Advancements in Genetic Engineering
ISSN: 2169-0111

Jiaxue and Ping, Adv Genet Eng 2015, 4:3
DOI: 10.4172/2169-0111.1000139

Short Communication Open Access

Decode Gene Sequence to Guide Daily life

Jiaxue H*1 and Ping Y2

[1]*School of Pharmaceutical Science, Tianjin University, Beijing, China*

[2]*Jiaxue Gene Medical Technology, Beijing, China*

***Corresponding author:** Jiaxue Huang, School of Pharmaceutical Science, Tianjin University, Beijing, China, Tel: 010-52802096; E-mail: jiaxue@gmail.com

Rec date: Aug 22, 2015; **Acc date:** Oct 08, 2015; **Pub date:** Nov 08, 2015

Short Communication

Wisdom and monetary invest flushed into genetic sequencing and decoding of factors involved in temporally and spatially unfolding of zipped information in the form of nucleotide sequencing, primary, secondary and tertiary structures complicated by RNA regulation, protein modification and epigenetics. Although there are still decades or even hundreds of years ahead to make a claim that we already crack all the codes to build a life from materials like elements, small organics and inorganics, the understanding from gene sequencing already brought promise to change a daily life. Application of these essential information is still limited to entrepreneurs with academic perspectives and optimistic belief in the determination power of genetic sequencing. An overall exploration of what genetic sequencing can bring to our daily life definitely can promote the commercialization of genetic progress therefore transform into a driving power to push the research and application of life mechanism decoding.

Decode Gene to Deliver Hope to Otherwise Hopeless Family with Genetic Disease

The modern health system provides solutions to diseases caused by infection, shortage of nutrition and mechanically understood diseases. However, chronic, systematic, multi-factorial, rare but intractable diseases still dampen carrier's hope for active and enjoyable life, which also brings insurmountable economical and psychological burdens to the victims and their families. Technology development in gene sequencing and genetic analysis provides clear dissectible mechanism analysis to symptomically similar but genetically heterogeneous diseases, and provides clues for novel therapies which have never been thought to be a feasible medicine to these medically unmet diseases.

Muscular dystrophy is a genetically heterogeneous disease. The genetic sequence variation might affect nervous system and muscular components. Even functional compromise and defects in muscular components can be attributed to more than 30 genes and their intergenic sequences. Considering genes involved in nervous system that affect motor movement, the disease is subjected to more than one thousand causative DNA sequence variation. However, without genetic diagnosis tool, muscular dystrophy can only be classified into 5 classes by sharing similar phenotypes. Genetic diagnosis not only identifies the underlined gene sequences but also provides a new approach for molecular based disease classification. New classification is partly consistent with currently accepted methods, but provides more details about mechanism and how we can provide effective therapy. More importantly, new classification can predict the onset of yet unrevealed complications, provides more potential for physically and medically interventions. Genetic analysis pinpoints muscular dystrophy patients to extra-large molecules, cytokines or enzymes that might be ectopically expressed. Small molecules and drugs that are used to treat other diseases might also be used to compensate the compromised function caused by different variants which can be identified by chip array and next generation sequencing. This differentiates muscular dystrophy treatment into a variety of personalized methods utilizing Chinese medicine, isozyme induction, agonist activation etc. to achieve alleviation or even complete heal of the complex and serious syndrome.

In the past decade, the advancement of gene correction gave encouragement of gene decoders and will accelerate the utilization of the mechanism deciphering via gene decoding. With host immune response to the viral vectors reduced, the size of targeting gene inserts more flexible and an array of viral vector serotypes available to accurately target tissues specifically, gene therapy based on adeno-associated virus (AAV) transfer are showing exciting promise in treating genetic diseases. Clustered regularly interspaced short palindromic repeat (CRISPR)-associated system (Cas) have been widely used to modify genes in model animal zygotes and human cells, holding the promise to correct the abnormal sequence and eradicate the causal source of genetic disease, although efforts to reduce off-target cleavage, improve the efficiency are still pressing to be achieved. With techniques improved, precise replacement of disease causing gene sequence will eradicate the disease from the source and bring hope to otherwise hopeless family by decoding their genes first.

Decode Gene to Increase Survival Rate of Cancer Patients

With intensive research in cancer biology and therapy development, dramatic progress has been achieved, cancer is still the major morbidity cause for non-accidental death. The reason why cancer is so difficult to handle has been widely reviewed. Housekeeping gene mutations make it unrecognizable to immune system, error-proof mechanism is destroyed to accelerate accumulation of interrupted growth and differentiation processes. Early identification of cancer-driven gene sequence variations help initiate cancer cell cleaning system by strengthened immune response specific to tumor initiation changes, surgical removal of precancerous cell mass to avoid unsurmountable heterogeneous genetic chaos in cell tissue. Furthermore, researches from various groups suggest a signature description by extensive sequencing of tumor tissue help identify tumor driven genes, classify patients sensitive to available compounds, or provide precise genetic information to design more effective, less side effect antibody based therapies.

Decode Gene to Eradicate Serious Diseases from Family by Finding Your Perfect Marriage Mate?

What really dampens a family's common daily life is that serious diseases keep inflicting every member of one generation. By zygote forming principles, a set of genes within a generation is completely decided by dad and mom's genomes. Once dad decided to marry a pretty to form a family, the genetic components in their descendants are limited to sets of combinations. Every aspect of physiologic functions have at most three combinations, once the both parties of couple is determined, whether their kids are healthy or not at a certain aspect is almost unchangeable. What do you wish to have for your marriage? To be with your soulmate forever" for better for worse, for richer for poorer, in sickness and in health, to love, honor, and cherish, 'til death do us part." The oath might be strengthened by a healthy combination of genetic makeups, or destroyed by serious defective genetic outcomes. We do see couples with three babies dead at early age still kept their marriage oath, we also see couples seek religious support after kids with medically unmet genetic diseases. Although science hold the tenet that spiritual relationship should be supported, before tight relationship was formed, a soulmate with correct genetic makeup might be more preferable to the family and society. In addition to this, with genetic analysis, a couple with good will might find caring for their spouse with genetic information will be more considerate or in most cases in the correct time and occasions.

With advent of any new technology that will change the basic concept of essential life events, a chaos of ethical issues might be generated in certain populations, which also prompt examination of the new technology and old ideas. For the utilization of genetic advisory in marriage and family forming, ethical issues from the point of views in relationship development, spiritual and emotional ties, and even the prejudice to physically and genetically handicapped persons might create unhuman feelings or even actions to the minor populations. Due to the profound impact and the complexity of effects on various aspects, it might be too early to provide an ultimate solution, the application and constant examination of personal feeling and society impact will inspire us to solve even the subtle obstacles that prevents us from being a better life and society. With respect to having the right to live a quality life for every human being, the ethical issues and technical obstacles will be addressed one way or the other.

Decode Your Gene to Bring More Happiness to Your Kids' Childhood

What we can do to help our kids? When young dad and mom wait in the delivery room, they begin to think, act to make the best of the delicate baby. They may admire a movie star, may regret not getting into Harvard University in US, or Peking University in China. What they really worry, hope or admire may project into what they do to create an environment for their kids. Kids, which is receptive for what is prepared may be led into very frustrating, ineffective or even destructive road for their development and growth. When a cute, self-confident girl is required by social admiration or common sense to learn skiing, while her genetic predisposition make her not so delicate in balancing. Three times failure in passing the first stage training is enough to destroy her any dignity in the face of her peers to be proud and confident. A self-motivated kid good at all his/her subjects except that bad handwriting in home-work and class assignments always feel embarrassment if attention is always applied. Consistent pressure to ask uncontrollable hands to make smooth drawing in handwriting may make a perfect kids lose any joy in academic job. Genetic decoding reveals various secrets behind our daily life. For kids, we know that the genetic combination from dad and mom make him or her unique in their capabilities. This uniqueness promote geneticist to apply the idea that every kids have their own opportunity to excel and keep their personality. By genetic analysis, gene decoders can identifying the gene sequence variations which confer the kids different ability in psychologic balancing, occasion recognition, short or long term memory, subtle movement regulation, forming the basis of innate talent genetic evaluation. Combining critical disease genetic predisposition genetic analysis, innate genetic talent test in the view of physiologic functions to evaluate what a kid is good or not so good at, might be a scientific method to justify personalized education.

Scientific evidence accumulate that kids varies in their personality and character, and genetic backgrounds explain the consistent behavior signatures. Without professional training, parents project self-conscious understanding and set the rules which is always against what kids feel comfortable. With genetic information and scientific behavior decoding, parents and education professionals will be easier to accept that what is really good for the kids is to let the kids develop under its biologic condition which is set by its complete genome sequence.

Although products and services are available in China, US, Japan and Europe, the status of commencements, the complexity of packaging life information into linear DNA sequence and interaction among human subjects, environment and active educations make the any elements of application of genetic decoding controversial. The biological implication of only a tiny part of the gene sequence and the still undiscovered entangling regulations via distance, protein-DNA interaction, RNA-DNA interaction, and temporal epigenetic changes on binding elements and nucleotide itself still leave most of life as secrets. Finding solutions to almost any one of currently life-limiting disease is still demanding to gene decoders world-wide. Consideration of emotions, dignity, respect, confidence and resolution to succeed in a dedicated direction also requires us to combine the biological interpretation of gene sequence with multifactorial effects.

However, since genetic sequence is the basic information to have development, growth, physiologic functions and pathogenesis programmed, the effective treatment for genetic diseases, personalized education and optimization of marriage to prevent disease dissemination still drive the researchers to decode human genomes comprehensively and accurately. The information gained will help improve gene decoding and provide daily life guidance more reliable. With decreasing cost of sequencing and comprehensive understanding of decoding, education, marriage, serious disease and cancer treatment will be revolutionized to help we enjoy a more harmonious and healthy life.