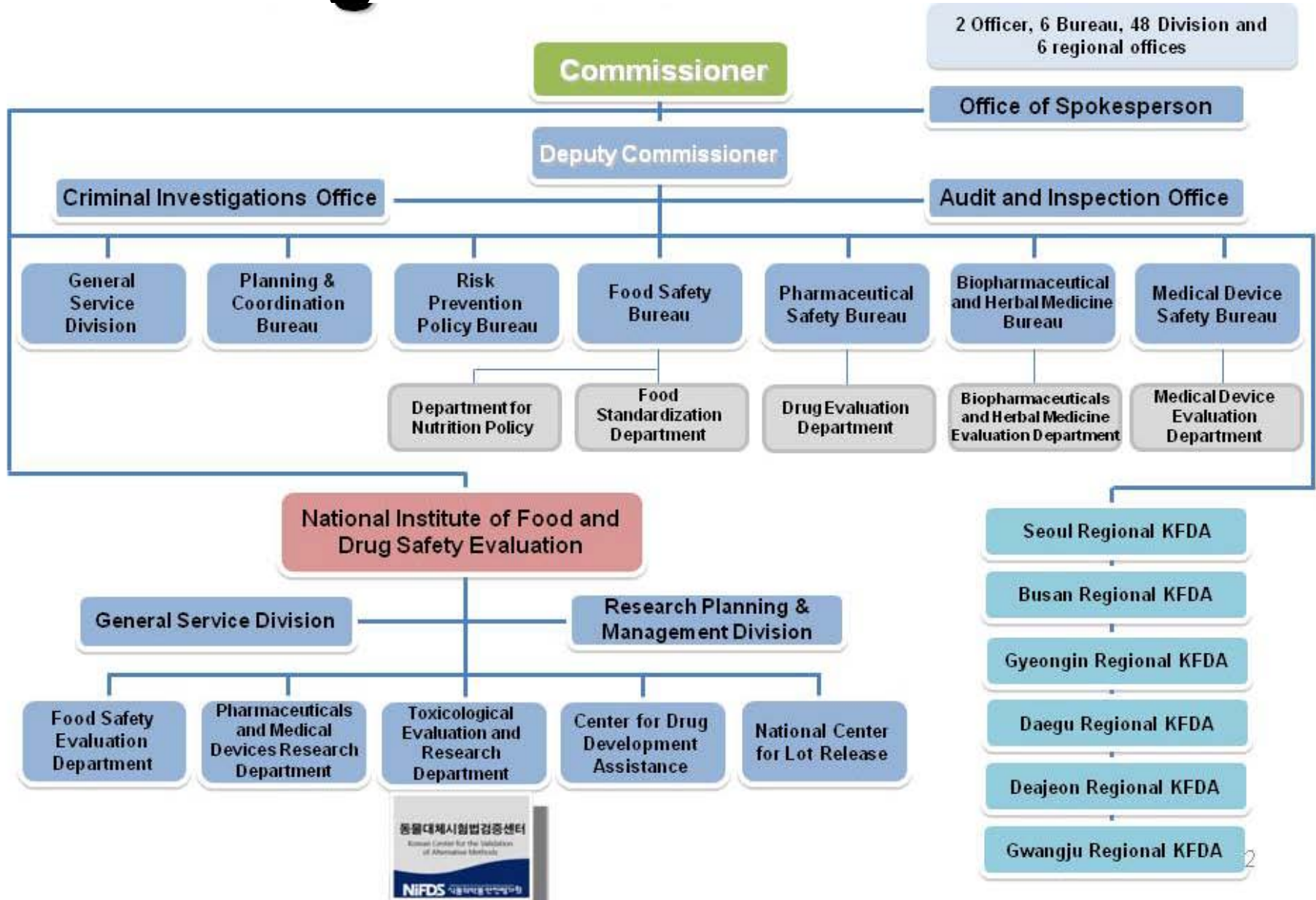


The Korean Center for the Validation of Alternative Methods (KoCVAM): Recent Progress and Future Plans

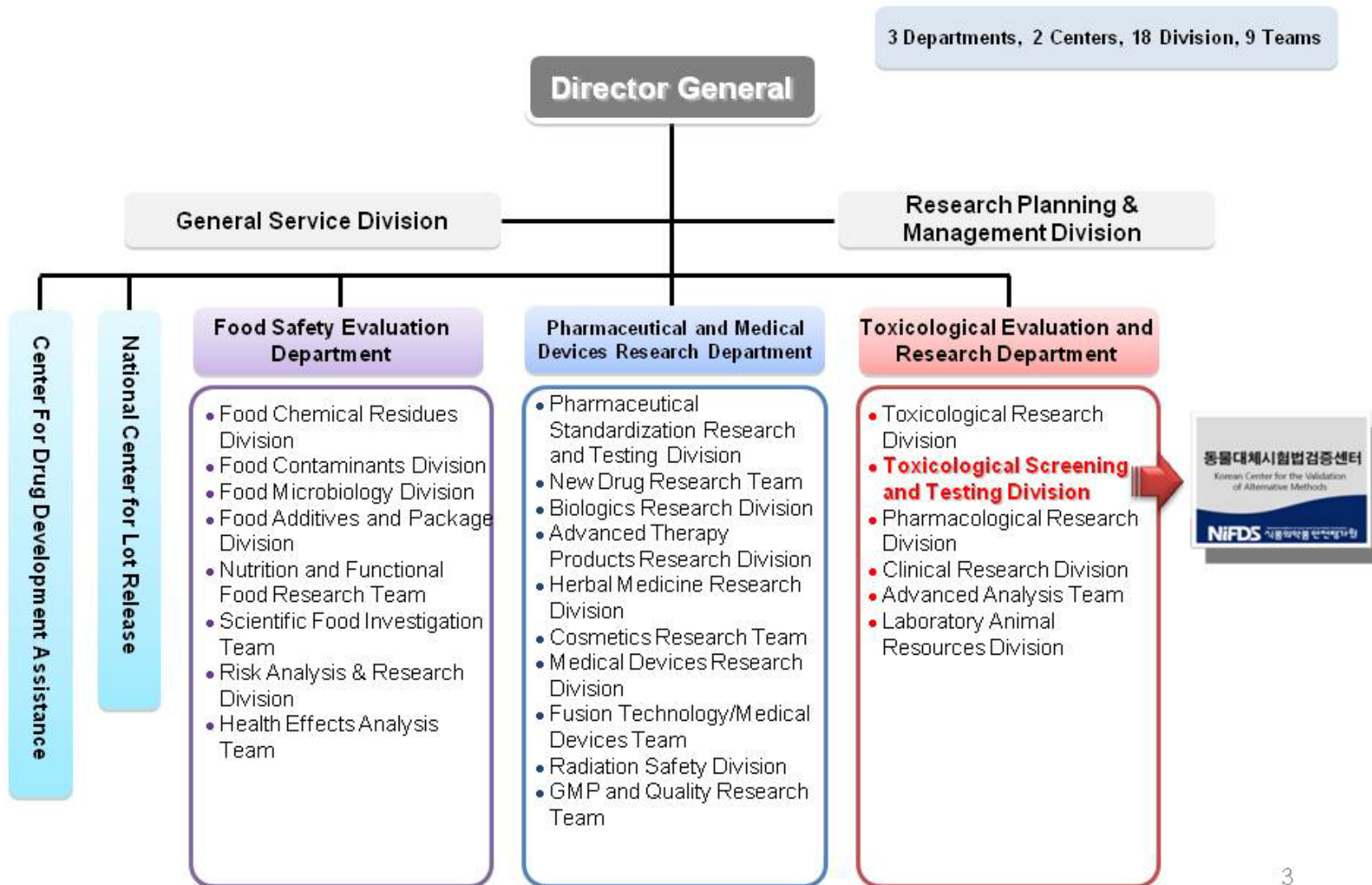
Soon Young HAN, Ph. D.
KoCVAM Director/Director General,
Toxicological Evaluation and Research Department
National Institute of Food and Drug Safety Evaluation,
Korea Food and Drug Administration

Organization of KFDA



Organization of NIFDS

- 3 Departments, 2 Centers, 18 Division, 9 Teams

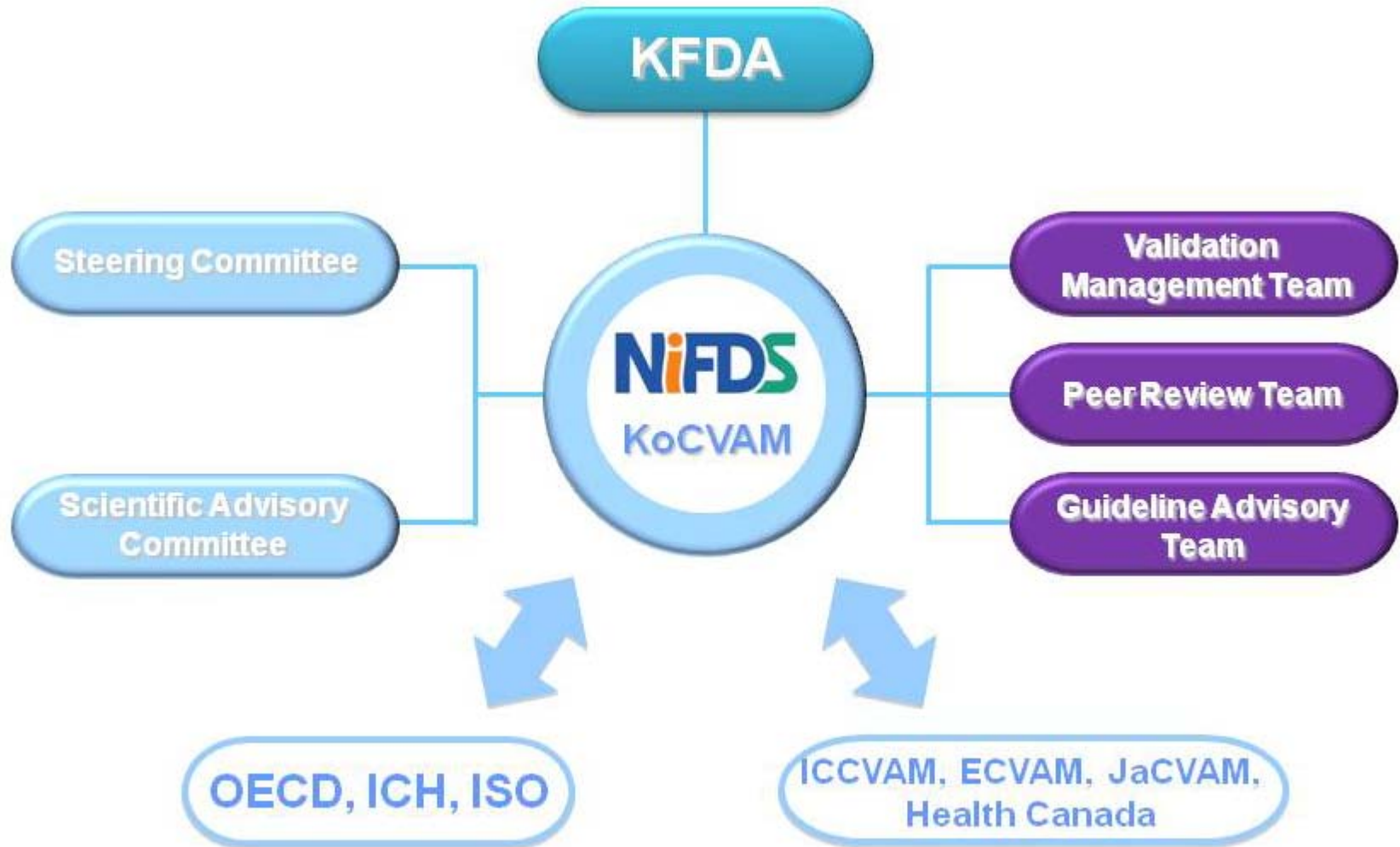


KoCVAM Establishment in KFDA

- Date: Nov, 2nd, 2009
- Director of KoCVAM
 - Dr. Soon Young HAN
- Managing office
 - Toxicological Screening and Evaluation Department
- Legal Basis
 - Laboratory Animal Act (March 28th, 2008)
 - Establishment of policies and their execution on the development and approval of alternative test methods is specified as duty of the commissioner of KFDA



Organization of KoCVAM



KoCVAM's Activities on Study of Alternative Methods

Participation in International Validation Studies (I)

- NICEATM-led validation study: KFDA Lab
 - CertiChem, Inc. MCF-7 cell proliferation assay (2010.8~2011.12)
 - Solubility test of 56 coded substances (Phase I)
 - Range finding test of 56 coded substances (Phase II)
 - Confirmative test of 56 coded substances (Phase III)
- JaCVAM-led validation study
 - *In vitro* alkaline Comet assay (2010.9~2011.2)
 - Phase III pre-validation study (4 substances)

Participation in International Validation Studies (II)

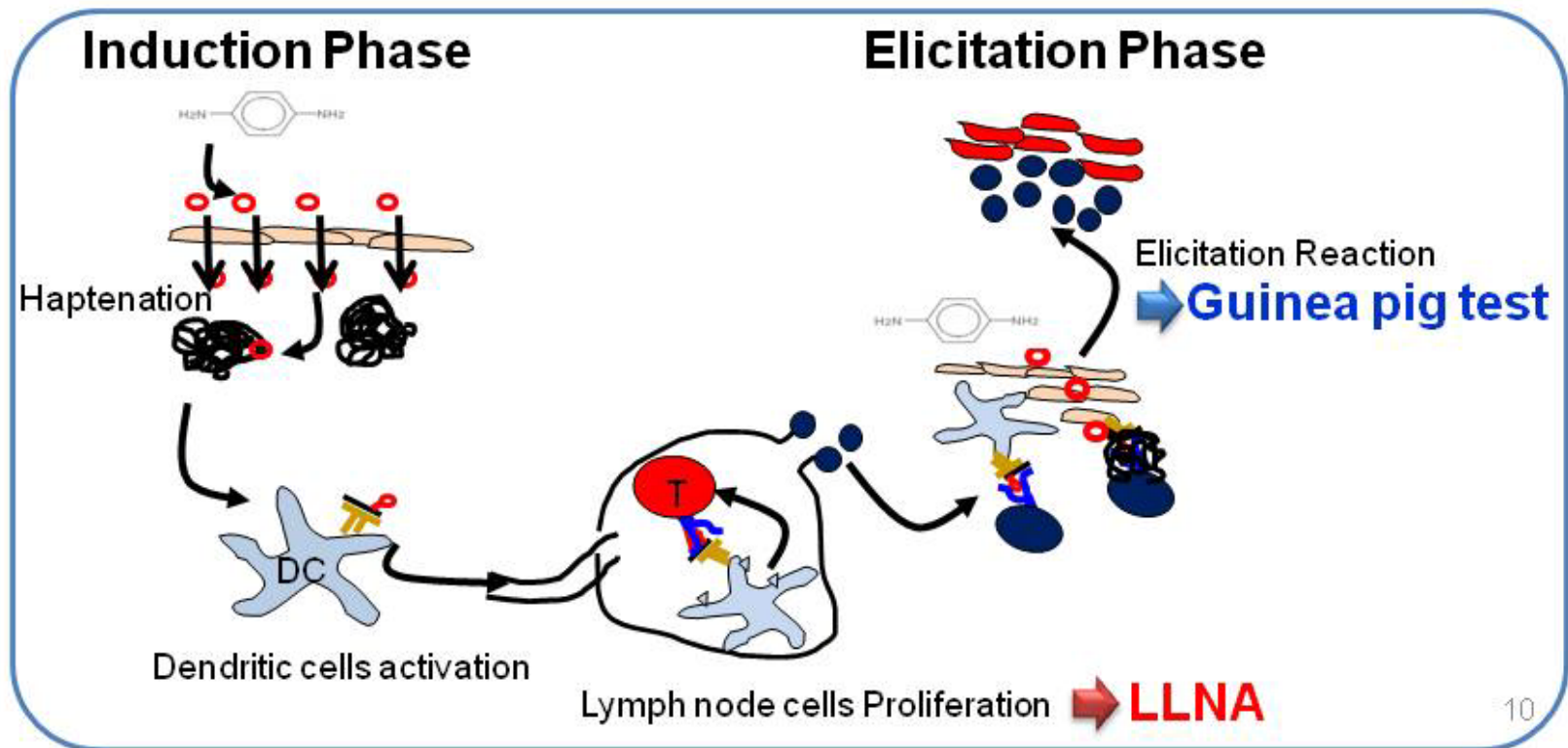
- SMT(Study Management Team)
 - A member of endocrine disruptor SMT
 - LUMI-CELL ER assay
 - CertiChem, Inc, MCF-7 cell proliferation assay
- VMT(Validation Management Team)
 - VMT consultant of *in vitro* Comet assay
- Observer
 - SACATM (The Scientific Advisory Committee on Alternative Toxicological Methods)
 - ESAC (ECVAM's Scientific Advisory Committee)

Study of OECD TG for Adoption into Korean Guideline

- *In vitro* micronucleus test
 - Conduct study according to OECD TG 487 on 10 coded test substances (2009.7 ~ 2010.4)
 - 6 positive and 4 negative substances
 - Participation of 6 CROs in Korea
 - Obtained consistent results for 10 test substances between participating Labs
 - Establishment of *in vitro* micronucleus test in Korea

Ongoing Exploratory Study of Alternatives in Korea (I)

- Non-radioactive local lymph node assay using Flow cytometry(BrdU:LLNA-FC)
 - Mechanism of skin sensitization test



BrdU:LLNA-FC protocol in Korea

BrdU:LLNA-FC		
	Modified protocol (KoCVAM)	MB Research protocol (ICCVAM)
Strain	Balb/c mouse	CBA mouse
Conc.	Reference dose	Pre-tested non-irritating maximum soluble dose
Number of group	5/4 groups (1 VC, 3 test groups)	5/5 groups (1 VC, 3 test groups, 1 PC)
Topical application	25 µl/ear	
Ear swelling	Ear weight (Day 6)	Ear swelling (Day 1, 3, 6)
BrdU Conc.	2 mg/100 µl/mouse	3 mg/200 µl/mouse
BrdU injection	24 hr prior to sacrifice	5 hr prior to sacrifice
Evaluation	Stimulation Index > 3	

- Conducting study according to Performance Standard for LLNA (OECD TG 429)

On Going Exploratory Study of Alternatives in Korea (Ⅱ)

- BCOP(Bovine Corneal Opacity and Permeability) test method including assessment of histopathology
 - BCOP(OECD TG 437) for identifying **ocular corrosive and severe irritants**
 - To explore usefulness of histopathological and histomorphometric evaluation as an additional endpoint for BCOP
 - Evaluate damage of cornea using histopathological and histomorphometric methods on 14 test substances

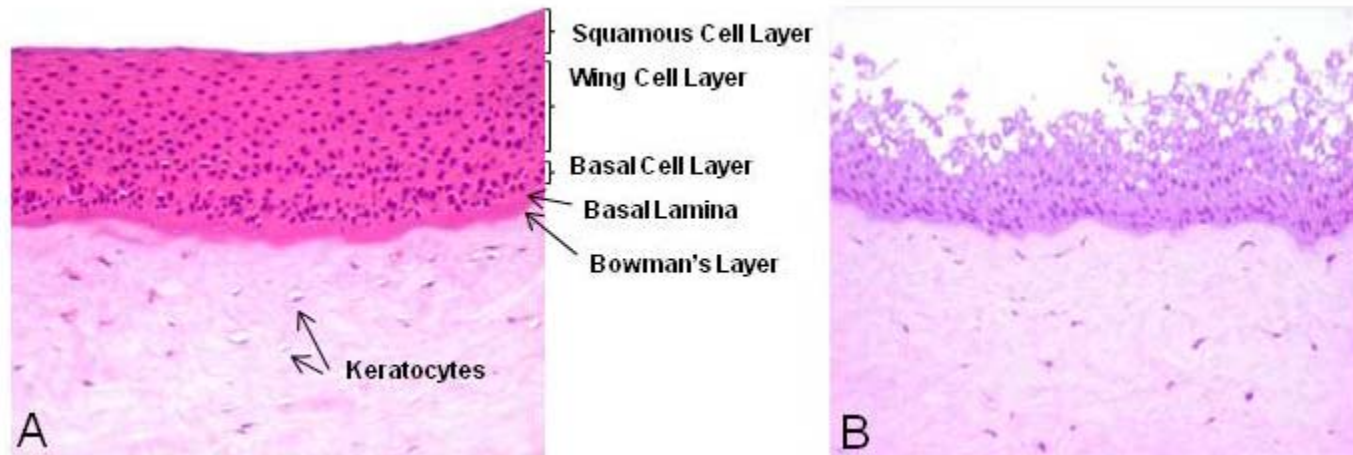
BCOP Test Method

– Methods

- Evaluate degree of histopathological damage based on scoring system
- Evaluate the percentage of thickness of damaged layer

– Suggested usefulness of histopathological and histomorphometric evaluation:

- Determining a mode of action
- Assisting discrimination of the borderline results between categories



Ongoing study on development of *in vitro* biological tests

- Development of *in vitro* test for acellular pertussis vaccine (international collaborative study)
 - *In vitro* histamine sensitization test
- Development of *in vitro potency* assay for Japanese Encephalitis vaccine with ELISA

Future Plans

- BrdU:LLNA-FC
 - Further study to analyze accuracy and reliability of this test methods
- *In vitro* skin sensitization test
 - Exploratory study on *in vitro* skin sensitization test using cell line

KoCVAM's Goal

**Animal Welfare and High-technology
Based Regulatory Science**

Establishment of World-Wide Alternative Test Methods

Development of High Technology-Based Methods

Industrial Application of Safety Assessment

Cooperation with related Organizations

Thank you for your attention



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