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Dog Components in Vaccines; Jurisprudential Verses, Ḥādīṡ and 'Ulamā' Distinctive Perspective

Ali Imron
Universitas Islam Negeri Sunan Kalijaga, Yogyakarta, Indonesia
email: ali.imron@uin-suka.ac.id

Anif Yuni Muallifah
Universitas Islam Negeri Sunan Kalijaga, Yogyakarta, Indonesia,
email: anif.muallifah@uin-suka.ac.id

Ahmed Zaranggi Ar Ridho
Universitas PTIQ Jakarta, Indonesia
email: zeranggi.reza@gmail.com

Muhammad Zaelani
Universitas PTIQ Jakarta, Indonesia
email: muhammad.zaelani1219@gmail.com

Firdarini
Universitas PTIQ Jakarta, Indonesia
email: firdarini.mhs@ptiq.ac.id

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Abstract:

This study aims to explore the perspectives of Yogyakarta scholars on vaccines produced using MDCK (Madin-Darby Canine Kidney) cells derived from dog kidneys. MDCK raises concerns among Muslims regarding its *ḥalāl* status, as dogs are considered impure (*najis*) in Islamic law. Through in-depth interviews with five key informants from MUI, LPH, LBM PWNU, and UIN Sunan Kalijaga, this study examines their views based on the *al-Qur'ān*, *Ḥādīṡ*, and juristic opinions. The findings reveal diverse positions. One informant emphasizes

Author correspondence email: ali.imron@uin-suka.ac.id
Available online at: http://ejournal.iainmadura.ac.id/index.php/alihkam/

regulatory barriers rooted in the Shafi'i school, which requires *istiḥālah* (perfect transformation) and rejects foreign *ḥalāl* certificates. Other informants invoke *talfīq* (eclecticism) by shifting to the Maliki or Hanafi schools, which consider dogs not impure. They also highlight the concept of *mujāwir* (process accompaniments), arguing that MDCK cells are effectively removed through purification, and that even in the Shafi'i school, impurity invisible to the naked eye is forgivable (*ma'fuwwun 'anhu*). Clinical analogies, such as Enoxaparin, further support conditional permissibility. The majority accept MDCK-based vaccines when no *ḥalāl* alternatives exist, purification ensures no cellular traces remain, and public health necessity (*ḍarūrah*) justifies their use under *ḥifẓ an-nafs* (preservation of life). This study has limitations, namely that it only covers scholars from Yogyakarta and focuses only on MDCK cells. Further research is needed for other regions and for other impure (*najis*) materials besides MDCK.

Keywords:
Vaccine; MDCK Cell-line; Unclean; Dog; *Ḥalāl*ness

Introduction

Vaccination is one of the most effective measures to prevent the spread of infectious diseases and protect public health.[1] However, the acceptance of vaccines among Muslim communities often faces challenges related to the *ḥalāl* status of the materials used in the vaccine production process. One such concern is the use of the MDCK (Madin-Darby Canine Kidney) cell line, derived from dog kidneys, in the production of vaccines such as influenza vaccines. The official authority, the Centers for Disease Control and Prevention (CDC), the U.S. national public health agency, explicitly states on its official website that since the 2019–2020 flu season, all Candidate Vaccine Viruses (CVVs) provided to manufacturers for vaccine production (in

[1] Kabiru Goje, "Immunization and Quarantine in the Light of the Prophetic Traditions with Reference to the UAE Quarantine Policies for Fighting COVID-19," *Al-Bayan: Journal of Qur'an and Hadith Studies* 20, no. 1 (2022): 48–75, https://doi.org/10.1163/22321969-12340108.

America) have been derived from MDCK cells, rather than fertilized eggs.[2]

Although not as well-known as the issue of pork in vaccines, the controversy surrounding the use of dog elements in vaccines has actually been circulating in Indonesia. In 2021, Alfian Tanjung, a fairly popular preacher, claimed that vaccines are made from extracts of dogs, monkeys, and pigs. "Why are there so many poor people, struggling people, nowadays? And why are their illnesses so strange? Because they have been corrupted through injections. Vaccines that contain trypsin. Trypsin, the extracts of dogs, monkeys, and pigs," said Alfian Tanjung.[3]

A few years earlier, in 2015, a doctor named Puti Naindra Alevia, in her writing titled "*Vaksin Halal, Vaksin Haram*" (*Ḥalāl* Vaccines, *Ḥarām* Vaccines), wrote, "It turns out that, in addition to trypsin, vaccine production also uses other materials whose *ḥalāl* status is unclear, such as monkey kidney tissue, dog kidney cells, and human retina cells as a medium for virus cultivation for the development of the influenza vaccine."[4] This presents a significant theological concern given that Islamic jurisprudence categorizes dogs as ritually impure (*najis*), thereby problematizing the *ḥalāl* compliance of vaccines derived from MDCK cell lines.[5]

A review of the literature pertinent to this study reveals a discursive divide that remains largely unbridged. On one side, scholarship has concentrated on the technological and positive legal

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[2] Centers for Disease Control and Prevention, "Cell-Based Flu Vaccines," *Centers for Disease Control and Prevention*, August 25, 2023, https://www.cdc.gov/flu/vaccine-types/cell-based.html.

[3] M Rodhi Aulia, "Video Alfian Tanjung Sebut Vaksin dari Saripati Anjing, Monyet dan Babi? Ini Faktanya," *Cek Fakta*, January 23, 2021, https://cekfakta.com/focus/6175.

[4] Puti Naindra Alevia, "Vaksin Haram, Vaksin Halal," *Klik Dokter*, January 22, 2015, https://www.klikdokter.com/info-sehat/kesehatan-umum/vaksin-haram-vaksin-halal?srsltid=AfmBOooSXeMkC4LzoLZTrARa61InxWyNyVVIWttjp1xdYmB2wTO9nHlW.

[5] Mujahidin Ahmad, "Developing Halal Vaccine Production in Indonesia: Challenges and Future Opportunities," *El-Hayah:Jurnal Biologi* 9, no. 1 (2022): 18–30, https://doi.org/10.18860/elha.v9i1.18026; Teguh Ifandi and Idaul Hasanah, "Maslahat (Benefits) in *Fiqh Awlâwiyât*: A Comparison between Yûsuf Al-Qarâdhawî's View and Abdus Salam Alî Al-Karbulî's," *Al-'Adalah : Jurnal Syariah dan Hukum Islam* 21, no. 1 (2024): 1–24, https://doi.org/10.21111/tsaqafah.v13i2.1183.

aspects of vaccine production. Virological research, such as that by Hegde (2015),[6] Gregersen et al. (2011)[7], and Noh (2013),[8] convincingly demonstrates the technical advantages of the MDCK cell platform, from production efficiency to antigen (vaccine seed) purity, yet it completely sidesteps the question of the religious permissibility (*ḥalāl*) of its substrate. Concurrently, Islamic legal scholarship, exemplified by the works of Zulkarnain et al (2021),[9] and Ahmad (2022)[10] identify the use of animal cells as a serious concern. However, its analysis of MDCK cells often culminates in a simplistic pronouncement of prohibition (*ḥarām*). This approach neglects two critical dimensions: (1) an in-depth discussion of relevant Islamic legal maxims (*qawā'id fiqhiyyah*), such *as istihālah* (transformation) and *darurah* (necessity), and (2) the contextual reasoning and voices of local Islamic scholars or intellectuals, for instance, in Yogyakarta, which possess a direct understanding of local scholars.

Concurrently, a distinct body of scholarship has rigorously examined the socio-religious dynamics of vaccine acceptance within Muslim communities. This literature provides valuable analyses of

[6] Nagendra R. Hegde, "Cell Culture-Based Influenza Vaccines: A Necessary and Indispensable Investment for the Future," *Human Vaccines & Immunotherapeutics* 11, no. 5 (2015): 1223–34, https://doi.org/10.1080/21645515.2015.1016666.

[7] Jens Peter Gregersen et al., "Safety of MDCK Cell Culture-Based Influenza Vaccines," *Future Microbiology* 6, no. 2 (2011): 143–52, https://doi.org/10.2217/fmb.10.161.

[8] Ji Yun Noh and Woo Joo Kim, "Influenza Vaccines: Unmet Needs and Recent Developments," *Infection and Chemotherapy* 45, no. 4 (2013): 375–86, https://doi.org/10.3947/ic.2013.45.4.375.

[9] Nurul Nadiah Zulkarnain et al., "Cell-Based Influenza Vaccine: Current Production, Halal Status Assessment, and Recommendations towards Islamic-Compliant Manufacturing," *Human Vaccines and Immunotherapeutics* 17, no. 7 (2021): 2158–68, https://doi.org/10.1080/21645515.2020.1865044; Sri Walny Rahayu and Syahrizal Abbas, "A Synergy of Halal Tourism Regulations and Tourism Rights Protection in Aceh: Pentahelix Model," *Samarah: Jurnal Hukum Keluarga dan Hukum Islam* 8, no. 3 (2024): 1454–75, https://doi.org/10.22373/sjhk.v8i3.23495.

[10] Ahmad, "Developing Halal Vaccine Production in Indonesia: Challenges and Future Opportunities"; Abdul Hamid et al., "Misconception about Halal Certification Placement on Non-Food Commodities : State Coercion over the Territory of Ijtihad," *Al-Manahij: Jurnal Kajian Hukum Islam* 19, no. 2 (2025): 271–88, https://doi.org/10.24090/mnh.v19i2.14064.

institutional fatwas, e.g. by Atabik (2024),[11] Hasyim (2023)[12], and Sholeh (2022),[13] elucidating how the framework of *maqāṣid asy-syarī'ah*(the higher objectives of Islamic law) is operationalized in public health. Nonetheless, these inquiries remain generalized in scope, failing to grapple with the specific juridical problem posed by biologics derived from ritually impure sources, such as porcine trypsin or canine MDCK cells. Parallel sociological investigations, e.g., Padmawati et al. (2019)[14] and Machmud et al. (2023),[15] convincingly establish the pivotal role of religious authorities in shaping local community behavior. However, they predominantly map psychosocial determinants rather than deconstruct the substantive theological and jurisprudential reasoning underpinning the scholars' positions. Consequently, a salient interdisciplinary gap is evident: the absence of a dedicated *fiqh* inquiry into the specific case of MDCK cells.

This study addresses critical gaps in the existing literature by conducting a focused Islamic legal analysis of vaccines utilizing Madin-Darby Canine Kidney (MDCK). Furthermore, while prominent voices from various regions, such as Mujahidin Ahmad (Malang, Indonesia),[16]

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[11] Ahmad Atabik and Muhammad R. Muqtada, "Maqashid Quran's Critical View on Indonesian Ulema Council's Fatwa on Halal Certification of COVID-19 Vaccine," *HTS Teologiese Studies / Theological Studies* 80, no. 1 (March 2024): 6, https://doi.org/10.4102/HTS.V80I1.9050.

[12] Syafiq Hasyim, "Prioritizing Life over Religion in Indonesia's Covid-19 Fatwas: The Fatwas of NU, Muhammadiyah, and MUI," *Studia Islamika* 30, no. 3 (September 2023): 407, https://doi.org/10.36712/SDI.V30I3.32732; Muhammad Taufiq, Muhammad Fauzinuddin Faiz, and Ziyad Ravaşdeh, "Between Sharia and State : Fatwa Authority and Pandemic Responses in Indonesia , Turkey , and Morocco," *De Jure: Jurnal Hukum dan Syar'iah* 17, no. 1 (2025): 377–94, https://doi.org/10.18860/j-fsh.v17i1.31433.

[13] Muhammad Asrorun Niam Sholeh, "Fatwa of the Indonesian Ulema Council (MUI) and Its Contributions to the Halal and Holy Status of COVID-19 Vaccine in Indonesia," *Journal of Positive School Psychology* 6, no. 4 (2022): 6961 – 6972.

[14] Retna Siwi Padmawati et al., "Religious and Community Leaders' Acceptance of Rotavirus Vaccine Introduction in Yogyakarta, Indonesia: A Qualitative Study," *BMC Public Health* 19, no. 1 (2019): 1–6, https://doi.org/10.1186/s12889-019-6706-4.

[15] Putri Bungsu Machmud et al., "Barriers to and Facilitators of Hepatitis B Vaccination among the Adult Population in Indonesia: A Mixed Methods Study," *Vaccines* 11, no. 2 (2023): 398, https://doi.org/10.3390/VACCINES11020398/S1.

[16] Ahmad, "Developing Halal Vaccine Production in Indonesia: Challenges and Future Opportunities"; Khusniati Rofiah et al., "Legal Awareness of Halal Products Certification among East Java Business Operators and Society," *Juris: Jurnal Ilmiah Syariah* 23, no. 1 (2024): 55–65, https://doi.org/10.31958/juris.v23i1.10467.

Alfian Tanjung (Jakarta, Indonesia),[17] and Nurul Nadiah Zulkarnain (Malaysia)[18] have consistently opposed the permissibility of canine cell-based vaccines on religious grounds, Islamic scholars (*'ulamā'*) in Yogyakarta present notably divergent perspectives. This localized approach provides new insights into *ḥalāl* vaccine discourse.

The objective of this research is to seek answers to the following questions: (1) How can the vaccine production process involving the MDCK cell line derived from canine kidneys be comprehensively explained, and what is the critical role of MDCK in this vaccine production process? (2) How are the global perspectives from the Qur'an, Hadith, and Islamic jurists regarding dogs viewed? (3) How do the local scholars in Yogyakarta view vaccines produced using this MDCK cell line?

Methods

This study employs a qualitative field research design structured to facilitate a deep, interdisciplinary *fiqh* inquiry. The primary empirical data consists of semi-structured, in-depth interviews conducted with key informants in Yogyakarta (January-February 2025), selected for their authoritative expertise at the nexus of Islamic jurisprudence and biomedical science. These interviews are designed specifically to elicit the hermeneutical processes and contextual reasoning these scholars employ when navigating the classical legal texts on impurity (*najāsah*) in light of modern biotechnology. Several key informants were selected based on their specific expertise relevant to this study, as displayed in Table 1.

Table 1. List of Key Informants

[17] M Rodhi Aulia, "Video Alfian Tanjung Sebut Vaksin dari Saripati Anjing, Monyet dan Babi? Ini Faktanya."

[18] Nurul Nadiah Zulkarnain et al., "Cell-Based Influenza Vaccine: Current Production, Halal Status Assessment, and Recommendations towards Islamic-Compliant Manufacturing," *Human Vaccines & Immunotherapeutics* 17, no. 7 (2021): 2158–68, https://doi.org/10.1080/21645515.2020.1865044; Diky Faqih Maulana, Makhrus, and Hamidatul Hasanah, "The Urgency of MUI Halal Fatwa about Food , Beverage , Medicine and Cosmetic Products for the Consumer Protection," *Volksgeist: Jurnal Ilmu Hukum dan Konstitusi* 5, no. 2 (2022): 199–214, https://doi.org/10.24090/volksgeist. v5i2.6421.

Key Informant	Position / Affiliation	Area of Expertise
1. Ahmad Baidowi	Head of the *Ḥalāl* Assurance Agency (LPH) at UIN Sunan Kalijaga	Professor of Qur'anic Exegesis (*Tafsīr*), UIN Sunan Kalijaga
2. Abdul Mustaqim	Head of Information and Communication, Yogyakarta Provincial Indonesian Ulema Council (MUI Yogyakarta)	Expert in Exegesis of Legal Verses (*Tafsīr Āyāt al-Aḥkām*)
3. Dian Aruni Kumalawati	Head of the Biomedical Science Program, UIN Sunan Kalijaga	Expert in Biomedical Science
4. Anis Masduqi	Chair of the Nahdlatul Ulama Regional Institute for Research and Development (LBM PWNU), Yogyakarta	Expert in Legal Hadith (*Ḥādīṡ al-Aḥkām*)
5. Lukluk Al Ulya	General Doctor at the Sunan Kalijaga Health Center	Medical Practitioner.

In addition to utilizing primary data from the key informants in Table 1, this study also employs secondary data derived from relevant library sources pertaining to the research theme, encompassing both vaccine science and Islamic law perspectives.

Data obtained from primary and secondary sources were processed through qualitative thematic analysis. This process involved systematically coding the data, categorizing it based on emergent themes relevant to the research questions, reducing less relevant data, and critically analyzing these categories to construct a coherent argument. The research findings are presented in the form of a critical-descriptive narrative.

Result and Discussion

Definition, Origin, and Critical Role of MDCK in Vaccine Manufacturing

MDCK (Madin-Darby Canine Kidney) is a cell line derived from the kidneys of healthy female Cocker Spaniel dogs. This cell line was discovered in 1958 by S.H. Madin and N.B. Darby. The existence of MDCK has proven to be important in the fields of cell biology and virology.[19].

To analyze the permissibility of a vaccine produced using MDCK cells, it is essential to understand the vaccine manufacturing process itself, as it is within these technical stages that critical points of inquiry are often overlooked. The following outlines the influenza vaccine production protocol employed by Merck & Co., a multinational pharmaceutical corporation and leading global vaccine producer whose products are utilized worldwide.

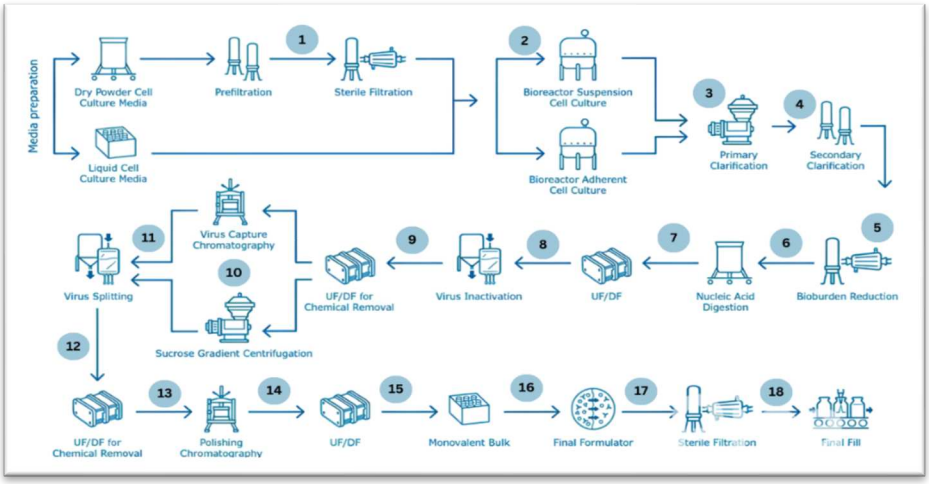

Figure 1. Influenza vaccine manufacturing process using the MDCK cell line.[20]

[19] BiologyInsights Team, "MDCK Cell Line in Vaccine Production: Characteristics & Processes - BiologyInsights," October 2024.

[20] Merck, "Egg-Based and Cell-Based Influenza Vaccine Manufacturing Methods," n.d.

It can be seen in Figure 1 that stage (1) is media preparation. At this stage, four key components are prepared: dry powder cell culture media, liquid cell culture media, pre-filtration equipment and materials, and media sterilization. The (2) stage is bioreactor suspension cell culture. It is at this stage that cell lines like MDCK are used as hosts for the antigen (virus), which later becomes the vaccine seed. Once the cell culture is complete, the vaccine seed virus is harvested.

The (3) stage is primary clarification, where the harvested antigen (vaccine seed) is filtered. This step involves purifying the vaccine seed from debris, including remnants of the MDCK host cells. The (4) stage is secondary clarification, which repeats the primary clarification process to further clean the viral solution from smaller and finer contaminants.

The (5) stage is bioburden reduction, where antibiotics are added, followed by sterile filtration using a fine-pored filter (approximately 0.22 micrometers) to remove any remaining microbes. The (6) stage is nucleic acid digestion, where nucleases (such as DNase and RNase) are used to eliminate residual DNA and RNA from the host cells (e.g., MDCK) that may remain in the solution.

The (7) stage is ultrafiltration and diafiltration (UF/DF), which removes residual enzymes from the previous bioburden reduction step. During diafiltration, water as buffer is continuously added to wash away the chemical residues. The (8) stage is virus inactivation, where the virus is deactivated using chemicals such as formaldehyde or ultraviolet (UV) radiation, which destroys the virus's genetic material, rendering it incapable of causing disease.

The (9) stage is UF/DF chemical removal. Here, the inactivated vaccine seed virus is filtered again to ensure the solution containing the virus is free from molecular contaminants and chemical residues. The (10) stage is virus capture chromatography and sucrose gradient centrifugation. These two steps are part of a single process. Although the previous nine stages have removed many contaminants, some host cell proteins, nucleic acids, and other small particles may still remain. This stage is designed to eliminate all remaining residues.

The (11) stage is virus splitting, where the virus's structure is broken down into smaller components. This process uses chemicals, typically specialized detergents, which disrupt the virus's lipid membrane and proteins, breaking it into smaller. The (12) stage is

UF/DF chemical removal, which eliminates residual chemicals using a specialized membrane. A clean buffer solution is added at this stage. The equipment and materials used include: a) a semi-permeable membrane with small pores that can retain the virus while allowing residual chemical molecules to pass through; b) buffers such as phosphate-buffered saline (PBS), Tris-buffered saline (TBS), or HEPES buffer; c) deionized water used to prepare the buffer and wash the membrane during the process (in the vaccine industry, thousands of liters of water may be used); d) pumps and circulation systems to pump the solution through the membrane and maintain a stable flow; and e) devices to control pressure, flow, and temperature throughout the process.[21]

The (13) stage is polishing chromatography. This is the second chromatography step, following the chromatography in stage 10. Here, the vaccine seed virus is filtered through a chromatography column using specialized resin or filters to separate the virus from contaminants such as proteins, DNA, or other residual chemicals. The (14) stage is another round of ultrafiltration/diafiltration (UF/DF). While similar to stage 12, this step has a different purpose, requiring adjustments in conditions and technical settings. The UF/DF in stage 12 aims to remove residual chemicals from the virus splitting process, whereas the UF/DF in stage 14 focuses on increasing the concentration of the virus in the solution by reducing its water content.

The (15) stage is monovalent bulk, which involves collecting the purified virus. The term "monovalent" indicates that only one type of virus is gathered for further processing in the subsequent stages. [22] The (16) stage is final formulation, where the purified vaccine is mixed with adjuvants and excipients. Adjuvants are substances added to enhance the body's immune response to the antigen. One commonly used adjuvant is MF59, an oil-in-water emulsion. Influenza vaccines enriched with MF59 show increased effectiveness in elderly patients. Excipients, on the other hand, are additives used to stabilize the vaccine

[21] Jieun Lee, Jiwon Na, and Youngbin Baek, "Effects of Impurities from Sugar Excipient on Filtrate Flux during Ultrafiltration and Diafiltration Process," *Membranes* 11, no. 10 (2021): 775, https://doi.org/10.3390/MEMBRANES11100775/S1.

[22] Diána Knipl and Seyed M. Moghadas, "Comparative Dynamics of Monovalent and Bivalent Vaccination for Immunologically Unrelated Pathogens," https://doi.org/10.1142/S0218339016500054 24, no. 1 (April 3, 2016): 91–115, accessed December 31, 2024, https://www.worldscientific.com/worldscinet/jbs.

and ensure its durability during delivery. The (17) stage is sterile filtration, the final step before filling and packaging the vaccine. This step ensures the final product is free from microbial contaminants such as bacteria, fungi, or other microorganisms. Sterile filtration is crucial as it ensures the absence of pathogens without compromising the integrity of the vaccine product. The (18) stage is final fill, where the vaccine product is packaged into vials or syringes ready for use. Filling is performed using automated machines to minimize contamination risks and ensure dosage accuracy.

From the above explanation, it can be seen that the MDCK cell line plays a crucial role in the second stage, serving as the host for the influenza virus to grow and replicate. Since viruses cannot survive or reproduce independently without attaching to a living host cell, the presence of the MDCK cell line is a prerequisite for the existence of the influenza virus. Once separated from its host cell, the virus will gradually die unless it finds another living host to attach to.

The same point was also stated by Dian Aruni, Head of the Biomedical Science Study Program at UIN Sunan Kalijaga:

> "Vaccines manufactured to prevent virus-induced diseases must be produced using materials derived from the virus itself. The influenza virus serving as the vaccine seed cannot replicate on its own. It must reside within a living cell, such as MDCK; without this host cell, the virus will degrade and lose its infectivity in less than a day. Consequently, vaccine production would fail"[23]

The statement affirms an undeniable scientific fact: the influenza virus is an obligate intracellular parasite, thus absolutely requiring a living host cell to replicate. In the context of vaccine production, MDCK becomes a technical prerequisite for the existence of the virus itself, which is then used as the vaccine seed.

General Perspectives of the al-Qur'ān, Ḥadīṡ, and Islamic Jurists on the Use of Dogs as a Source for MDCK

[23] Dian Aruni Kumalawati, Head of the Biomedical Science Study Program at UIN Sunan Kalijaga, *Interview*, January 13, 2025.

As previously explained, MDCK, commonly used in influenza vaccine production, originates from the kidney cells of female Cocker Spaniel dogs. Therefore, to determine the Islamic legal ruling on MDCK, it is necessary to comprehensively examine Islamic texts, including the Qur'an, Hadith, and the opinions of Islamic scholars, regarding dogs. Table 2 below shows relevant Qur'anic verses about dogs.

Table 2. Qur'anic References to Dogs and Their Jurisprudential Relevance

Surah/ Verse	Translation
1. *Al-Kahf* (18):22	Some will say, 'They were three, their dog being the fourth,' while others will say, 'They were five, their dog being the sixth,'—only guessing blindly. And others will say, 'They were seven, their dog being the eighth.' Say, 'My Lord knows best their number. None knows them except a few.'
2. *al-Mā'idah* (5):4	Say, 'What is good and lawful for you is what is caught by hunting animals (dogs) you have trained as Allah has taught you. So eat what they catch for you, and mention Allah's name over it.
3. *Al-A'raf* (7):175-177	"We willed, We could have elevated him through Our signs, but he clung to the worldly life and followed his desires. His likeness is that of a dog: if you chase it, it pants with its tongue out, and if you leave it, it still pants with its tongue out. Such is the example of those who deny Our signs.

Sources: Researchers' document analysis

From these three verses in Table 2, it is clear that two verses portray dogs positively: the dog of the People of the Cave (Qur'an, Al-Kahfi: 22) and the trained hunting dog (*al-Qur'ān*, *al-Mā'idah*: 4). Meanwhile, one verse uses the dog as a negative metaphor for humans with bad behavior, not as a literal judgment on the physical nature of dogs.

In contrast to the Qur'anic normative framework discussed above, Hadith provides more detailed and diverse legal rulings

concerning the status of dogs and human interaction with them. The spectrum of these rulings, summarized in Table 3.

Table 3. Key Prophetic Traditions (*Ḥādīṡ*) on Dogs and Their Jurisprudential Implications

Hadith Reference	Translation
1. al-Bukhārī: 172	The purification of the vessel of one of you, if a dog has licked it, is that he should wash it seven times, the first of which is with clean soil.[24]
2. al-Bukhārī: 175	If you release your trained dog (for hunting) and mention the name of Allah, then eat (what it catches)." [25]
3. Muslim: 4015	Whoever keeps a dog that is not for herding livestock, hunting, or guarding farmland, will lose one qirāṭ from his reward every day.[26]
4. Muslim: 4010	Indeed, we [angels] do not enter a house in which there is a dog or images.[27]
5. al-Bukhārī: 492	The prayer is nullified by a woman, a donkey, and a black dog.[28]
6. al-Bukhārī: 172	"...and a prostitute was forgiven who passed by a dog panting near a well... so she drew water for it with her shoe, and she was forgiven."[29]
7. al-Bukhārī: 173	Dogs used to urinate, come and go in the mosque during the time of Allah's Messenger (ﷺ), and they would not sprinkle anything (water) because of that."[30]

Sources: Researchers' document analysis

[24] Shalih Al-Utsaimin, *Syarah Shahih Al-Bukhari 1* (Jakarta: Darus Sunnah, 2010).

[25] Ahmad Sunarto, Tarjamah Shahih Al-Bukhari 1 (Semarang: CV Asy-Syifa, 1991), 337.

[26] Muslim bin Hajjaj, English Translation of Sahih Muslim Arabic-English, Vol 4 (Transl. Nashiruddin Al-Khathab) (Riyadh: Darussalam, 2007), 288.

[27] Hajjaj.

[28] Ahmad Sunarto, Tarjamah Shahih Al-Bukhari 1 (Semarang: CV Asy-Syifa, 1991), 337.

[29] Sunarto, 134.

[30] Sunarto, *Tarjamah Shahih Al-Bukhari 1*.

Table 3 reveals that the hadith corpus encompasses a broad spectrum of perspectives on the legal rulings pertaining to dogs. Certain hadiths present detailed, restrictive views—for instance, mandating a seven-fold purification for a dog's lick, permitting ownership only for specific utilitarian purposes (like guarding), and citing dogs as nullifiers of prayer. Conversely, other hadiths establish remarkably positive or neutral legal precedents, such as affirming the permissibility of game caught by trained dogs and documenting the commonplace, uncontested presence of dogs in the vicinity of the Prophet's mosque. This internal dialectic within the prophetic tradition itself signifies that the legal status of the dog is not a rigid or monolithic decree but rather a dynamic, multi-textured issue that has sustained rigorous scholarly debate from the classical era to the present day.

Due to this seemingly ambiguous positioning of dogs in the Qur'an and Hadith, Islamic scholars have differing opinions on the detailed rulings regarding dogs, as explained in Table 4.

Table 4. Differences of opinion among Islamic jurists on the ruling regarding dogs

Mazhab	Opinion on the Impurity of Dogs	Evidence and Arguments Used
Hanafi	Dogs are not inherently impure; only their mouth, saliva, urine, and feces are impure.	Based on Qur'an, Al-An'am: 145, dogs are not mentioned as *ḥarām* or impure animals, and they are beneficial for hunting as stated in Qur'an, Al-Maidah: 4. However, the mouth, saliva, urine, and feces are considered impure, as per the hadith narrated by Muslim.[31]
Maliki	Dogs are considered pure in their entirety, including their saliva.	Imam Malik argued that all animals are inherently pure, including dogs. Only their saliva is considered impure. If

[31] Wahbah Zuhaily, *Al-Fiqh Al-Islam Wa Adillatuh (1)*, 3rd ed. (Damaskus: Dar al-Fikr, 1985), 153; Abd Ar--Rahman Al-Jazairi, *Kitab al-Fiqh Ala Madzahib al-Arbaah*, 1st ed. (Beirut: Dar al-Kutub al-Ilmiyyah, 2003), 13–14.

Mazhab	Opinion on the Impurity of Dogs	Evidence and Arguments Used
		something is licked by a dog, it must be washed as a form of ritual purification (*ta'abbudī*).[32]
Shafi'i	Dogs are considered severely impure (*najis mugallaẓah*); their entire body is impure.	Based on the Prophet's (SAW) hadith that orders washing a vessel licked by a dog seven times, one of which should include rubbing it with soil.[33]
Hanbali	Dogs are considered severely impure; their entire body is impure.[34]	Similar to the Shafi'i School, based on the hadith about washing a vessel licked by a dog

Sources: Researchers' document analysis

Table 4 implies significant jurisprudential divergence (*ikhtilāf fiqhī*) regarding canine impurity, reflecting distinct interpretive methodologies among the *madhāhib*. As evidenced in the Hanafi school, dogs are not considered impure due to their usefulness as guards and hunters, as acknowledged in the Qur'an (Al-Maidah: 4).[35] Dogs are deemed pure because the Qur'an (*Al-An'am*: 145) does not classify them as impure (*rijsun*) or forbidden animals. However, the mouth, saliva, urine, and feces of dogs are still considered impure. Items licked by a dog must be washed seven times, as reported in the hadiths narrated by Ahmad and Muslim.[36]

In the Maliki School, all living animals are considered pure, including dogs. However, vessels licked by a dog must be washed seven times as a form of compliance with Islamic law. In the book *Ḥāsyiyah aṣ-Ṣāwī 'alā asy-Syarḥ aṣ-Ṣagīr*, Imam al-Shawi explains:

[32] Al-Jazairi, *Kitab Al-Fiqh Ala Madzahib Al-Arbaah*.

[33] Al-Jazairi.

[34] Zuhaily, *Al-Fiqh Al-Islam Wa Adillatuh (1)*.

[35] Amira Sonbol, "Discourses on and Realities of the Life of Canines among Arabs and Muslims," *Hawwa* 12, no. 1 (2014): 101–20, https://doi.org/10.1163/15692086-12341256.

[36] Kurniawan, "Ini Pandangan Ulama Perihal Najis Anjing," *NU Online*, July 2, 2019, https://nu.or.id/bahtsul-masail/ini-pandangan-ulama-perihal-najis-anjing-E7H5d.

> "Purity applies to living animals, their sweat, tears, mucus, saliva, and eggs, except for rotten eggs and what comes out after their death. The default state of all things is purity. The entire earth and what emerges from it are pure, and impurity is a secondary consideration. Every living creature, even dogs or pigs, is pure, as are their sweat and other bodily fluids, except for rotten eggs."[37]

In contrast, the Shāfiʿī and Ḥanbalī schools maintain that dogs (*canis lupus familiaris*) and all their bodily derivatives are ritually impure (*najis mugallaẓah*). According to these juridical views, objects contaminated by such substances require seven purification washes (*ghusl*), one of which must incorporate soil (*turāb*). This position carries significant pharmaceutical implications, particularly regarding the impermissibility (*taḥrīm*) of dog-derived medical components. For instance, the encapsulation of insulin-producing cells derived from dog adipose tissue for diabetes therapeutics would be considered religiously proscribed (*ḥarām*) under these schools' rulings, notwithstanding potential.[38]

Yogyakarta Ulamas View on Vaccines Produced Using Dog Cells (MDCK)

With regard to the development of vaccine technology produced using MDCK, the *'ulamā'* in Yogyakarta hold a particularly noteworthy perspective.

Informan (1), a professor of Quranic Commentary (*tafsīr*) at UIN Sunan Kalijaga and the head of the *Ḥalāl* Assurance Agency (LPH/*Lembaga Penjaminan Halal*) at the same institution,[39] stated that in

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[37] Syihabuddin ahmad bin Muhammad As-Shawi, "*Kitāb Ḥāsyiyah aṣ-Ṣāwī 'alā asy-Syarḥ aṣ-Ṣagīr = Bulgah as-Sālik li Aqrab al-Masālik*," Shamela WS Book, 2025, https://shamela.ws/book/21607/42.

[38] Quynh Dang Le et al., "In Vitro Generation of Transplantable Insulin-Producing Cells from Canine Adipose-Derived Mesenchymal Stem Cells," *Scientific Reports* 12, no. 1 (2022): 1–18, https://doi.org/10.1038/s41598-022-13114-3.

[39] LPH UIN Sunan Kalijaga, "LPH UIN Sunan Kalijaga Naik Status Menjadi LPH Utama, Perluas Cakupan dan Jangkauan Pemeriksaan Halal Hingga Kancah Internasional," *LPH UIN Sunan Kalijaga*, January 18, 2024, https://uin2024.uin-suka.ac.id/id/berita/detail/1351/blog-post.html.

Indonesia, LPH follows the Shafi'i school of thought. Therefore, vaccines produced using MDCK cells would face challenges in obtaining *ḥalāl* certification from the *Ḥalāl* Product Assurance Agency (BPJPH/ *Badan Penyelenggaraan Jaminan Produk Halal*). He states:

> "To my knowledge, the guidelines used by LPH, as an extension of BPJPH under the Ministry of Religious Affairs, are still based on the fatwas issued by the Indonesian Ulema Council (MUI), which adhere to the Shafi'i school. Any product, including vaccines from abroad, must obtain certification from BPJPH to enter and circulate in Indonesia. Thus, vaccines developed using dog cells like MDCK will find it difficult to receive *ḥalāl* certification from MUI. For example, if a vaccine lists MDCK as one of its ingredients and has already received certification from Morocco, it would still need to undergo recertification in Indonesia."[40]

Informan (1) statement reveals two main obstacles to the *ḥalāl* certification of MDCK-based vaccines in Indonesia. (1) The Indonesian *ḥalāl* certification system adheres strictly to the Shafi'i school of thought, which prohibits all derivatives of dogs unless a perfect *istiḥālah* (transformation) occurs. Even extensive processing of MDCK may not necessarily meet the stringent standards of the Shafi'i school, making it difficult for such vaccines to obtain certification. (2) *Ḥalāl* certificates from other countries that follow the Maliki school (e.g., Morocco) or the Hanafi school (e.g., Turkey) are not recognized. Consequently, even imported vaccines must be recertified in Indonesia, creating a dilemma between global production efficiency and compliance with domestic regulations.

From this, it can be seen that the main obstacle is not purely a matter of Islamic jurisprudence, but rather the binding regulatory framework. However, Informan (1) added that there is still a possibility for vaccines involving MDCK to be used in Indonesia, particularly in emergency situations in cases where no alternative is available, such as

[40] Ahmad Baidhowi, a professor of Quranic Commentary (tafsir) at UIN Sunan Kalijaga, *Interview*, January 16, 2025.

Flubio,[41] Fluzone,[42] Vaxigrip, Fluad, Flucevax, Afluria Vaccine, and others, which are developed using egg-based technology. In such cases, the argument of *ḍarūrah* (necessity) could justify their use.

> "It is possible that such vaccines could be permitted for use if the situation is urgent and no other alternatives are available."[43]

Accordingly, informan (2), the Head of Information and Communication at the Yogyakarta Provincial Indonesian Ulema Council (MUI Yogyakarta),[44] stated that the use of vaccines involving MDCK cells could be permissible if it is necessary for public health. Vaccines, as modern technological products, are fundamentally designed for the benefit of humanity (*li maṣlaḥah al-ummah*).

> "The benefit (*maṣlaḥah*) derived from vaccines is the preservation of life (*ḥifẓ an-nafs*), which aligns with the objectives of Islamic law (*maqāṣid asy-syarī'ah*), one of which is to protect human life and health. Moreover, according to Imam Malik, the body of a dog is not impure. Regarding the impurity of dogs as held by Shafi'i and Hanbali scholars, we can shift to the Maliki or Hanafi schools for health-related matters like this. *Ahl as-Sunnah wa al-Jamā'ah* is not strictly tied to the Shafi'i school. Religion should not be used to hinder technology that clearly brings benefits to human life. Instead, religion

[41] Maria Cicilia Galuh Prayudhia, "Bio Farma Siap Membangun Pabrik Baru untuk Meningkatkan Kapasitas Produksi Vaksin," *Antara Jabar*, November 1, 2024, https://jabar.antaranews.com/berita/554569/bio-farma-siap-membangun-pabrik-baru-untuk-meningkatkan-kapasitas-produksi-vaksin.

[42] Sanofi, "Newly Licensed US Manufacturing Facility to Increase Availability of Fluzone® High-Dose Quadrivalent (Influenza Vaccine)," *WR Newswire*, June 17, 2021, https://www.prnewswire.com/news-releases/newly-licensed-us-manufacturing-facility-to-increase-availability-of-fluzone-high-dose-quadrivalent-influenza-vaccine-301314610.html.

[43] Sanofi.

[44] MUI Daerah Istimewa Yogyakarta, "MUI DIY Gandeng Media Keislaman," *MUI DIY Press*, December 5, 2022, https://muidiy.or.id/mui-diy-gandeng-media-keislaman/.

should be utilized to achieve the greatest common good (*maṣlaḥah 'āmmah*)."[45]

The statement of Informant (2) offers a fundamentally different perspective by advancing three arguments: the priority of *maqāṣid asy-syarī'ah* (*ḥifẓ an-nafs*), the shifting of legal schools to the Maliki or Hanafi schools, which consider dogs not impure, and the principle that religion should serve as a means to realize public benefit (*maṣlaḥah*), not as an obstacle to technology. In contrast to Informant (1), who emphasized regulatory barriers based on the Shafi'i school, Informant (2) opens the door to flexibility because vaccines are proven to save lives, thus darurah (necessity) and mashlahah take precedence.

He also affirms that *Ahl as-Sunnah wa al-Jamā'ah* is not rigidly bound to a single *mażhab*, and that Muslims may shift to another school that offers more leniency for public health issues. This difference reflects the tension between an institutional position tied to MUI fatwas (Shafi'i) and a progressive position that prioritizes *maqāṣid* over a particular madhhab's texts, thereby providing a note for BPJPH and MUI to reconsider the *ḥalāl* certification standards for MDCK-based vaccines, at least in emergency conditions such as a pandemic.

A more straightforward statement was given by informant (4), the Chair of the Nahdlatul Ulama Regional Institute for Research and Development (LBM PWNU) Yogyakarta,[46] who expressed his support for the use of vaccines developed with dog cells like MDCK. He argued that the Maliki school, recognized as one of the authoritative schools within NU, allows laypeople to follow any of the four major schools of thought. Furthermore, in the final vaccine product injected into patients, dog cells are no longer present. According to him, even in the Shafi'i school, *najis 'ainiyyah* (physical impurity) that is extremely small and invisible to the naked eye is considered forgivable.

"In the Shafi'i school, *najis 'ainiyyah* that is not visible to the naked eye (*naẓrat al-'ain*) falls under the category of

[45] Abdul Mustaqim, the Head of Information and Communication at the Yogyakarta Provincial Indonesian Ulema Council (MUI Yogyakarta), *Interview,* January 13, 2025.

[46] Ahmad Amnan, "Susunan Lengkap Pengurus LBM PBNU 2022-2027," *NU ONline*, March 24, 2022, https://nu.or.id/nasional/susunan-lengkap-pengurus-lbm-pbnu-2022-2027-QPNa5.

> forgivable or tolerable impurity. Moreover, if laboratory tests confirm that dog DNA is no longer present in the final vaccine product, it is likely that the dog cells were only involved in the vaccine production process (*mujāwir*) and not mixed with the final product injected into patients (*mukhallid*). They only come into contact during a specific stage and are subsequently purified with thousands of liters of water. Therefore, there is no issue with using such vaccines in the Muslim community, especially if the situation demands it."[47]

This statement provides a clear justification for the use of MDCK-based vaccines through three main arguments: (1) within the NU tradition, the Maliki school, which considers dogs not impure, is recognized as an authoritative school; thus, laypeople may shift to that school for this vaccine issue. (2) MDCK cells only play a role as *mujāwir* (process accompaniers) that do not permanently mix with the final product, as they undergo extensive purification through 18 stages with washing using thousands of liters of water. (3) Even within the Shafi'i school itself, physical impurity (*najis 'ainiyyah*) that is extremely small and invisible to the naked eye (*naẓrat al-'ain*) falls into the category of forgivable impurity (*ma'fuwwun 'anhu*). Therefore, in his view, MDCK vaccines are permissible for use in Muslim communities, especially in urgent situations, particularly if laboratory tests have confirmed the absence of dog DNA in the final product.

A slightly different perspective was offered by informant (5), a general doctor (practitioner) at the Sunan Kalijaga Health Center. She compared the case of MDCK in vaccine production to the non-*ḥalāl* catalyst present in the heart medication, Enoxaparin.

> "In clinical practice, we face dilemmas such as the use of Enoxaparin for heart attack patients. It is more practical than Heparin, but it is produced using a catalyst whose *ḥalāl* status is questionable. MUI has not declared it *ḥalāl*. Nevertheless, due to its effectiveness and ease of use, doctors still choose Enoxaparin. This is analogous to

[47] KH Anis Mashduqi, the Chair of the Nahdlatul Ulama Regional Institute for Research and Development (LBM PWNU) Yogyakarta, *Interview,* January 13, 2025.

> MDCK-based vaccines. In urgent situations, the key consideration is whether a truly effective alternative exists. If the alternative is significantly less effective, medical necessity takes precedence. In practice, we explain this to patients: that the product's *ḥalāl* status has not been confirmed by MUI, but its use is pursued for the patient's greater benefit."[48]

The statement of Informant (5) presents the perspective of a medical practitioner, which differs from those other informants. Using the analogy of Enoxaparin (a heart medication that uses a non-*ḥalāl* catalyst yet remains in use because it is more practical than Heparin), she reinforces the argument of *ḍarūrah* (necessity), namely that *ḥifẓ an-nafs* (preservation of life) may override unresolved legal considerations as long as no *ḥalāl* alternative with equal efficacy exists. He also highlights the importance of transparency and informed consent, explaining that doctors inform patients that the product's *ḥalāl* status has not been confirmed by MUI, yet its use is pursued for the patient's greater benefit. Thus, this perspective bridges the gap between MUI's cautious fatwas (*iḥtiyāṭ*) and the reality of urgent medical needs, aligning with *maqāṣid asy-syarī'ah,* which prioritizes the preservation of life.

The data from these five informants reveal that the legal debate over MDCK-based vaccines in Yogyakarta is not merely theological but rather a tension between institutional adherence to the Shafi'i school (Informant 1) and methodological flexibility that prioritizes *maqāṣid asy-syarī'ah* as well as clinical realities (Informants 2, 4, and 5). Informant 1 represents a rigid regulatory position: Indonesia's *ḥalāl* certification system is bound to the Shafi'i school, which requires *istiḥālah* (perfect transformation) and does not recognize certificates from countries following the Maliki or Hanafi schools, rendering MDCK vaccines difficult to certify as *ḥalāl* except in emergency situations with no alternatives. In contrast, Informant 2 opens the door to flexibility by emphasizing *ḥifẓ an-nafs* (preservation of life) and permitting *talfīq* (eclectic adherence) by following the Maliki or Hanafi schools on this specific issue for public benefit (*maṣlaḥah 'āmmah*),

[48] Lukluk Al Ulya, a general doctor (practitioner) at the Sunan Kalijaga Health Center Yogyakarta, *Interview,* January 6, 2026.

asserting that religion should not obstruct life-saving technology. Informant 4 reinforces this argument on three grounds: (a) the authority of the Maliki school within the NU tradition; (b) the status of MDCK cells as *mujāwir* (process accompaniments) that are purified through extensive processing until no longer present in the final product; and (c) the concept within the Shafi'i school itself that physical impurity (*najis 'ainiyyah*), which is invisible to the naked eye (*naẓrat al-'ain*), falls under forgivable impurity (*ma'fuwwun 'anhu*).

Meanwhile, Informant 5 offers a practical medical perspective through the analogy of Enoxaparin (a medication produced with a non-*ḥalāl* catalyst yet still used due to its effectiveness and the lack of equally effective alternatives) while maintaining transparency with patients. The analytical conclusion is as follows: although national *ḥalāl* regulations remain predominantly shaped by the Shafi'i school, there exist strong jurisprudential pathways, namely *ḍarūrah* (necessity), *istiḥālah* (transformation), *talfīq* (eclecticism between schools), and the concept of forgivable impurity. All of these arguments render MDCK-based vaccines permissible, particularly in pandemic emergencies or when no alternative *ḥalāl* vaccine of comparable efficacy is available.

From such data, it is evident that, in general, Yogyakarta scholars accept vaccines produced using MDCK cells, with two opinions stating that their use is permissible under emergency conditions.

Conclusion

In conclusion, the use of MDCK cells in vaccine production, though derived from canine kidneys deemed impure (*najis*) by some scholars, is conditionally permissible when: (1) no *ḥalāl* alternatives exist, (2) purification processes ensure no cellular traces remain in the final vaccine product, and (3) public health necessity (*ḍarūrah*) justifies their use under *ḥifẓ an-nafs* (preservation of life). The Yogyakarta ulamas' stances vary: Informant 1 highlights regulatory barriers within the Shafi'i system, while Informants 2, 4, and 5 invoke *talfīq* (shifting to the Maliki or Hanafi schools), the concept of *mujāwir* (process accompaniments), and forgivable impurity (*ma'fuwwun 'anhu*), and clinical analogies such as Enoxaparin to justify permissibility. This pragmatic balance prioritizes communal benefit over theoretical impurity concerns. However, the findings are limited by their narrow geographic scope (Yogyakarta-only) and exclusion of other contentious

cell lines (e.g., porcine-derived materials), necessitating broader interdisciplinary research to standardize Islamic vaccine ethics.

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