and animals. Second, a characteristic which becomes hidden (recessive) for several generations may appear again in the future. This would be in complete agreement with the present knowledge of the laws of heredity.

An idiom العرق دساس (child characters inherited from parent's characters) also found in *hadīth*:

أخبرنا أبو محمد عبد الرحمن بن عمر التميمي ، أبنا أحمد بن محمد بن زياد ، ثنا أحمد بن محمد بن بكر بن خالد بن يزيد ، ثنا أبي محمد بن بكر بن خالد بن يزيد ، ثنا عبيد الله بن العباس بن الربيع الحارثي ، من أهل نجران اليمن بعرفات ، ثنا محمد بن عبد الرحمن البيهقي ، عن أبيه ، عن ابن عمر قال : سمعت رسول الله صلى الله عليه وسلم يقول وهو يوصي رجلا : « يا فلان أقل من الدين تكن حرا ، وأقل من الذنوب يهن عليك الموت ، وانظر في أي نصاب تضع ولدك فإن العرق دساس » (مسند الشهاب القضاعي¹⁷)

For this phenomenon, the researcher tries to search more about the matter that collaboration between interpretation of *hadīth* and sciences, which focusing on the Biology under the title “Scientific Indications of Genetic Theory in *Hadīth* (A Thematic Study)”. I hope that it can inspire deep meaning towards never ending scientific miracle of *hadīth*.

¹⁷ Al Qudha'i, *Musnad Asy Shihab Al Qudha'i*, no. 599, bab: *fainna al ir'q dassasun*, CD-ROM *al Maktabah al Syamilah*, Global Islamic Software, 1997.

B. Research Question

Regarding the study, problems that may come around are:

1. Is there any scientific indication of genetic theory in *hadīth*?
2. What is the scientific indication of genetic theory in *hadīth* and its correlation with modern science of genetics (Biology)?

C. Aim and Significance of Research

The aims of this research are:

1. To know whether there is the scientific indications of genetic theory in *hadīth*
2. To know the correlation between the concept of genetics in *hadīth* and modern science of genetics (Biology)

While the Significant of research are:

- This research is expected to give a practical value in thinking based on prophet tradition (*hadīth*) totally and comprehensively for the researcher especially and for all human being generally.
- This research is also expected to give contribution in developing study about *hadīth* and also enrich new discourse in religiousness especially Islam, understanding *hadīth* with modern science.

D. Prior Research

There are many books that tell about genetics and its theory,

such as:

A book of Harun Yahya under the title “*DNA secret*”.¹⁸ In his opus, he talked more about the secret of DNA as a data bank that brings the characteristic of heredity. In this book he revealed some fact about the creation with *Qur’ānic* verses that shows God authority.

Human Genetics written by Ricki Lewis.¹⁹ This book taught us about genetic principles. It explains all about the basic of genetic from its definition, history, development, and all concepts of genetics according to biology sciences. It also gives some application of genetics in human life.

*The Genetics God, Evolution and Belief in Human Affairs*²⁰ written by John C. Avise and translated in Indonesian under the title *The Genetic Gods (Tuhan-Tuhan Genetis): Kuasa Gen atas Takdir Manusia*. This book revealed many scientific discoveries in genetic science and the influence of gen toward human life. He also explained many genetic discoveries including its challenges that presented toward religion, philosophy, and human morality. How human being with their technology tried to change their genetic in order to make their life better. It also makes many scientists didn’t believe on God and more glorified on modern science.

¹⁸ Harun Yahya, *DNA secret, diterjemahkan Rahasia DNA: Kebenaran Yang Diungkap Proyek Genom Manusia*, 2003, Jakarta: Dzikra

¹⁹ Lewis Ricki, *Human Genetics: Concept and application*, (New York: Mc. Graw Hill, 2005).

²⁰ John C. Avise, *The Genetics God, Evolution and Belief in Human Affairs*, (Harvard University Press, 2007)

*Rahasia dan Hikmah Pewarisan Sifat (Ilmu Genetika dalam Al Qur'ān)*²¹ written by Prof. Dr. Ir. Ronny Rachman, M.Rur.Sc. and Prof. Dr. Ir. Kudang Boro Seminar, M.Sc., This book explains about the theories of genetic such as theory of Mendel, theory of evolution, theory of selection, theory of Darwin, genetic engineering theory, etc. related to its basic of science in *Qur'ān*. This book also give proof from genetic perspective toward *Qur'ānic* verses such as prohibition in incest (married with close family), prohibition in eating pork, etc. so, genetic used to found the wisdom behind the *Qur'ānic* verses.

Al I'jāz al Ilmy fī As Sunnah An Nabawiyyah written by Dr. Zaghul An Najjar, and translated in Indonesian under the tittle *Pembuktian Sains dalam As Sunnah*²². The book describes many hadith related to modern science and one of them is about the influence of ancestral genes, combined with modern genetics.

Beside some books, there are also some academic writing as paper and also thesis. It is "*Tes Dna (Deoxyribo Nucleic Acid) Sebagai Alat Bukti Hubungan Nasab Dalam Perspektif Hukum Islam*"²³. This research intents to describe and look for the answer to happening phenomenon gets over the year, it is DNA test. This research used fiqh approach.

²¹ Dr. Noor Rahman Roni, dkk, *Rahasia dan Hikmah Pewarisan Sifat (Ilmu Genetika dalam Al Qur'ān)*, 2010, Bandung: IPB Press

²² An Najjar, Dr. Zaghul, *Pembuktian Sains dalam Sunnah*, 2007, Jakarta: Amzah.

²³ Muhtarom, Ali, *Tes Dna (Deoxyribo Nucleic Acid) Sebagai Alat Bukti Hubungan Nasab Dalam Perspektif Hukum Islam*, 2009, Yogyakarta:Fakultas Syariah UIN Sunan Kalijaga Yogyakarta

*Scientific Interpretation Of Surah Al Insān: 2 About Sex Determination On Fetus*²⁴ written by Dzikrullah Zulkarnain also explain about genetics especially about the sex determination according to *Qur'ān*.

Seeing from the prior research above, the researcher come to the conclusion that there is no a study about genetic based on *hadīth* perspective comprehensively, starting from study of *sanad*²⁵, *matan*²⁶, historical background till the understanding *hadīth* with modern sciences. Therefore, in this case the researcher still needs to pursue the previous research.

E. Research Method

a. Type of Research

Type of research that used by the researcher in this research is qualitative research, and it can be grouped in observational bibliographical (library research). And the method

²⁴ Dzikrullah Zulkarnain, *Scientific interpretation of Surah Al Insan: 2 about sex determination on fetus*, 2010, Semarang: Fakultas Ushuluddin IAIN Walisongo

²⁵ Etymologically, the word sanad means something that we make as basis. Thus, the sanad means the lineage of *rawi* that quote hadith from the first source. See, Drs. Munzier Suparta, M.A., *Ilmu Hadits*, (Jakarta: PT Raja Grafindo Persada, 1993), p.45-46

²⁶ Etymologically, the word Matan means the rising ground. Terminologically, this term is a sentence that being the end of sanad. Or in other redaction, *lafadh* Hadith which is contains a specific meaning. So the meaning of sanad is the materials or *lafadh* of hadith. See, Drs. Munzier Suparta, M.A., *Ilmu Hadits*, (Jakarta: PT Raja Grafindo Persada, 1993), p46-47.

used in this research is thematic method²⁷ –collecting some *hadīth* that have correlation toward the theory of genetic and analyzing it.

Hasan Asy`ari Ulama'i in his book *Metode Tematik Memahami Hadīth Nabi SAW* also explains systematic step in understanding *hadīth* thematically, its TKS, T {*Tentukan* (certaining) *dan Telusuri* (investigating)}, K {*Kumpulkan* (collecting) *dan Kritisilah* (criticizing)}, and S {*Susun* (arranging) *dan Simpulkanlah* (concluding)}.²⁸

This thematic study will be easily understood if we use another science approach; therefore the understanding of *hadīth* is not limited in prophet era but also for the problem nowadays and future.

To know the validity and authenticity of *hadīth*, researcher will use some method compiled by *muhaddistūn*, such as the continuity of *sanad*²⁹, all narrator must be '*adīl*³⁰ and *dlabīr*³¹, and most dodge from *syuzūz*³² and *illar*³³.

²⁷ It is necessary when there many *hadīth* that look like in contradiction. If we understand partially, it will cause disparity even religion separation. One of the ways to solve it is by using thematic method comprehensively on the certain theme. See Hasan Asy`ari Ulama'i, *metode tematik memahami hadis nabi*, PUSLIT IAIN Walisongo Semarang, 2009. P. 5

²⁸ Ulama'i, Dr. Hasan Asy`ari, *Metode Tematik Memahami Hadits Nabi SAW*, 2009, Semarang: PUSLIT IAIN Walisongo, p.68

²⁹ Regarding the concept of interconnectedness of this sanad, Al-Bukhari said that a sanad is considered to be continued if it meets the following criteria: first, *al Liqā`*, means the existence of a direct linkage between one narrator with next narrator, proved by the existence of an meeting action between the students who heard directly from his teacher. Second, *al mu`āsyarah*, occurs same life time between teachers and students. While Muslims, with the more flexible concept of interconnectedness requires *sanad* only on the aspect of *al mu`āsyarah*.

So the method that used by researcher is thematic method by collecting hadith about genetics, classifying, and analyzing it.

Another aspect of *sanad* interconnectedness, is about the symbols and methods of narration (*shigat al tahammul `wa al ada`* (activities of receive and impart some Hadith)), See, Kamaruddin Amin, *Menguji Kembali Keakuratan Metode Kritik Hadith.....*, p.19-23.

³⁰ Etymologically the word *`adil* means the middle, straight, inclined to the truth. In the terminology of *Hadith* sciences, there are several definitions of the proposed by *`ulama*. Al-Hakim and al Naisaburi said that it was conceived as a Muslim, do not bid *`ah* and immorality that could undermine morality. Ibn Salah said that narrator called *`adil* if he is a Muslim, baligh, intelligent, nurturing morality (*muruhah*) and do not *fasiq*. Meanwhile, Ahmad M. Shakir added one more element that is credible news. See Kamaruddin Amin, *Menguji Kembali Keakuratan....*p.24

³¹ In etymology, *dhabit* means to keep something. While terminologically, *ulama` hadith* give the different definition. Al Sharkhasi said that *dhabit* means the level of intellectual capabilities and excellence in the admissions process and understand in depth the meaning of the contain, maintain and memorize as much as possible until the time of deployment of Hadith to the others. See, Umi Sumbullah, *Kritik Hadith Pendekatan Historis metodologis*, (Malang:UIN Malang Press,2008), p.64-65

About the term *syadz* on *sanad*, there are three opinions in the science of Hadith terminology such as:
 First, the opinion of ash Syafii he said that the *hadith* called *syadz* if the *hadith* that narrated by a *tsiqqah* narrator contradicted to the hadith narrated by a number of which also *tsiqqah*.
 Second, the opinion of al-Khalili, stated that *syadz* is if a *hadith* only has one lane, whether it is narrated by *tsiqqah* narrators or not, either contradictory or not.
 Third, an Naisaburi's opinion. *hadith* *syadz* is if its *hadith* narrated by a *tsiqqah* narrator and there are another *tsiqqah* narrators. According to Ismail Asy Syafii, the third opinion is more used by *hadith* scholars.

While *syadz* on *Matan hadith* is defined as a conflict or *riwayat* unconformity of a narrator with the stronger narrator in memorize and remembrance. Its unconformity is in the *matan* quoted, until resulting in the addition, subtraction, change of place (*maqlub*) and various forms of weakness and other disabilities. See, Umi Sumbulah, *Kritik Hadith Pendekatan Historis Metodologis.....*, p.70-71 and 103

³³ Illat is a hidden causes which can damage the validity of *hadith*. In *sanad* aspects, Ibn Tamiya stated that *hadith* which contains illat is *hadith* which its *sanad* outwardly looks good, but after examined there are many *Galt* narrators (did many mistakes), *isnad mauquf* (only up to the companions) or *mursal* (only history from *shahabat*), even there are the possibility of entry of another hadith in these Hadiths.

While the definition of *illat* on *matan* is a hidden reason contained in the *hadith* that made *Matan* looks authentic, either in the form of the entry of another Hadith but its often conflict with *nash-nash* that has stronger accuracy. See, Umi Sumbulah, *Kritik Hadith Pendekatan Historis Metodologis.....*, p.73 and 108.

Meanwhile, the approach that is utilized is by scientific approach especially genetic in biology. Scientific approach used to know the correlation between the theory of genetic in biology and *hadīth*.

b. Source and method of collecting Data

This research is a library research because the data which the researcher uses (either primary or secondary data) is a book. The data collected by researcher include: genetic concept in biology views and scientific indication of genetic theory in *hadīth*.

i. Primary source

The primary data in this research will be taken from *hadīth* book and its interpretation. it will be taken from *kutub al Hadīth* especially *kutub at tis`ah* (Shahīh Bukhari³⁴, Shahīh Moslem³⁵, Sunan at Tirmidzi³⁶, Sunan An Nasa`i³⁷, Sunan Abi

³⁴ *Al Jami` Al Musnad Al Shahih Al Mukhtashar Min Umur Rasulillah Wa Sunanih Wa Ayyamihi* or more popular with *Shahih al Bukhari* is a book of *Hadīth* collection of Imam Bukhari, contents of 8.122 *Hadīth*. According to *ulama` junhur hadits* this opus is the most *shahih* book after *Al Qur`ān*.

³⁵ *Shahih Muslim* with its origin tittle, *Al Musnad Al Shahih Al Mukhtasar Min Al Sunan bi Naql Al Adl An Rasulillah*, many schoolar agreed that this book the best book in carefulness in using sanad. It contains of 7.273 repeated and unrepeated a*Hadīth*.

³⁶ His name is *Abu Isa Muhammad Ibn Isa Ibn Tsurah Ibn Musa Ibn Dhahak Al Sulami Al Bughi Al Tirmidzi*, he is the author of *Al Jami` Al Mukhtasar min Sunan `an Rasulillah* or more popular with *Sunan At Tirmidzi*.

³⁷ *Abu Abd Rahman Ahmad Ibn Syuaib Ibn Ali Ibn Sinan Ibn Bahr Al Khurasani An Nasa`i* is thhe author of *Sunan Al Kubra* or *Sunan An Nsa`i*. beside his opus he also wrote many books, such as: *Sunan Al Mujtaba`, Musnad ili, Musnad Malik, Kitab Ad Dhuafa*, dsb.

Dawud³⁸, Sunan Ibn Majah³⁹, Musnad Ahmad⁴⁰, Muwattho ibnu Malik's⁴¹, and Sunan ad Darimi) and another compilation *hadīth* book.⁴²

Second, researcher also will use some genetic books such as *Human Genetics* written by Ricki Lewis and another books that talk about the concept of genetics in order to get new understanding in *hadīth*.

ii. Secondary source

Meanwhile, the secondary data gathered from variety literature which works through about genetics. And also some discourse supporting genetics science such Journal, magazine, newspaper, and internet such as; www.almaktabah.net, <http://en.wikipedia.org>, and other information that contributed

³⁸ *Imam Abu Dawud Sulaiman Ibn Al Asy`ats ibn Ishaq Al Sijistani*, with his opus *Sunan Abi Dawud* is the popular muhaddith. *Kitab sunan* that has been arranged according to its theme such as thaharah, zakat, shalat, etc. Contains of 4800 a*Hadīth*.

³⁹ *Abu abdillah Ibn Yazid Ibn Majah* with his popular opus *Sunan Ibnu Majah* is the best book in arranging the title and sub-title.

⁴⁰ He is more popular as *ahli fiqh* than *ahli hadits*. *Abu abdillah Ibn Muhammad Ibn Hanbal Al Marwazi* is the author of *Musnad Al Kabir*. This Musnad arranging according to the name of *shahabah*, therefor its difficult to find out *Hadīth* according to its theme.

⁴¹ Muwaththa Ibnu Malik, its author is Imam Abu Abdillah Malik Ibn Anas Ibn Abu Amir Ibn Amir Ibn Harits, he is a faqih, the leader of madzhab Malkiyyah. Its book not only contains of *Hadīth* but also the opinion of shahabat, and tabiin about islamic law.

Drs. Munzier Suparta, M.A., *Ilmu Hadits*, (Jakarta: PT Raja Grafindo Persada, 1993), p.235-251

⁴² Many books of *Hadīth* that can be references in *Hadīth* research, such as: kutub as sunan, kutub musnad, kutub al jami`, kutub al *Hadīth* fi al fiqh, kutub al *Hadīth* fi at tafsir, etc.

Dr. Hasan Asy`ari Ulama`i, *Membedah Kitab Tafsir-Hadits Dari Imam Ibnu Jarir Al Thabari Hingga Imam Al Nawawi Al Dimasyqi*, Semarang: Walisongo Press, 2008), p.10-11.

to the topic.⁴³ The researcher also never misses dictionary book that explains about certain *hadīth*, such as *Lisān al Arab*, *al Munawir*, etc.

c. Analysis

The techniques of analyzing data that used are:

First, collecting a certain *hadīth* about genetic and its theory in *hadīth* book.

Second, classifying those *hadīth* according to its quality with inserting *syarah hadīth* and *asbāb al wurūd* if there are.

Third, reading those *hadīth* with the scientific approach -to know scientific indication of genetic theory in *hadīth* and its correlation with modern science of genetics (Biology)-.

F. Writing Systematic

Writing systematic of this research is below:

Chapter I, this chapter is a group of foreword of the research, consists of background, formulation of problem, significance of research, theoretical framework, methodology of research and writing systematic.

Chapter II, this chapter is the discussion around the basis research of theories. It's containing of the explanation about genetics, from its definition, the application of genetics in human

⁴³ In the collecting data, this approach called with documentation method. See, Suharsimi Arikunto, *Prosedur Penelitian; Suatu Pendekatan Praktik* (Jakarta: Bina Aksara., 1987) P 188.

life, the development and concept of heredity, and also about behavioural genetics

Chapter III is discussing about genetics in Islam especially in *hadīth* with inserting the quality. This chapter describes the redaction of *hadīth* followed by analysis of sanad and analysis of matan aspects in terms of linguistics and its relationship with Qur`an.

Chapter IV is elaborating more the concept of genetics in the *hadīth*, explaining comprehensively those *hadīth* using scientific approach, to know scientific indication of genetic theory in *hadīth* and its correlation with modern science of genetics (Biology).

Chapter V is the chapter consisting of conclusion and suggestion for the next research.