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# DNA Testing and *Nafyu al-Nasab*: A Comparative Study of Ali Jum'ah's Fatwa and Its Socio-Legal Implications in Global Jurisdictions

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## ABSTRACT

This article analyzes the existence and juridical status of DNA testing in the determination (*ithbāt*) (establishment of lineage status) and negation (*nafy*) (denial, annulment, or rejection of lineage relationship) of lineage within the framework of Islamic family law through the perspective of the fatwas of Ali Jum'ah. The rapid development of forensic genetic technology has challenged the classical *Fiqh* framework, which traditionally recognizes *liʿān* (as the only legitimate mechanism for denying lineage). This study aims to reassess the relevance of Ali Jumʿah's legal reasoning in the contemporary context by comparing legal approaches in Indonesia, selected Middle Eastern countries, and Western jurisdictions. This research employs a juridical-normative approach combined with comparative legal analysis and socio-legal perspectives. The study analyzes authoritative literature, fatwas of Islamic institutions, statutory regulations, and selected judicial decisions related to paternity determination and denial. The findings demonstrate that Middle Eastern legal systems generally recognize DNA evidence as *qarīnah qawiyyah* for verifying lineage but reject its use for *nafyu al-nasab*, consistent with Ali Jumʿah's fatwa. Indonesia adopts a moderate approach, allowing DNA as corroborative evidence for determining biological relations but not as an independent basis for denying nasab in Islamic law. In contrast, Western legal systems treat DNA evidence as the primary determinant of paternity regardless of marital status. This study contributes to the development of an integrative framework for Islamic family law reform, proposing that DNA testing should function as strong corroborative evidence within a *maqāṣid al-sharīʿah* (Objectives of Shariah) framework that prioritizes the protection of lineage (*ḥifẓ al-nasab*), family stability, and the rights of the child.

Keywords: Ali Jum'ah, DNA forensics, Islamic Family Law, *Liʿān* , Nafyu al-Nasab.

## ABSTRAK

Artikel ini menganalisis eksistensi dan kedudukan yuridis tes DNA dalam determinasi (*ithbāt*) (penetapan status nasab) serta negasi (*nafy*) (penyangkalan, peniadaan, atau penolakan hubungan nasab) nasab dalam bingkai hukum keluarga Islam melalui perspektif fatwa Syekh Ali Jumʿah. Akselerasi teknologi genetika forensik telah menghadirkan tantangan signifikan terhadap kerangka epistemologi fikih klasik yang secara tradisional menempatkan *liʿān* (mekanisme sumpah saling melaknat antara suami–istri karena tuduhan zina atau penyangkalan nasab) sebagai satu-satunya mekanisme legal-formal dalam penyangkalan genealogis. Penelitian ini bertujuan untuk merevaluasi relevansi nalar hukum (ratio legis) Ali Jumʿah dalam konteks kontemporer melalui studi komparatif atas tipologi pendekatan hukum di Indonesia, beberapa negara Timur Tengah, serta yurisdiksi Barat. Penelitian ini mengadopsi pendekatan yuridis-normatif yang diintegrasikan dengan analisis hukum komparatif serta perspektif sosio-legal. Kajian dilakukan melalui telaah kritis terhadap literatur otoritatif, fatwa lembaga keagamaan, regulasi perundang-undangan, serta yurisprudensi pengadilan terkait sengketa penetapan dan penyangkalan paternitas. Temuan penelitian menunjukkan bahwa sistem hukum di negara-negara Timur Tengah umumnya mengklasifikasikan bukti DNA sebagai *qarīnah qawiyyah* (indikasi kuat) untuk verifikasi nasab, namun menolak otoritasnya dalam konteks *nafy al-nasab* (penyangkalan atau pembatalan hubungan keturunan), selaras dengan parameter fatwa Ali Jumʿah. Indonesia mengadopsi pendekatan moderat dengan memposisikan tes DNA sebagai bukti pendukung (corroborative evidence) dalam determinasi hubungan biologis, namun belum diakui sebagai basis independen untuk membatalkan nasab dalam hukum Islam. Sebaliknya, sistem



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hukum Barat menempatkan validitas biologis hasil tes DNA sebagai determinan utama paternitas tanpa terikat pada status perkawinan. Penelitian ini memberikan kontribusi pada rekonstruksi kerangka integratif bagi reformasi hukum keluarga Islam dengan mengusulkan reposisi tes DNA sebagai instrumen pembuktian yang kuat dalam kerangka *maqāṣid al-sharīʿah* (tujuan-tujuan fundamental syariat) yang memprioritaskan proteksi keturunan (*ḥifẓ al-nasab*), stabilitas institusi keluarga, serta perlindungan hak-hak fundamental anak.

Kata kunci: Ali Jum'ah, DNA Forensik, Hukum Keluarga Islam, *Liʿān* , Penyangkalan Hubungan Ayah-Anak.

## INTRODUCTION

The development of science and technology has presented new challenges to the understanding of Islamic law, especially in sensitive issues related to family, identity, and *nasab* (Ismail & Agustina, 2021; Moeinifar & Ardebeli, 2012). DNA testing, as one of the most revolutionary instruments in biological identification, has changed the way society understands the concepts of truth, blood relations, and legitimacy (Jayadi et al., 2019). In the contemporary social context, the global community increasingly associates the authenticity of family relationships with scientific facts, while Islamic law has long associated the validity of *nasab* with the legal institution of marriage and *shari'i* (in accordance with Islamic law or religious legal legitimacy) mechanisms such as *li'ān* (mutual oath of condemnation between spouses in cases of adultery accusation or denial of paternity/lineage) (Aslati et al., 2024). This tension between biological facts and normative legitimacy, if not understood moderately and proportionately, has the potential to create social confusion, legal conflicts, and even theological tensions between groups of Muslims.

An overly textual understanding of nasab and *nafyu al-nasab* (denial of nasab) can result in a rigid, rigid attitude, and close the space for dialogue between sharia and scientific progress (Altınoğlu, 2018; Saeed & Akbar, 2021). This can be seen from some religious groups that reject all forms of scientific evidence in family matters on the grounds of the sanctity of the classical *Fiqh* system, while other groups accept DNA as absolute evidence that can invalidate the provisions of Islamic law without limitation. These two extreme poles have the potential to cause disharmony, polarization of thought, and legal uncertainty, especially when society faces sensitive cases such as infidelity, inheritance disputes, the determination of a biological father, or the annulment of fate after divorce (Fahrudin et al., 2022). In many cases in society, the conflict between biological truth and legal truth is not just an academic debate, but can threaten household stability, break down social relations, and open up opportunities for criminalization or discrimination.

In the context of contemporary Islamic legal practice, the *fatwa* (a non-binding legal opinion or religious ruling) of Sheikh Ali Jum'ah, the former Mufti of Egypt, is the most powerful illustration of such tensions (Fahrudin et al., 2022). Ali Jum'ah emphasized that DNA tests should not be used to deny *nasab* because denial is only valid through the mechanism of *li'ān*, a well-established *shari'i* provision based on the hadith *al-walad li al-firāsh* (a prophetic legal maxim meaning "the child belongs to the lawful marital bed," establishing lineage through marriage). This fatwa is rooted in the principles of *maqāṣid al-syarī'ah*, especially *ḥifẓ al-nasl* (care of offspring) and *ḥifẓ al-'irḍ* (care of honor). However, this position has caused widespread debate, as DNA technology is scientific evidence that is globally considered to have a high level of accuracy. It is this epistemological tension that makes this topic not only a *Fiqh* (Islamic jurisprudence) debate but also an arena of encounter between religious authorities, the development of forensic science, and the demands of contemporary justice.

Indonesia, as a country with two intertwined legal systems, Islamic law and national law, provides a complex space for analysis. The Constitutional Court Decision No. 46/PUU-VIII/2010 marked a major shift in the acceptance of civil relations between children out of wedlock and biological fathers, including through DNA evidence (Azizah, 2018). However, religious courts still maintain the separation between *shari'i* and biological *nasab*, so that DNA results do not necessarily affect the provisions of inheritance and filiation in Islamic law. This creates a duality between biological legitimacy and sharia legitimacy in the Indonesian legal system, as well as raises questions about substantive justice for children born out of wedlock.

The use of DNA technology in criminal identification and non-family cases has grown rapidly in Middle Eastern countries such as Egypt, Jordan, and Morocco, where DNA profiling is widely used for the investigation of cases of rape, murder, terrorism, and mass disasters, and is supported by a legal framework that integrates modern forensic methods into the justice system (Sahu et al., 2024; Srivastava, 2022). However, the application of this technology in family law remains very limited due to the strong influence of traditional Islamic principles, especially the rule *of al-walad li al-firāsh,* which stipulates that the status of the father is determined by the marriage bond, not by mere genetic facts (Guénon, 2018). Although a number of family law reforms have been undertaken, such as new codifications in Morocco and Jordan (Engelcke, 2019), these changes have not been sufficient to shift the reliance on classical *Fiqh* principles in the determination of paternity (Nasir et al., 2024). Instead, the Western legal system applies an approach that relies on biological truth as the basis of legitimacy. DNA tests are widely used to determine a child's paternity, custody, alimony responsibilities, and even legal status. Despite this, the Western system still has flexibility, as in the case of erroneous recognition of paternity that can still be defended in the best interests of the child. Thus, biological orientation is not always absolute; It remains negotiated with social and ethical principles.

Among these three regions, it appears that the issue of *nasab* is not just a biological or legal issue, but a meeting point between religious, technological, cultural, and political legal values. The difference in approach indicates that the integration of DNA evidence into Islamic family law requires a more comprehensive theoretical framework, especially from the perspective of *maqāṣid al-syarī'ah*, which is able to balance the authenticity of the text, social needs, and the demands of modern technology. Based on this context, this study has three main objectives: (1) Critically analyze the position of DNA in Islamic family law through the perspective of the fatwa of Sheikh Ali Jum'ah; (2) Comparing the relevance of DNA acceptance in the legal systems of Indonesia, the Middle East, and the West; and (3) Develop a *maqāṣid al-shari'ah*-based framework of thought to present an integrative model between forensic technology and Islamic family law that is responsive to contemporary developments. This research employs a juridical-normative approach combined with comparative legal analysis and socio-legal perspectives. The study analyzes authoritative literature, fatwas of Islamic institutions, statutory regulations, and selected judicial decisions related to paternity determination and denial.

Despite the growing body of scholarship on DNA testing in Islamic jurisprudence, several limitations remain in the existing literature. Most studies focus either on the doctrinal compatibility between DNA evidence and classical *Fiqh* or on the legal reforms of specific Muslim countries. Few studies have systematically examined the fatwa of Shaykh Ali Jumʿah as a central analytical framework while simultaneously comparing its legal relevance across different legal traditions, particularly between Indonesia, the Middle East, and Western jurisdictions. Therefore, there remains a significant gap in understanding how Ali Jumʿah's epistemological approach to DNA evidence can be contextualized within diverse legal systems and how it may contribute to

contemporary debates concerning the right to identity, child protection, and legal certainty in family law. This study addresses this gap by developing a comparative socio-legal analysis that integrates classical *Fiqh* reasoning, contemporary fatwas, and modern forensic technology within a *maqāṣid al-sharīʿah f*ramework.

## RESEARCH METHOD

This research employs a juridical-normative approach combined with comparative legal analysis and socio-legal perspectives (Fahrudin et al., 2022). The juridical-normative approach is utilized to examine classical *Fiqh* doctrines, contemporary fatwas, statutory regulations, and judicial interpretations concerning *nasab* and the use of DNA evidence (Kosasih et al., 2024). Through this approach, the study analyzes the normative structure of Islamic law while also considering how the development of modern forensic genetic technology influences the legal discourse surrounding the determination and denial of lineage within family law. The study relies on three main categories of legal materials. First, primary legal sources, which include Qur'anic verses (related to the Qur'an or derived from the Qur'an), *hadith* (Prophetic traditions or reports of the sayings, actions, and approvals of Prophet Muhammad), classical *Fiqh* texts, fatwas issued by authoritative Islamic legal institutions, and relevant judicial decisions, including the Indonesian Constitutional Court Decision No. 46/PUU-VIII/2010 concerning the civil relationship between children born outside marriage and their biological fathers. Second, secondary legal sources, consisting of academic journal articles, legal commentaries, and contemporary studies addressing Islamic family law and the development of forensic DNA technology. Third, comparative legal materials, including statutory regulations and judicial practices from Indonesia, selected Middle Eastern countries such as Egypt, Jordan, and Morocco, as well as Western legal jurisdictions.

The comparative framework of this study is structured around three analytical variables. The first variable concerns the evidentiary status of DNA testing in determining or denying paternity. The second variable examines the interaction between biological truth and legal legitimacy within family law systems. The third variable addresses human rights considerations, particularly the child's right to identity and legal protection. These variables enable a systematic comparison of how different legal systems reconcile scientific evidence with established normative legal frameworks. The collected materials are analyzed qualitatively using doctrinal legal analysis and socio-legal interpretation. The analysis focuses on identifying similarities, differences, and normative tensions between classical Islamic jurisprudence, contemporary fatwas, and modern legal practices regarding the use of DNA evidence in family law disputes, particularly in matters related to the determination and denial of *nasab*.

## RESULTS AND DISCUSSION

### Application of the Use of DNA Tests in Determining Children in the Perspective of Global Scientists

DNA tests have become a very important scientific instrument in determining kinship relationships, especially paternity, and have been used extensively in forensic, biomedical, as well as population research contexts. The development of molecular technologies such as *Short Tandem Repeat* (STR) and *Polymerase Chain Reaction* (PCR) has significantly improved the accuracy of genetic analysis. STR is a genetic marker that has a high level of polymorphism and many alleles, making it very effective for establishing the probability of biological relationships.


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STR loci such as CSF1PO, TH01, TPOX, and vWA are international standards that are consistently used in paternity analysis due to their high discriminating capabilities (Zhang et al., 2019). On the other hand, PCR techniques allow for precise amplification of DNA fragments, including when DNA samples are limited, degraded, or derived from complex biological issues (Syaifudin et al., 2020). Various studies, including on non-human organisms such as fish, have shown that the combination of STR and PCR is able to produce up to 100% accuracy of paternity identification with a 95% confidence rate, thus strengthening the validity of this method in the study of cross-species kinship relationships.

In addition to high accuracy, mutation analysis at the STR loci is an important aspect to ensure the reliability of the results. Studies have shown that mutations that appear in paternity tests are generally one-step mutations, with a tendency to occur more in the paternal than maternal pathways. This information is important in interpreting allele mismatches that may arise and preventing erroneous conclusions regarding the exclusion or inclusion of paternity. Thus, understanding the dynamics of STR mutations contributes directly to the improvement of interpretive safety in forensic and medical practice. The application of DNA testing is not limited to paternity, but also includes forensic identification, lineage tracing, criminal investigations, and mass disaster victim identification efforts. In Indonesia, the strengthening of STR-based genetic databases has been proposed to support kinship analysis between siblings and improve the quality of national forensic services. However, this development raises ethical and legal dilemmas, especially regarding genetic privacy, individual rights, and the potential misuse of biological data. Some countries have strict regulations, some even proposing a total ban on commercial DNA testing without the approval of probands or legal guardians, such as the discourse in Japan that scrutinizes the risk of invalid results and the psychological and social impact on families. This shows that DNA testing is not just a technical issue, but also has significant moral and regulatory implications (Toya, 2017).

From a practical perspective, DNA testing offers a number of advantages such as very high biological certainty, support for the resolution of legal cases, validation of family relationships in the context of adoption or immigration, as well as contribution to the personalization of medical care based on genetic information (Furqoni et al., 2021). However, challenges remain, including the need for ethical consent, sensitivity to the psychological impact on the individual being tested, as well as the importance of education for the public to understand the test results correctly and not to use them for purposes that could damage family relationships (Toya, 2017). Awareness of the risk of misinterpretation or irresponsible use of results underscores the need for strict procedural standards and policy frameworks that favor individual protection.

Global scientists use a wide variety of methods in DNA testing (as shown in figure 1), essentially utilizing techniques of amplification, identification, and analysis of genetic sequences. The most common methods are Polymerase Chain Reaction (PCR) (Syaifudin et al., 2020), both conventional PCR to amplify specific DNA fragments, *nested PCR* to increase sensitivity and specificity such as in the detection of *Toxoplasma gondii* and *real-time PCR (qPCR)* which allows direct DNA quantification and is widely used in the diagnosis of infectious diseases such as HIV (Mahalakshmi et al., 2006; Pan et al., 2007). Other techniques such as PCR-ARMS are used to detect specific mutations, for example in the β-thalassemia mutation study in Egypt (Mahalakshmi et al., 2006). In addition, DNA barcoding through COI gene sequencing has become the standard method for species identification and genetic diversity analysis of various organisms (Jayadi et al., 2019). Isothermal amplification alternatives such as Recombinase Polymerase Amplification (RPA) (Škevin et al., 2025) and Loop-Mediated Isothermal Amplification (LAMP) offer faster processes

and do not require PCR machines, making them suitable for pathogen DNA detection or species identification under limited conditions. In the realm of genetic research, DNA sequence analysis is used for the characterization of mutations and the arrangement of phylogenetic trees to map genetic relationships between species. These methods have wide applications, ranging from infectious disease diagnosis, species identification, genetic conservation, to evolutionary research. Despite offering high sensitivity and specificity, these techniques still face challenges such as the need for adequate laboratory facilities as well as the potential for contamination or technical errors that could affect the accuracy of the analysis results.

Figure 1 illustrates the main scientific methods used in contemporary DNA testing, including Polymerase Chain Reaction (PCR), Short Tandem Repeat (STR) analysis, DNA barcoding, and isothermal amplification techniques. These methods demonstrate the high level of accuracy achieved by modern genetic identification technologies and explain why DNA evidence has become a central instrument in contemporary legal systems.

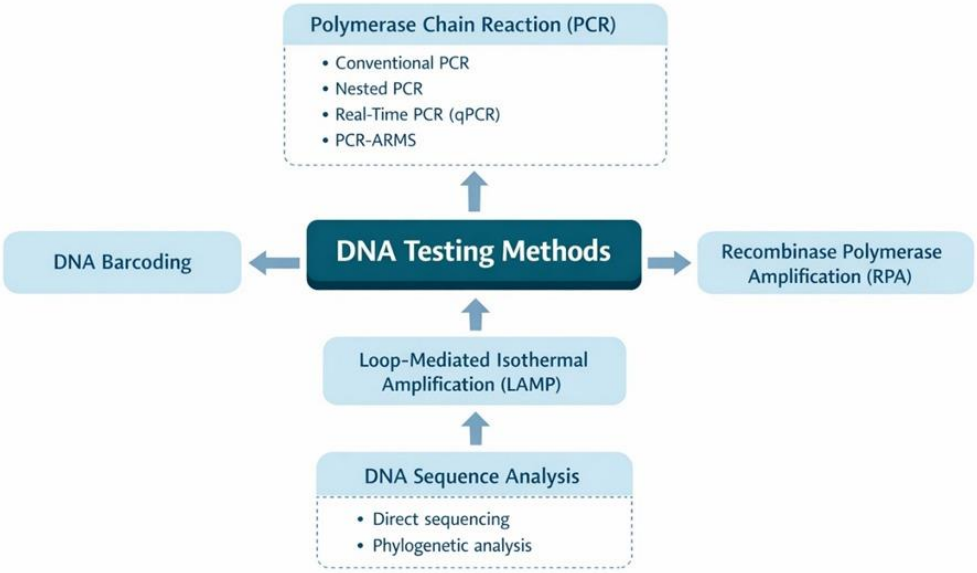


**Figure 1. DNA Test Methods among Scientists**

The use of DNA tests in the determination of children in the perspective of Islamic law in Indonesia is a complex issue because it involves the interaction between sharia norms, national regulations, and religious judicial practices. Religious courts formally refer to the Compilation of Islamic Law (KHI) as the basis for resolving family disputes, including paternity (Sofiana & Sunni, 2021). However, the KHI's position as a Presidential Instruction makes it a relatively weak source of law and poses limitations in accommodating modern technological developments such as DNA testing (Lutfi & Muallim, 2021). In recent decades, DNA tests have begun to be introduced as scientific instruments that can strengthen or weaken claims of paternity, thus opening up space for the integration of forensic methods into Islamic family law. However, the acceptance of DNA tests is still a debate among scholars. A number of international Islamic legal institutions such as the Islamic Organization for Medical Sciences and the International Islamic *Fiqh* Academy have examined the position of DNA tests in determining and rejecting nasab, emphasizing the need for a balance between scientific precision and sharia prudential principles, especially with regard to *the rules of al-walad lil firâsy* and the protection of family stability (Shabana, 2013).

In litigation practice, religious courts in Indonesia often show administrative bias in deciding cases, so the use of DNA tests has not always been a substantive consideration in paternity disputes (Nasution & Nasution, 2021). This shows that there is a gap between the normative potential of DNA tests as a modern means of proof and its implementation in the field. Legal ambiguity is also seen in the case of a pregnant marriage, where the child is still considered legitimate as the husband's child even though he is not biologically descendant and without a DNA test. This norm shows the sustainability of the classic principle of child legitimacy, but at the same time raises questions about its relevance in the age of genetic technology. Overall, the application of DNA testing in Indonesian Islamic law still requires refinement at the level of *Fiqh* epistemology, judicial regulation, and national legal policy (Sofiana & Sunni, 2021). Although DNA testing offers an objective evidentiary mechanism and can clarify paternity disputes, its acceptance and application require comprehensive adjustments to remain in line with *maqâṣid al-syarî'ah*, family protection, and legal certainty

## Epistemological Foundations of *Nafyu al-Nasab* in Classical and Contemporary *Fiqh*

The epistemological foundation of the denial of nasab (*nafyu al-nasab*) in Islamic law is built on the main principle of family jurisfi, namely the rule of *al-walad li al-firāsh* that the child belongs to the owner of the bed (Fadel, 2022). This rule, which comes from the hadith of the Prophet, is a normative stipulation that cannot be overturned by other evidence, even scientific evidence. The fatwa of Shaykh Ali Jum'ah emphasizes that if a husband has recognized a child in a valid marriage contract, then the nasab becomes certain (*tsābit*) and cannot be rejected in any way, either because of suspicion of the wife's behavior or because of medical evidence such as DNA. In the fatwa text, it is stated: *"Denying nasab after an invalid confession... and relying on genetic fingerprint (DNA) analysis to deny that nasab is not permissible under sharia because the analysis still contains the possibility of human error."* Thus, *Fiqh* stipulates that nasab is normatively determined by *akad* and *firāsh*, not by biological relationships alone.

In classical jurisprudence, the scholars of the four schools have a consistent framework regarding the denial of *nasab*. They agreed that the only mechanism for denying *nasab* is *li'ān*, which is an oath of intercourse between husband and wife when a husband accuses his wife of adultery without four witnesses (Yilmaz, 2017). This mechanism is not just a procedure but, at the same time, an epistemological device that affirms that the denial of *nasab* is a very heavy matter and can only be done through *shari'i* statements that have great moral and legal implications. The jurists, such as Malik, Shafi'i, Ahmad, and a number of companions, are of the opinion that if the husband is silent at the time of birth, even though he is able to deny, then he has the right to deny miscarriage. Ali Jum'ah quoted the opinion of Qadli Qudāmah: *"If a woman gives birth and her husband is silent without denying it when he is able to do so, then she can no longer deny it afterwards."* This shows that in the epistemology of *Fiqh*, the silent act that takes place at an important moment is considered *taqrir* (confession), so that the scientific evidence that comes later cannot abort it. Imam Shafi 'i even emphasized that the assessment of the ability to deny nasab is based on the normal habits of the community, not on extraordinary special events.

Contemporary scholars maintain this normative framework even though DNA technology has been able to provide almost absolute biological certainty. The basic principle is that *biological truth* must not overthrow *normative truths* born of *akad* (binding legal contract), *shari'a*, and *maqāṣid*. Therefore, according to the fatwa of Ali Jum 'ah, DNA should only be used to establish *nasab* (*itsbāt*), not to deny. The fatwa states: *"The determination of nasab through DNA is not valid except in a valid marriage contract where there is no mixing of nasab. If there is a mix, then the*

*mixing is stronger than DNA."* The use of DNA is allowed in situations that do not have normative consequences for the family structure, such as babies being exchanged in hospitals, the identification of disaster victims, the determination of the identity of unknown corpses, or children whose fate is unknown from the beginning. Thus, the role of DNA in family *Fiqh* is a complement, not a transfer of authority.

In maqāṣidī, the *Fiqh*'s rejection of the use of DNA in the denial of nasab rests on three principles: *hifẓ al-nasab* (safeguarding lineage), *hifẓ al-'ird* (safeguarding honor), and *hifẓ al-usrah* (safeguarding family stability) (Fadel, 2022). The receipt of DNA to cancel the fate of a child has the potential to open the door to slander, degrade the dignity of women with accusations of adultery based on laboratories, and damage the family order. Scholars are of the view that even scientific certainty should not disturb the social stability maintained by the rules *of al-walad li al-firāsh*. In *Fiqh*, nasab is not just a genetic relationship, but a moral, social, and legal institution that has an impact on inheritance, guardianship, honor, and family identity. Therefore, even though DNA has a high level of accuracy, it is still considered to be at the *zann* level (strong suspicion) due to the potential for technical and human error in sampling and analysis, as stated in the fatwa: *"Since medical analysis contains the possibility of human error... this belief still leaves conjectures so that the DNA report is unable to deny the fate."*

Methodological problems arise when classical texts are confronted with modern biomedical technologies. *Fiqh* uses normative epistemology, while science works with empirical epistemology. In the epistemology of jurisprudence, the *syar'i* argument is higher than the empirical argument. The presence of DNA technology creates a dilemma between biological certainty and normative stability. If DNA is used as the main standard of denial, then the entire structure of *Fiqh nasab, talaq*, inheritance, and honor will change radically. Contemporary scholars such as Ali Jum'ah, Yusuf al-Qaradawi, and Majma' al-*Fiqh* al-Islāmī agree that accepting DNA as a means of denial will lead *to biological reductionism* to reduce the meaning of *nasab* to mere biological relationships, whereas Islam considers nasab as an institution of worship and social welfare. Therefore, the methodology of *Fiqh* chooses a middle ground: accepting DNA as a very powerful tool for *itsbāt*, but not allowing it to replace the normative framework *of firāsh* and *li'ān*. Thus, modern jurisprudence maintains an epistemological continuity between classical traditions and contemporary needs.

## The Convergence of Bio-Genetics and Jurisprudence: DNA Evidence, Human Security, and the Child's Right to Identity

The contemporary discourse on DNA testing within the framework of *nafyu al-nasab* (denial of lineage) has transcended the traditional boundaries of theological debate, evolving into a critical issue of international human rights (Haneef, 2016; Shackel et al., 2025; Steadman & Wagner, 2020). From a human rights perspective, the determination of lineage is inextricably linked to the "Right to Identity," as enshrined in the United Nations Convention on the Rights of the Child. This right asserts that every child possesses an inherent entitlement to know their biological origins and to receive legal recognition of their personal status. In this context, the denial of access to biological truth through the rejection of DNA evidence does not merely uphold a classical procedural doctrine but potentially creates a state of "legal liminality" or psychological uncertainty for the child. Such uncertainty has profound implications for *Human Security*, affecting the child's access to inheritance, guardianship, and social legitimacy, which are essential for their well-being and dignity in a modern state.

Theoretically, integrating DNA forensics into Islamic family law can be analyzed through a progressive reinterpretation of *Maqāṣid al-Sharīʿah* (Athi, 2007; Hermawan et al., 2025). While Shaykh Ali Jumʿah's fatwa prioritizes *ḥifẓ al-nasab* (protection of lineage) by maintaining the sanctity of the marital bond and preventing frivolous accusations of adultery, a socio-legal critique suggests that true protection is achieved by aligning legal status with biological reality (*al-ḥaqīqah al-bayūlūjiyyah*). If the law ignores empirical genetic evidence to preserve the procedural formality of *liʿān* , it may inadvertently violate the principle of *al-maṣlaḥah al-mursalah* (public interest) by disenfranchising the child. Therefore, a balanced approach is required one that recognizes the forensic accuracy of DNA as a tool to fulfill the *Maqāṣid* objective of establishing justice and preventing harm (*dar' al-mafāsid*) to the most vulnerable party: the child.

A comparative analysis reveals a sharp divergence in how this human rights-science-religion nexus is managed across global jurisdictions. In the Middle East, legal systems largely mirror Ali Jumʿah's cautious stance, where DNA is welcomed for establishing lineage but strictly restricted in cases of denial to protect social honor (*al-'ird*) (Islamy et al., 2025). However, this often results in a "socio-legal paradox" where the child's right to identity is sacrificed to maintain communal morality. In contrast, Western jurisdictions operate on a model of "Biological Truth," where DNA evidence serves as the absolute determinant of paternity regardless of the parents' marital status, prioritizing individual rights over institutional sanctity. Indonesia, meanwhile, offers a unique middle path; through landmark rulings like the Constitutional Court Decision No. 46/PUU-VIII/2010, the state has begun to shift its paradigm from a purely formal-procedural approach toward a more substantive-protective one. By allowing DNA to prove biological ties for out-of-wedlock children, Indonesia demonstrates a burgeoning commitment to human security, acknowledging that the biological truth is a fundamental component of a child's constitutional right to a dignified identity. This comparative landscape highlights the urgency of a moderated legal approach that is capable of balancing scientific evidence, religious principles, and human rights considerations. Such moderation is necessary to prevent extreme positions either rigid rejection of scientific evidence or unrestricted reliance on biological determinism while ensuring that the protection of lineage (*ḥifẓ al-nasab*), social stability, and the fundamental rights of the child can be harmonized within a coherent legal framework (Kosasih et al., 2024).

## Analytical Study of Ali Jum'ah's Fatwa: Principles, Evidentiary Standards, and Limits of DNA in *Nafyu al-Nasab*

The fatwa of Sheikh Ali Jum'ah (as shown in table 1) regarding the use of DNA in the case of nasab shows a very careful argumentative construction and based on the framework of classical jurisprudence (Fahrudin et al., 2022). Fundamentally, Ali Jum'ah refuses to position DNA as *qarīnah qath'iyyah al-dalālah*, i.e. evidence whose meaning is certain and does not contain the possibility of error. According to him, DNA is at the level *of qarīnah qawiyyah*, a strong indication that can support proof in certain contexts but remains in the territory of *zannī* (conjecture). This was confirmed in the fatwa when he stated that DNA analysis "contains the possibility of human error" and therefore "the results still leave a conjecture in its evidence so that it is not able to deny the fate". This phrase shows that according to Ali Jum'ah, DNA has never reached an epistemological degree that defeats the rules of sharia that are *qath'I,* such as *al-walad li al-firāsh*. In the ushul theory, the evidence that is still conjectural cannot defeat the qath'i nash, even though the level of DNA error is technically very small (see Table 1). Thus, the position of DNA in its epistemological structure is a *strong but non-determinative qarīnah*.

**Table 1. Principles of Determination and Denial of *Nasab* According to Shaykh Ali Jum'ah and Its Legal Implications**

| No. | Original Arabic Text | English Translation | Legal Implications |
|---|---|---|---|
| 1 | نفيُ النسبِ بعد الإقرارِ لا يكونُ معتَبَرًا. | Denial of *nasab* after a confession is not considered valid. | Nasab that has been recognized by the husband cannot be canceled for any reason after that; Children are still considered legitimate children according to sharia and law, even if there are doubts or new biological evidence. |
| 2 | اطِّلاعُ الزوجِ على سوءِ سلوكِ زوجتِه الذي كان خائفًا عليه لا يمكنه من نفيِ النسبِ الثابتِ من قبل. | The husband's knowledge of the bad behavior of his wife cannot be used to deny the pre-fixed *nasab*. | Alleged cheating, bad behavior, or moral "*syubhat*" of the wife cannot be the basis for canceling nasab. Nasab remains attached as long as there is a valid marriage and there is no *Liʿān* . |
| 3 | الاعتِمادُ على البصمةِ الوراثيةِ المعروفةِ باسم "DNA" في نفيِ النسبِ لا يجوزُ شرعًا حيث إن التحاليلَ يعتريها الخطأُ البشري المحتمل. | Relying on DNA to deny nasab is not permissible under sharia because it still contains the possibility of human error. | DNA tests cannot be evidence of *nafyu al-nasab*. The judge cannot revoke the legal child's fate only based on the results of the DNA test. *Nasab syar'i* is stronger than biological evidence. |
| 4 | إثباتُ النسبِ بالبصمةِ الوراثيةِ لا يكونُ إلا في عقدٍ صحيحٍ لم يتمَّ اللعانُ فيه بين الزوجين، فإن تمَّ اللعانُ فاللعانُ أقوى من البصمةِ الوراثية. | The determination of nasab through DNA is only valid in a legal contract that does not occur *Liʿān* ; if there is *Liʿān* , then *Liʿān* is stronger than DNA. | DNA can be used to determine nasab under normal conditions, but when *Liʿān* occurs, then *Liʿān* cancels nasab and defeats the DNA result. *Liʿān* is the highest *shari'a* evidence in the dispute of *nasab*. |

One of the important contributions of this fatwa is the sharp distinction between the use of DNA for *nafy al-nasab* (denial of nasab) and *itsbāt al-nasab* (determination of nasab). Ali Jum'ah strongly rejects the use of DNA as a basis for rejecting children in a legal marriage bond. He stated that "denying nasab after a confession is invalid" and that DNA reports cannot deny nasab because it does not produce a certainty that rivals *tsubūt al-firāsh* (legal establishment of marital lineage). On the contrary, he opened up the space for the use of DNA for *itsbāt*, which is the determination of nasab when there is no *firāsh* or when there is a condition *of ḍi'ā' al-ansāb* (mixing of nasab), such as a baby being swapped, identification of war victims, loss of identity of a corpse, or the case of a child whose fate is unknown from the beginning. The fatwa states that DNA can be used "in disputes of unknown nasab... or cases of missing children, mistaken babies, and identification of

corpses". This distinction shows that Ali Jum'ah did not reject science, but placed it proportionately according to the framework of *Fiqh*: DNA is valid for determination, but does not have the authority to overturn a nasab that has been legally valid according to the shari'i. In addition, Ali Jum'ah established a number of strict conditions and restrictions on the use of DNA, reflecting the prudence of the shari'i (*iḥtiyāṭ*) in matters related to honor, family, and heredity. The strictest limitation is the prohibition of making DNA the only evidence in the denial of fate. This is because the denial of *nasab* in *Fiqh* can only be done through *the mechanism of li'ān*, not through technical evidence. The fatwa affirms that the silence of the husband at the time of birth is the determination of the *nasab*, and after that, he cannot deny it again despite the presence of scientific evidence, as mentioned in the phrase: "The silence of the husband at the time of birth... is proof of the determination of *nasab*".

In *Fiqh* methodology, this means that scientific evidence does not have the ability to invalidate established *shari'i* evidence. Another condition is the prohibition of using DNA when there is a possibility *of mixing the nasab*, because "mixing is stronger than DNA". That is, if the social structure gives rise to ambiguity, biological evidence is not enough to provide legal certainty. In terms of *istinbāṭ* (legal reasoning) methodology, this fatwa combines four approaches: *qiyas* (analogical reasoning), *sadd al-dharā'I* (blocking harmful means), *maqāṣid al-syarī'ah*, and *Fiqh al-waqi'* (contextual jurisprudence). The *qiyās* approach is seen when Ali Jum'ah equates DNA with *other qarīnah* that is zannī, so that it cannot defeat nash qath'i. Meanwhile, *sadd al-dharā'i* appears in his argument that accepting DNA as a basis for denial will open the door to great harm, such as adultery, family rifts, and nasab disputes. In the context of maqāṣid, he defended three major goals: *hifẓ al-nasab*, *hifẓ al-'ird*, and *hifẓ al-usrah*. The three demand that nasab not be played with by biological claims that can cause social disruption. On the other hand, *Fiqh al-waqi'* (Contemporary Fiqh) can be seen in Ali Jum'ah's acceptance of DNA in the case of mistaken babies, identification of corpses, and disappearance of children, situations that do require modern technology and do not have classical *Fiqh* solutions. Thus, this fatwa is not purely textualist, but combines classical principles with contemporary needs without going beyond the limits of *maqāṣid* and *nash* (authoritative text).

## The Tension between Biological Truth and Legal Legitimacy in Indonesian, Middle Eastern, and Western Perspectives: A Critical Analysis

The legal acceptance of DNA testing in the context of Islamic family law shows a very diverse spectrum in Indonesia, Middle Eastern and Western countries, reflecting a fundamental difference between the orientation to biological truth and to the normative-religious legitimacy of the law. In Indonesia, the concept of *ḥifẓ al-nasl* (protection of *nasab*) has become an important principle in marriage contracts, reflecting the combination of Islamic law and the state legal system (Mustamam et al., 2025). This principle has traditionally emphasized the legitimacy of nasab through the marriage bond, but has evolved to include reproductive rights and legal certainty in marriage contracts (Mustamam et al., 2025). The most significant change came through the Constitutional Court Decision No. 46/PUU-VIII/2010, which opened the space for children out of wedlock to have a civil relationship with their biological father through scientific evidence, including DNA tests. However, the results of the DNA examination must still be strengthened with other evidence before it becomes the basis for the judge's determination, which shows juridical prudence and unwillingness to make DNA the sole determinative evidence. The legitimacy of the judiciary in Indonesia is influenced by Islamic culture, which tends to be more sympathetic than

the more repressive approach of the central government. This cultural influence encourages the application of rehabilitative punishment for minor narcotics offenses, reflecting a blend of religious values and legal practice (Mustafa, 2021). However, the legitimacy of court rulings, particularly in sensitive cases such as blasphemy, is often questioned due to the magnitude of the influence of religious authorities and mass organizations, which demonstrates the complexity of the relationship between law, religion, and politics (Tyson, 2021).

In contrast, Middle Eastern countries adopted a more restrictive position due to the dominance of traditional *Fiqh* principles, in particular the rule *of al-walad li al-firāsh,* which stipulates that children belong to a legal marriage bed (Fathullah & Abduh, 2022). Consequently, DNA tests cannot be used to deny a *nasab* that has been legally established through marriage. The legal debate in Morocco was a notable example when the Tangier Court accepted biological relationships based on DNA tests, but the decision was later overturned because it was not in accordance with the Sharia normative framework, which does not automatically associate biological relationships with legal status. In this region, DNA is more widely used in the criminal realm, such as the identification of victims and perpetrators, while filiation cases are still controlled by the boundaries of *Fiqh*.

In contrast to these two regions, the Western legal system places the principle of biological truth as the main basis for determining paternity, so that DNA tests become a central instrument in determining the legal relationship between father, mother, and child (Rodríguez, 2023). The marital status of the parents does not determine the legitimacy of the child, because the validity of the relationship is determined more by genetic scientific evidence. The Western system has also developed the idea that DNA testing can serve as a public policy instrument in the distribution of child support and the prevention of paternity fraud, although this discourse faces ethical challenges such as privacy and bodily autonomy issues. This comparison shows that Indonesia and the Middle East seek to maintain harmony between religious values and the legal order in determining *nasab*, while the Western legal system is more oriented towards biological certainty, although it still considers ethical and social aspects. Thus, each legal system negotiates the position of DNA testing differently, depending on its legal purpose, whether to maintain the sanctity of the family institution, enforce biological certainty, or protect the welfare of the child.

The selection of Indonesia, the Middle East, and Western jurisdictions is based on their distinct legal traditions and epistemological approaches to family law. Indonesia represents a hybrid legal system combining Islamic law and national legislation. Middle Eastern countries largely reflect classical *Fiqh* traditions embedded in state legal systems. In contrast, Western jurisdictions rely primarily on scientific evidence and civil law principles in determining paternity. This diversity provides an appropriate comparative framework for examining the legal and epistemological implications of DNA testing in *nasab* disputes.

## Towards a Harmonized Framework: Implications for Reforming Islamic Family Law in Indonesia and Beyond

Efforts towards a harmonized legal framework in the determination and denial of *nasab* require careful integration between DNA testing as a modern evidentiary instrument and fundamental Sharia principles. In the perspective of *maqāṣid al-syarī'ah*, the use of biogenetic technology is acceptable as far as it supports the protection of nasab (*ḥifẓ al-nasab*), justice, and the welfare of the family. Therefore, the integration of DNA tests in the determination or denial of nasab should not be carried out absolutely, but in a measurable manner as *qarīnah qawiyyah* that

complements, not replaces, the principle *of al-walad li al-firāsh* and *the mechanism of li'ān*. Indonesia needs a reconstruction of Islamic family law that balances scientific certainty with procedural justice, especially considering the legal structure that is still supported by the Compilation of Islamic Law, which is not a formal law. Such reforms can be directed at the establishment of explicit provisions on genetic proof, judicial guidelines, and judicial operational standards that are in harmony with *maqāṣid* while being responsive to contemporary scientific demands.

A comparative framework model that blends fatwa authority, state regulation, and biomedical developments is the most realistic option for bridging the gap between normative approaches and practical needs in courts. Countries such as Egypt and Morocco have been more advanced in incorporating the views of clerics as well as legislation tools that allow for the controlled use of DNA, while Western jurisdictions rely on scientific evidence as the primary basis for determining paternity. Indonesia can take advantage of this hybrid model by making fatwas an ethical-normative reference, while national legislation provides legal certainty and technical procedures. Such a framework not only strengthens judicial consistency but also provides the necessary scientific and Sharia legitimacy in the case of *nasab* disputes.

In the long run, the integration of DNA in Islamic family law has far-reaching implications for child protection, family stability, and the clarity of biological identity. The accountable use of DNA tests can prevent uncertainty in children's status, increase public trust in religious court decisions, and strengthen family legitimacy through certainty of blood relations. At the same time, the principle of sharia prudence prevents the misuse of genetic evidence that could damage the honor of the family or open up opportunities for criminalization based on biological information. Therefore, the harmonization between sharia, biomedical technology, and the state legal system is an urgent need for Islamic family law reform, both in Indonesia and in other Muslim countries, in response to increasingly complex social and scientific changes.

Sheikh Ali Jum'ah's view provides a strong normative foundation for the idea of harmonization between sharia principles and the use of DNA tests in *nasab* cases (Fahrudin et al., 2022). In his fatwa, Ali Jum'ah emphasized that the DNA test can function as *a strong indication of qarīnah qawiyyah* but not stand-alone evidence in determining or denying *nasab*. He rejects the absolute use of DNA to deny children when it is contrary to *the rules of al-walad li al-firāsh* and the mechanism *of li'ān*, but at the same time recognizes the authority of biomedical science as an important tool for achieving substantive justice and reducing errors in the determination of nasab. This moderate approach is in line with the principles of *maqāṣid al-syarī'ah* which attaches importance to the protection of nasab, family honor, and social welfare. Thus, the proposed harmonized legal framework that integrates scientific proof, *shari'a* prudence, and state regulation directly reflects Ali Jum'ah's *ushuliyah* reasoning model that balances between text, reality, and scientific progress.

Furthermore, Ali Jum'ah's view strengthens the argument that Islamic family law reform, especially in Indonesia, needs to accommodate the development of DNA technology in a controlled manner. He emphasized that modern technology can be adopted as long as it remains within the limits of sharia ethics, does not open up opportunities for manipulation of *nasab*, and does not disturb the stability of family institutions. This approach resonates with the needs of Indonesian religious courts, which are facing the complexity of paternity cases and demand more accurate and consistent standards of proof. By adopting Ali Jum'ah's mindset that combines fatwas, state legislation, and biomedical technology, Indonesia can develop a system that is not only sharia-

legal, but also scientifically credible and judicially effective in handling *nasab* cases in the modern era.

## CONCLUSION

The overall analysis shows that the application of DNA technology in Islamic family law is at a point of tension between biological truth and legal legitimacy derived from Sharia principles. In Indonesia and Middle Eastern countries, the mechanism for determining and denying *nasab* is still largely determined by the traditional normative framework, especially the rules *of al-walad li al-firāsh* and the concept *of ḥifẓ al-nasl* as part of *maqāṣid al-syarī'ah*. Shaykh Ali Jum'ah's fatwa emphasizes this position by rejecting the use of DNA as the basis of *nafyu al-nasab* and only allowing it in the context of identity determination that is not related to marital disputes. Meanwhile, Indonesia shows a more flexible dynamic through the Constitutional Court Decision No. 46/PUU-VIII/2010, but still maintains the limits of sharia in family law, so that the DNA results have not fully determined the status of the *nasab* and its derivative rights. In contrast, the Western legal system places biological truth as the primary foundation in the determination of paternity and related rights, while still providing room for ethical considerations and the interests of the child.

A comparison of these three regions shows that the integration of DNA in family law is not only a matter of forensic technicality, but also a matter of values, legal traditions, and social structure. Indonesia and the Middle East seek to maintain family stability through a normative-religious approach, while the West prioritizes biological certainty and individual rights. The main conclusion is that the harmonization between Islamic science and family law requires a more progressive approach to *maqāṣid*, one that is able to accommodate scientific accuracy without neglecting moral values, child protection, and the integrity of family institutions. Future research should explore the empirical application of DNA evidence in religious courts, particularly through case-based studies examining judicial reasoning in *nasab* disputes. In addition, interdisciplinary research combining Islamic legal studies, forensic science, and human rights perspectives would provide deeper insights into how emerging genetic technologies may reshape Islamic family law in the future.

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