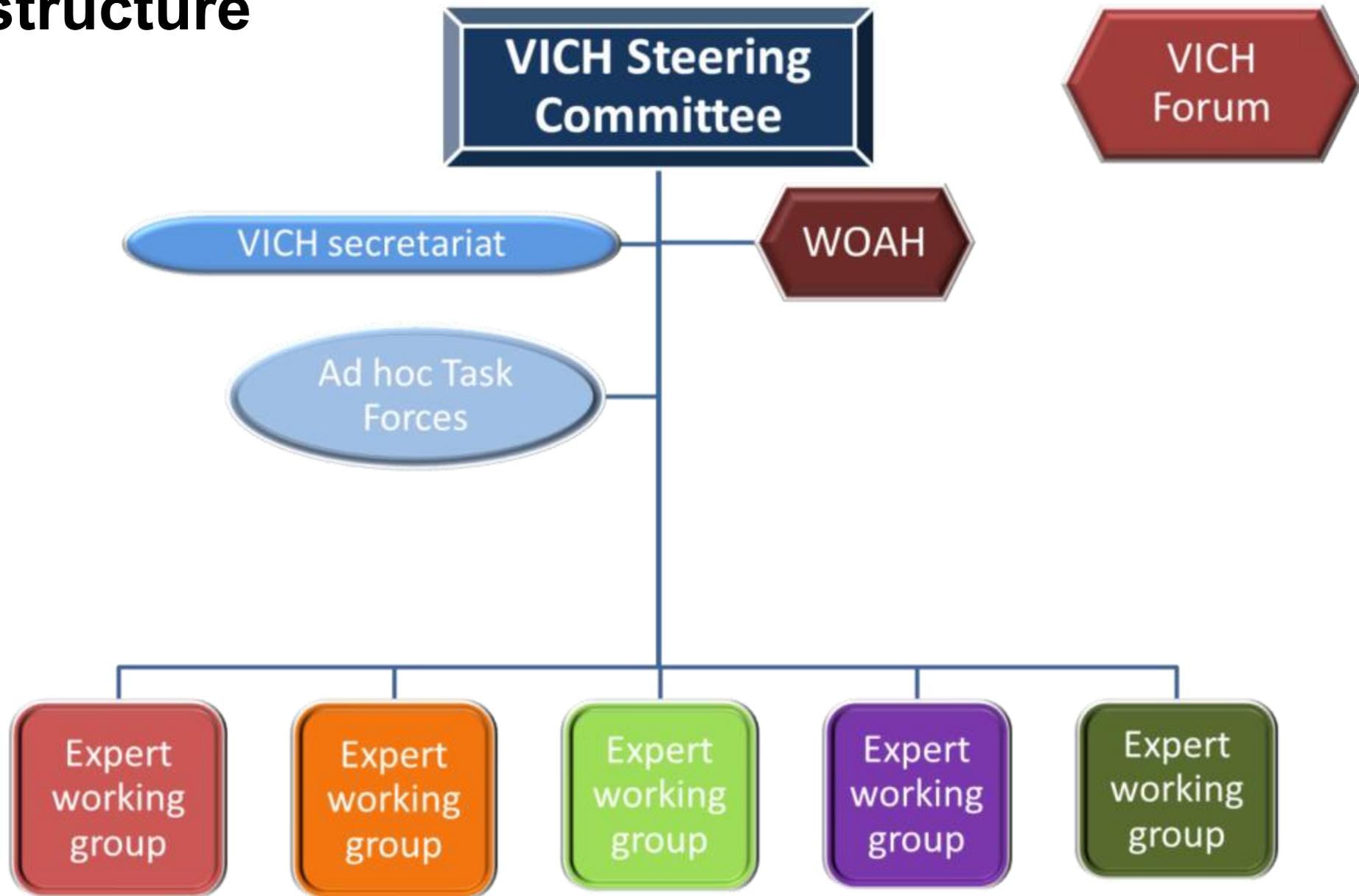


VICH concept paper on principles for technical guidance for the transition to in-vitro methods for batch potency tests in veterinary immunologicals

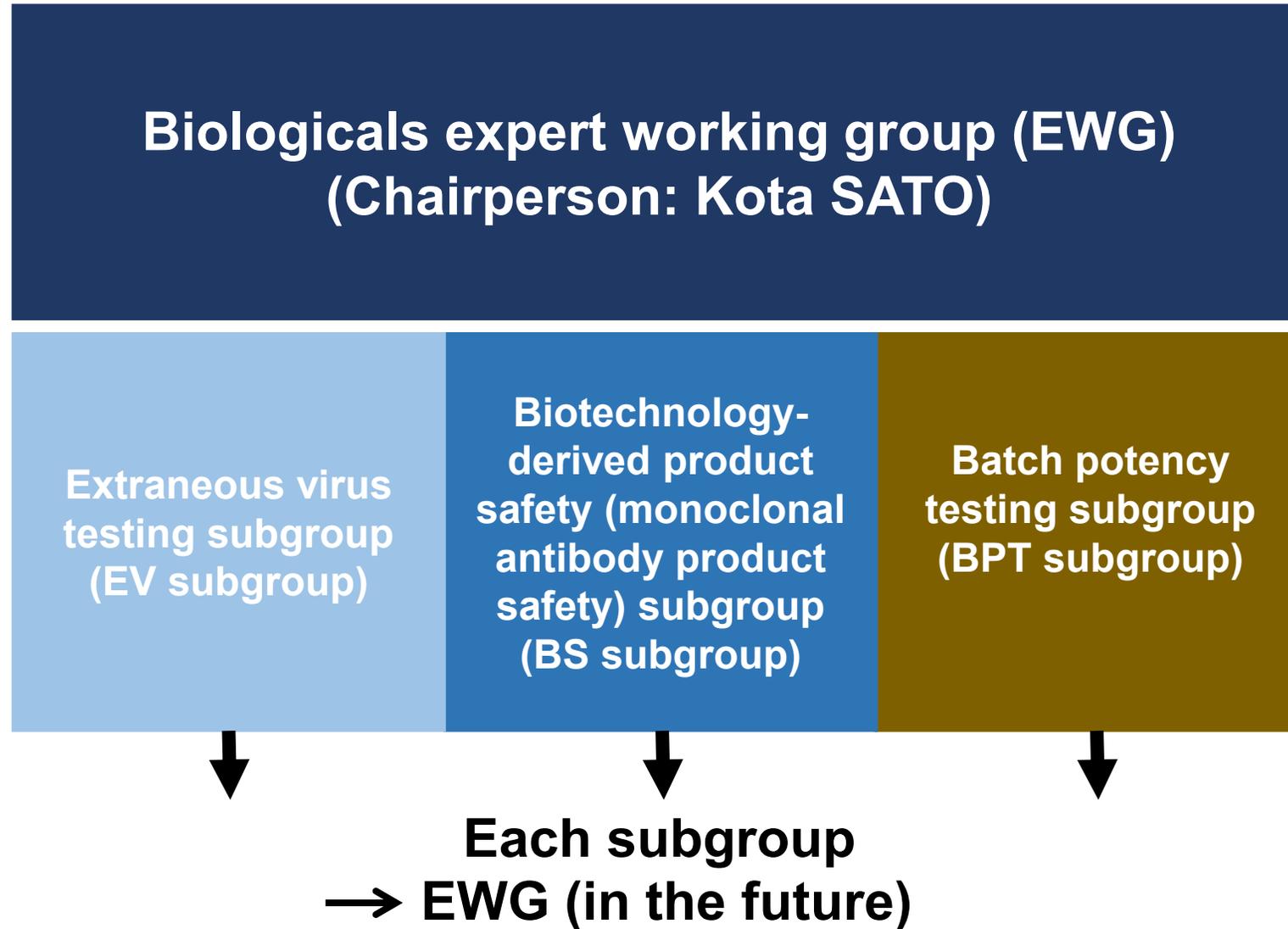
Kota SATO, DVM PhD

**National Veterinary Assay Laboratory (NVAL),
Ministry of Agriculture, Forestry and Fisheries, Japan (JMAFF)**

VICH structure



Structure of Biologicals expert working group



VICH 3Rs Statement

- **At its 19th meeting in 2007 in USA, the SC reiterated its ambition to minimise animal testing**
 - **Support for the 3Rs principle**
 - **replacement, refinement and reduction**
- [Statement of Principle for VICH - Alternatives to Animal Testing (VICH/07/038-Final; 18/09/2007)]

VICH guidelines for veterinary vaccines

Guidelines finalized by 2025

Moisture testing (VICH GL26)

Residual formaldehyde testing (VICH GL25)

Mycoplasma contamination testing (VICH GL34)

Target animal safety testing (VICH GL44)

**Waiver of Target animal batch safety testing (TABST)
(Inactivated vaccine: VICH GL50R)**

**Waiver of Target animal batch safety testing (TABST)
(live vaccine: VICH GL55)**

**Waiver of Laboratory animal batch safety testing (LABST)
(live/inactivated vaccine: VICH GL59)**

What is batch potency test (BPT) ?

- **Considered as efficacy tests**
 - Vaccines may change its efficacy batch to batch
 - Need assurance that a batch will be effective

- **Problems**
 - Possible to use a lot of animals
(e.g. Challenge tests, antibody production etc)
 - May be less precise and reproducible compared to in vitro

Substitution of in vivo tests with in vitro tests

EU: European Pharmacopoeia monograph 5.2.14 “Substitution of in-vivo method(s) by in-vitro method(s) for the quality control of vaccines”

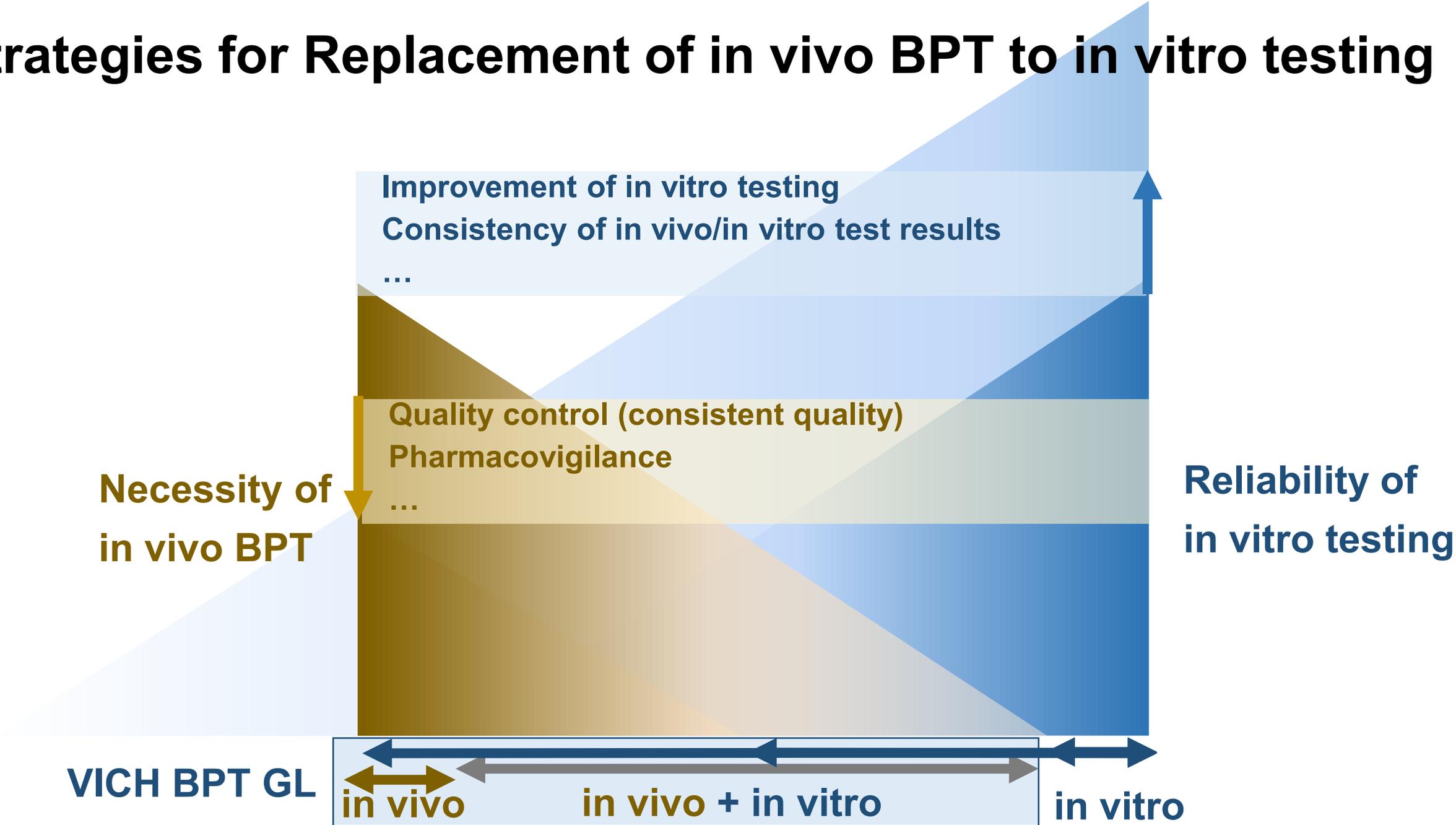
➔ VICH concept paper is based on this document

USA: The 9CFR § 113.8 "In vitro tests for serial release"

Veterinary Services Memorandum 800.112

Japan: Alternative tests to the in-vivo potency testing of live and inactivated vaccines are approved, with or without VICH GL, as long as it is reasonable.

Strategies for Replacement of in vivo BPT to in vitro testing



Can BPTs for vaccines be replaced?

1. To reduce the necessity of in vivo tests

Improvements of quality control system

- Quality of raw materials
- Culture / Purification method
- Seed lot system / GMP standard
- Pharmacovigilance



Quality consistency



Prerequisites

2. To enhance the reliability of in vitro tests

Improvements of in vitro methods

- Scientific advancement

Reproducibility

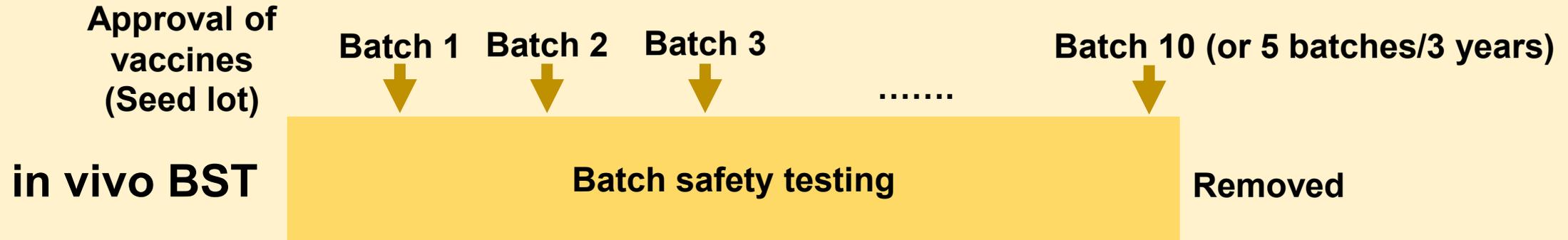
- Compiled results of in vitro/in vivo assays (Repeated batches etc)



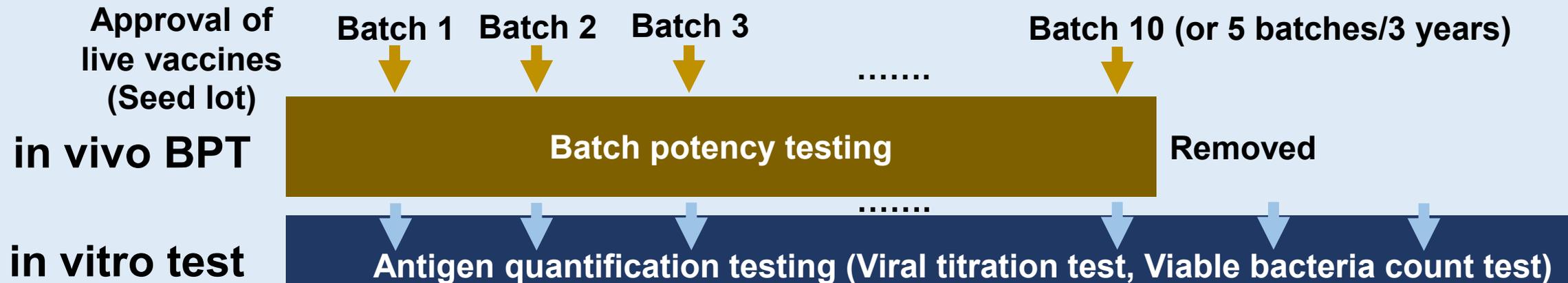
Consistent correlations
(Persistent correlations)

Substitution of in vivo tests with in vitro tests in Japan

Waiver of Batch safety testing (BST; VICH GL 50R, 55, and 59)



TOKUDO application in Japan



Conclusions

- **VIICH is working on the transition to in vitro tests for BPT of vaccines**
- **Consistency (quality/efficacy) will be the key point of this guideline**
- **VIICH guideline will help to enhance the in vitro transition internationally**



Thank you for your attention!

