## Table S3. Isolation History & Host Associations of Primate and Artiodactyl Adeno-Associated Viruses (with citations)

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **AAV Isolation history** | | | | **Ad Isolation history** | | | | | | **AAV-Host Associations** | | | |
| **Name1** | **Iso. Ref** | **Isolation Source** | **Year** | **Ad Strain(s)** | **Iso. Ref** | **Iso. Source** | **Cell culture** | **Year2** | **Ad Host** | **Primary Association3** | **Seq.4** | **Serology5, 6** | |
|  |  |  |  |  |  |  |  |  |  |  |  | **Human** | **NHP** |
| AAV-1 | [1] | Ad stocks | 1965 | Ad7 | [2] | Human | MK, Human | 1953 | *H. sapiens* | Humans | Yes | ++++ | +++ |
| AAV-2 | [3] | Ad stocks | 1965 | Ad12, Ad7 | [2] | Human | Human | 1953 | *H. sapiens* | Humans | Yes | +++++ | ++ |
| AAV-3 | [4] | Ad stocks | 1965 | Ad7 | [2] | Human | AGMK | 1953 | *H. sapiens* | Humans? | Yes | +++ | ++ |
| AAV-4\* | [5] | Ad stocks | 1968 | SV15 | [6] | Macaque | MK, AGMK | 1956 | *M. mulatta* | NHP | No | + | +++++ |
| AAV-5 | [7] | Hu. Tissue (Cultured) | 1982 |  | *n/a* | | | | | Humans? | No | +++ | ++ |
| AAV-6 | [8] | Ad stocks | 1998 | Ad5 | [9, 10] | Human | Human | 1953 | *H. sapiens* | Humans | No | ++++ | ++ |
| AAV-7 | [11] | OWM Tissue (PCR) | 2004 | *n/a* | | | | | | OWM Asia | Yes | ++ | +++++ |
| AAV-8 | [11] | OWM Tissue (PCR) | 2004 | *n/a* | | | | | | OWM Asia | Yes | ++ | +++++ |
| AAV-9 | [11] | Hu. Tissue (PCR) | 2004 | *n/a* | | | | | | OWM Asia, Humans | Yes | +++ | +++++ |
| AAV-10 | [12] | OWM Tissue (PCR) | 2004 | *n/a* | | | | | | OWM Asia | Yes | +++ | +++++ |
| AAV-11\* | [12] | OWM Tissue (PCR) | 2004 | *n/a* | | | | | | OWM Asia | Yes | *n/d* | ++ |
| AAV-12\* | [13] | Ad stocks | 2008 | SV18 | None | Vervet | n/k | *n/k* | *C. aethiops* | OWM Africa | No | - | *n/d* |
| BAAV\* | [14] | Ad stocks | 1970 | Bovine Ad | [15] | Cow | Bovine | 1957 | *B. taurus* | Cattle | Yes | *n/d* | *n/d* |
| AAV-Go.1 | [16] | Ad stocks | 2004 | Caprine Ad | [16] | Goat | Caprine | 2004 | *C. hircus* | Goats | Yes | *n/d* | *n/d* |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |

**Footnotes:**

1. **Asterisks** indicate isolates carrying *M-wide* capsids.
2. **Earliest associated Ad stock**: Where multiple adenovirus (Ad) stocks are associated with the initial isolation of an AAV, the year shown corresponds to the earliest reported derivation of the Ad stock.
3. **Primary association designation** reflects a synthesis of isolation source, independent detection events, and serological data. For example:
   * If an AAV was repeatedly isolated from the same host species, this species was assigned as the primary host.
   * If a serotype was first isolated from Ad stocks, we reviewed the origin of those stocks (host species and derivation context) and considered this in determining the likely association.
   * For cases with ambiguous host associations or evidence of circulation in multiple hosts (e.g., AAV9), the association is noted as ambiguous or includes multiple taxa (e.g., “Humans / Asian OWM (putative)”).
   * AAV5 is designated as “Humans?” because, while first isolated from a human sample, it is nearly identical to a goat AAV, and no sequence-based evidence confirms its presence in humans beyond the original isolate [17].
4. **Independent sequence evidence**: Indicates whether the AAV has been independently detected via PCR, sequencing, or EVE discovery in the designated primary host. This is distinct from inference based solely on serology or historical Ad stock sources.
5. **Serological prevalence in humans and non-human primates** is graded based on a structured meta-analysis of published studies. Relative levels were binned as follows:
   * +: Very low
   * ++: Low
   * +++: Moderate
   * ++++: High
   * +++++: Very high
   * -: Absent
   * n/d: Not determined

These values are qualitative summaries derived by cross-referencing key datasets (e.g., Gao et al. 2003; Boutin et al. 2010; Calcedo et al. 2009; Klamroth et al. 2022) and harmonized to ensure comparability across serotypes. Where multiple studies presented conflicting findings, emphasis was placed on those with broader sampling, consistent neutralization assay methodology, and geographic diversity.

1. **Limitations of serology-based inference**: The presence of neutralizing antibodies does not guarantee active circulation or primary host status, especially in the context of cross-reactivity, shared antigenic determinants, and potential historical exposures (e.g., in primate centers). These uncertainties are especially relevant for AAV serotypes like AAV7, AAV8, and AAV9, which show broad seroreactivity across species [18].

**Abbreviations**: AAV=adeno-associated virus; Ad=Adenovirus; PCR=polymerase chain reaction; NHP=Non-human primates; OWM=Old World Monkeys; MK=monkey kidney cells; AGMK=African green monkey kidney cells; Hu.=Human; n/a = not applicable n/k= not known.

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