European Precious Metals Federation

European Precious Metals Federation

Silver Work Group Meeting

8 October 2019 | Brussels, Belgium

European Precious Metals Federation

Welcome & Introduction

Confidentiality and Competition law

Tour-de-table and apologies

DO	DON'T
Application of competition law	
Art. 101 and 102 TFEU may be applicable to the conclusion of any preliminary agreement and activities of any preliminary phase.	Don't assume that conflicts with competition law are excluded simply by the fact that the Association's Articles of Association and Internal Rules complies with the provisions of the REACH Regulation.
Consultation in Matters of Competition Law	
Consult an in-house legal expert or the compliance officer of your company/association or an external lawyer whenever there are uncertainties respecting compliance with competition law. Stop all meetings/discussions which are not in compliance with these Compliance Guidelines until a legal expert has been involved.	Don't assume that these Compliance Guidelines deal with all competition law issues exhaustively. Basically, compliance with Art. 101 and 102 TFEU can be determined only on the basis of market impact in each individual case. These Compliance Guidelines may therefore be regarded only as a means of providing general conduct recommendations.
Activities in any preliminary phase and at any other stage of operation of the Association	
Restrict cooperation within the scope of the preliminary phase to the initially defined goals and purposes of the cooperation.	Pursuant to Art. 101 and 102 TFEU, activities which have the object of the effect of preventing, restricting and/or distorting competition are prohibited within the scope of the Association's Articles of Association and Internal Rules, including: - Coming to agreement, including arrangements or collusions, about prices, markets and customers (see Art. 101 paragraph 1 a)-e) TFEU); - Joint boycotting of other companies; - The unjustified unequal treatment of trade partners; - The abusive exploitation of a dominating market position.
Exchange of Confidential Information	
Involve a Trustee for the exchange of Confidential Information.	The exchange of Information concerning market behaviour and having the object or the effect of preventing, restricting and/or distorting competition is inadmissible; in particular, this relates to: - Production capacities; - Productions or sales volumes; - Import volumes; - Market shares; - Price policy; - Distribution and marketing terms; - Marketing strategies; - Information regarding the relationship with suppliers.
Documentation on Cooperation	
Keep minutes of all meetings which detail the subject of the meeting. In case of uncertainty, have the contents of the minutes reviewed by an external legal expert prior to sending them to all Members. Stop all meetings which are not in compliance with these Guidelines until a legal expert has been involved.	

Approval of the agenda

- **Welcome and Introduction** *(11:00 - 11:10)*
  - Reminder on Confidentiality and Competition Law
  - Tour de table and apologies
  - Approval of the agenda
  - Approval of the minutes of the last meeting (2 Apr. 2019) and status of action points

- **Silver reproductive toxicity** *(11:10 - 11:30)*
  - EOGRTS Testing Proposal: final decision and timeline
  - EOGRTS: test design and testing preparation Covance

- **Silver read-across and TK study** *(11:30 - 11:50)*

- **CLH proposals silver nitrate and silver** *(11:50 - 12:20)*
  - Science defence
  - Impact assessment

- **Workplan and budget 2020** *(12:20 - 12:30)*

- **AOB, next meetings/calls and closing remarks** *(12:30 - 12:40)*

12:40 – 13:30 Lunch

- **Internal workshop on CLH advocacy** *(13:30 - 17:00)*

FOR APPROVAL

Approval of the minutes of the last meeting (2 April 2019)

Final draft minutes of the meeting on 2 April 2019, circulated on 16 April 2019

APPROVAL OF DRAFT MINUTES

Status action points last meeting (1/2)

	What?	Who?	Status
Water Framework Directive (WFD) prioritisation			
1	Publish results additional freshwater ecotox tests and impact on SSD in peer-reviewed scientific journal	EPMF Sec	**ONGOING**
2	Include results Ag ecotox tests + updated SSD + updated ERVs in Ag dossiers	EPMF Sec	
3	Re-check the exposure data / modelling and re-calculate RCRs	EPMF Sec with Ag registrants	
4	Literature study on mitigating parameters affecting chronic tox of Ag towards freshwater organisms	EPMF Sec (with ARCHE)	
5	Initiate contacts / organise meetings with key MS for advocacy	EPMF Sec (with national industry organisations)	**TO DO** (postponed)
6	Check marine dataset for EQS derivation and suggest additional testing if needed	EPMF Sec	
7	Request offers for well-designed sediment tests for derivation $PNEC_{sed}$ (long term, 3 species, natural sediments low in AVS/OC)	EPMF Sec	
8	Follow-up developments at Eurométaux level on Rapid Removal concept for metals classification + apply to Ag	EPMF Sec	**ONGOING**

Status action points last meeting (2/2)

	What?	Who?	Status
Silver reproductive toxicity – science			
9	Check which elemental Ag forms are covered exactly under the BPR / in the elemental Ag CLH proposal	EPMF Sec	**TO DO** (when elemental Ag CLH proposal available)
10	Identify elemental micron-sized Ag to be tested for TK based on data currently in Ag dossier + input registrants	EPMF Sec	**ONGOING**
11	Organise TE discussion to discuss details of DRF/TK testing (incl. discussion high dose) & contact testing labs in order to start testing ASAP	EPMF Sec	**DONE**
CLH proposal silver nitrate			
12	Check the impact of a Skin Corr 1A classification for AgNO3 internally	AgNO3 registrants	**DONE**
Silver reproductive toxicity – advocacy			
13	Follow-up contacts with ECHA and European Commission; inform them on outcome Kemi call	EPMF Sec	
14	Volunteers to confirm involvement in Ag advocacy network	Ag WG members	
15	Give further input on stakeholders mapping + N. Rajapakse to send contact details Unilever	Ag WG members	**DONE**
16	Continue contacting different stakeholders	EPMF Sec	
17	Draft letter for Ag WG member companies to send to their customers	EPMF Sec	
18	Start broader communication at DU level	EPMF Sec	

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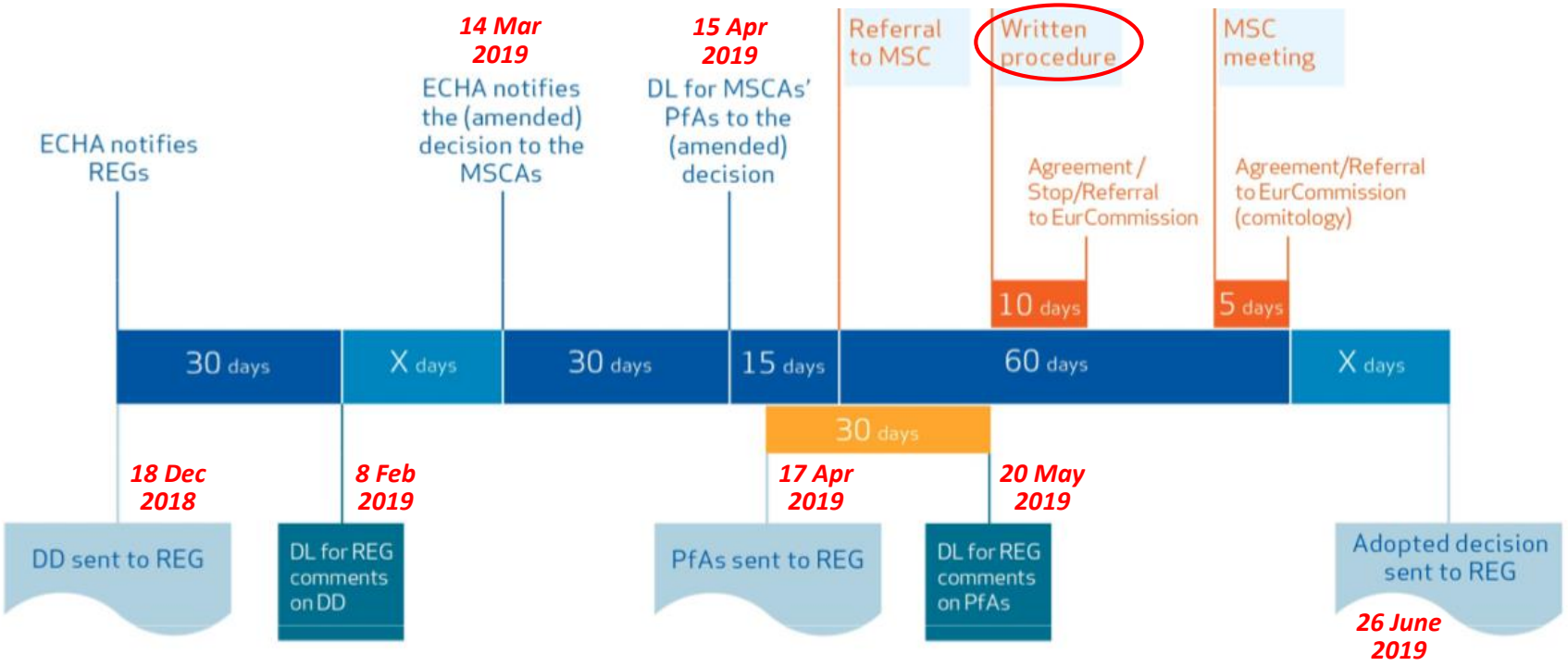
Silver reproductive toxicity

EOGRTS TP: final decision and timeline



- **Draft Decision** Mar 2019: TP accepted by ECHA
- **Proposals for Amendments** (PfAs) from NL: suggestion to add DNT cohort
- **Final decision** received June 2019 (EOGRTs with DIT and DNT cohort)
- **EOGRTS test results to be submitted by 3 January 2022**

EOGRTS TP: Final Decision 26 Jun 2019 (1/3)

- **TP accepted** 👍
- EOGRTS (Annex X; OECD TG 443) in **rats**, **oral route** with the analogue substance **silver acetate** (AgAc):
  - **10 weeks premating exposure duration** for the parental (P0) generation;
  - Dose level setting shall aim to induce systemic tox at the highest dose level;
  - Cohort 1A (Repr tox);
  - Cohort 1B (Repr tox) **without extension** to mate the Cohort 1B animals to produce the **F2 generation**;
  - Cohort 2A and 2B (**Developmental neurotoxicity**) and
  - Cohort 3 (**Developmental immunotoxicity**)
- **Test design / test article as proposed + addition DNT cohort**
- **30 months** to submit the EOGRTS test results

EOGRTS TP: Final Decision 26 Jun 2019 (2/3)

- **Test substance / grouping and read-across hypothesis**
  - ECHA agrees to use of **AgAc** as test material to address potential toxicity of Ag^+
  - **Read-across approach** *'considered **plausible** for the purpose of the TP evaluation'*
  - Final determination on the validity of the read-across approach premature ▶ *'eventual validity of the read-across hypothesis and grouping approach will be **reassessed** once the requested information is submitted'*
  - *'Commission Regulation (EU) 2018/1881 amending the REACH Regulation imposes registrants to submit by 01 January 2020 information specific to nanomaterials under Annexes VI to XI requirements. In that respect, ECHA brings your attention on the particular concerns identified by the PfA resulting from studies on **silver nanoparticles**. In the prospect of ensuring the compliance of your dossier concerning silver nanoparticles by 01 January 2020, we encourage you to take account of the concerns raised by the PfA and to consider the need to propose any further testing.'*

➡ **Stresses importance TK program** (cf. agenda point 3) !!

Agree?

Proposal to include in Ag dossier a RSS for nanoAg referring to ongoing EOGRTS for AgAc + TK work for read-across

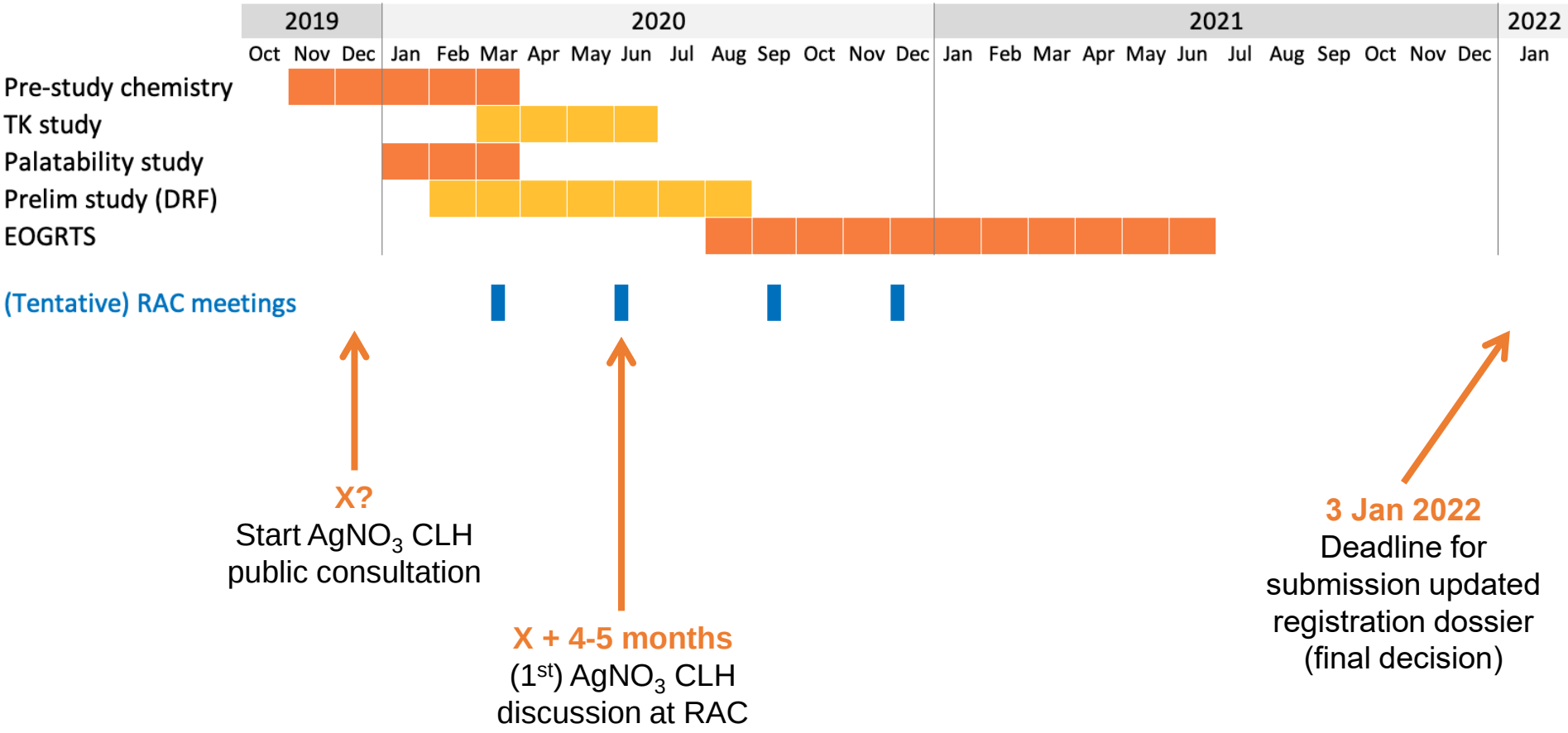
EOGRTS TP: Final Decision 26 Jun 2019 (3/3)

- **Dose-level setting** will be determined based on ancillary / DRF studies, also incorporating TK endpoints
  - ECHA: *'highest dose level shall aim to induce **systemic toxicity**, but not death or severe suffering of the animals, to allow comparison of reproductive toxicity and systemic toxicity. The dose level selection should be based upon the fertility effects with the other cohorts being tested at the same dose levels.'*
  - If no relevant data for dose level setting ▶ report results **DRF** with main study to support justifications of dose level selections and interpretation of results
- **Cohorts 2A and 2B (DNT)** need to be conducted in case of a *'particular concern on (developmental) neurotoxicity'*
  - PfA from NL ▶ existing info on structurally analogous substances from *in vivo* studies ▶ evidence of particular concern for neurotox
  - Charehsaz et al. 2016 ($AgNO_3$): brain **histopath** findings in rats ▶ *'clear evidence of an abnormality in the CNS'* ▶ evidence of neurotox
  - Hadrup et al. 2012 (AgAc): disruption of **neurotransmitter levels** ▶ '*evidence of a specific MoA closely linked to neurotox'*

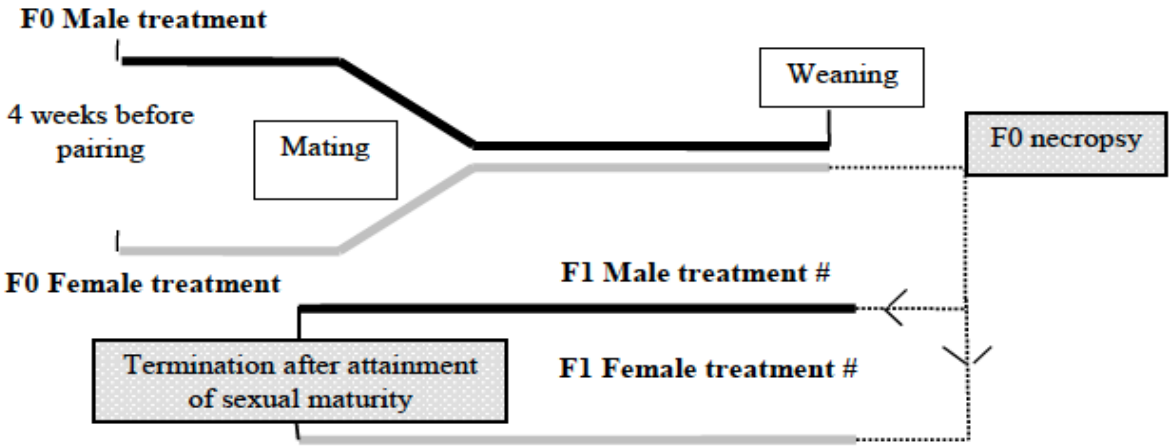
EOGRTS: test design and testing preparation Covance

- Offers requested from several **CROs** for the EOGRTS dose range finder (DRF) test and toxicokinetics (TK) testing + for the EOGRTS itself
- Envigo (now **Covance**) selected:
  - Same CRO for all testing to reduce variability and for reasons of comparability
  - **EOGRTS experience + availability** are key: labs with most experience in full EOGRTS are Charles River and Covance but Charles River no availability
  - Covance also has TK experience with Ag substances
- **Study monitors**:
  - TK: Mark Raffray
  - Reprotox: Lindsay Aveyard
- **Study design** discussed by Ag TE + meeting Covance 28 August

Covance timeline (TBC)

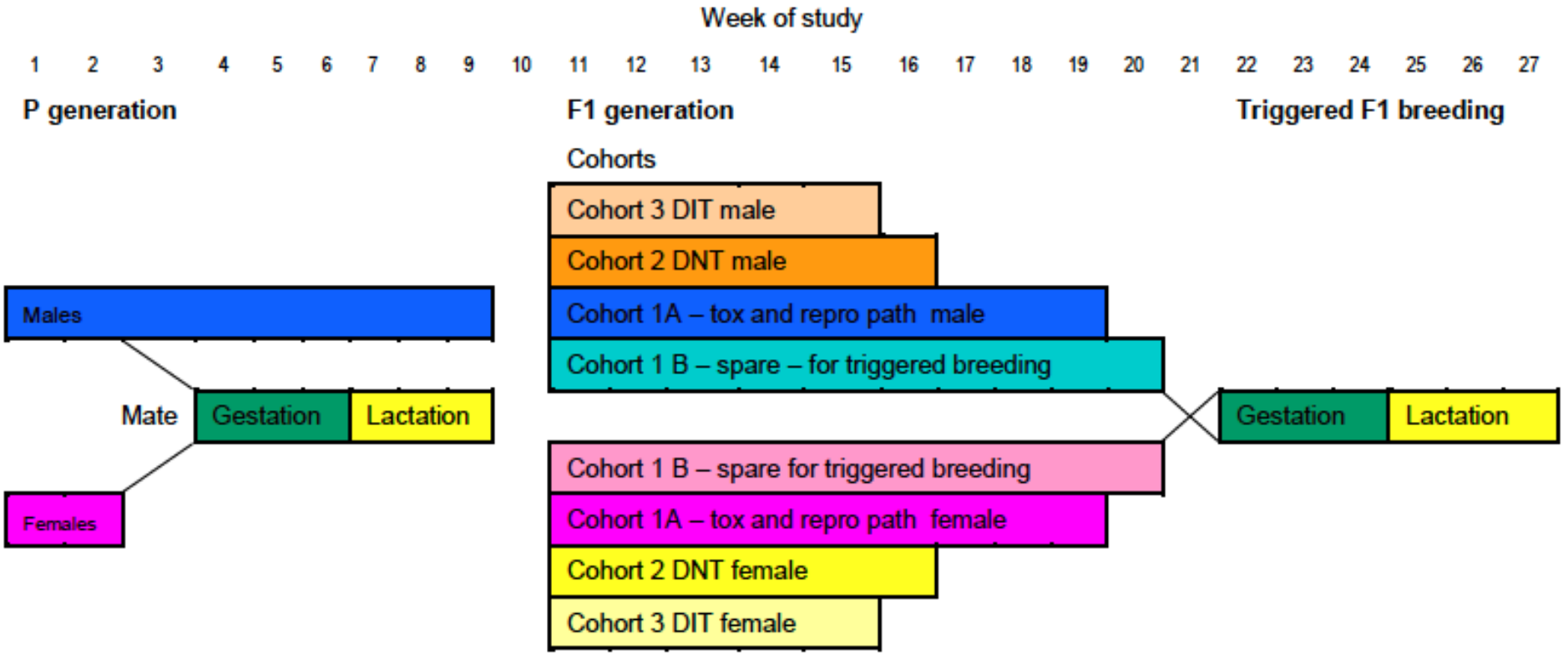


EOGRTS – Dose range finder (DRF) ~ OECD 422



- **Longer dosing** than OECD 422 (~ 17 weeks)
  - F1 offspring will consume treated diet (from mid-lactation to termination) ▶ important for dietary study to avoid risk of doses being toxic for the pups in main EOGRTS
- **4 weeks pre-pairing exposure**
  - Should allow to pick up possible effects on fertility already in the DRF, increasing confidence in the EOGRTS
- **Dose levels**: 175 – 55 – 17 – 5 mg AgAc/kg bw/d
  - Based on available Ag dose level versus effect info
  - Adjusted ppms pre-pairing and post-weaning
- **Additional parameters** integrated for robustness
  - Measurement Ag, Cu, Se, Cp, GPX (indirect toxicity?)
  - Ag measurement in brain pups (cf. **DNT** cohort EOGRTS)

EOGRTS – OECD 443



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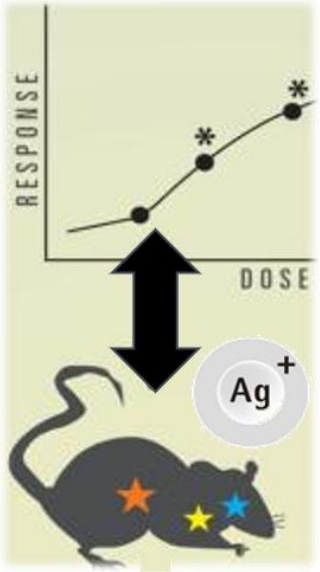
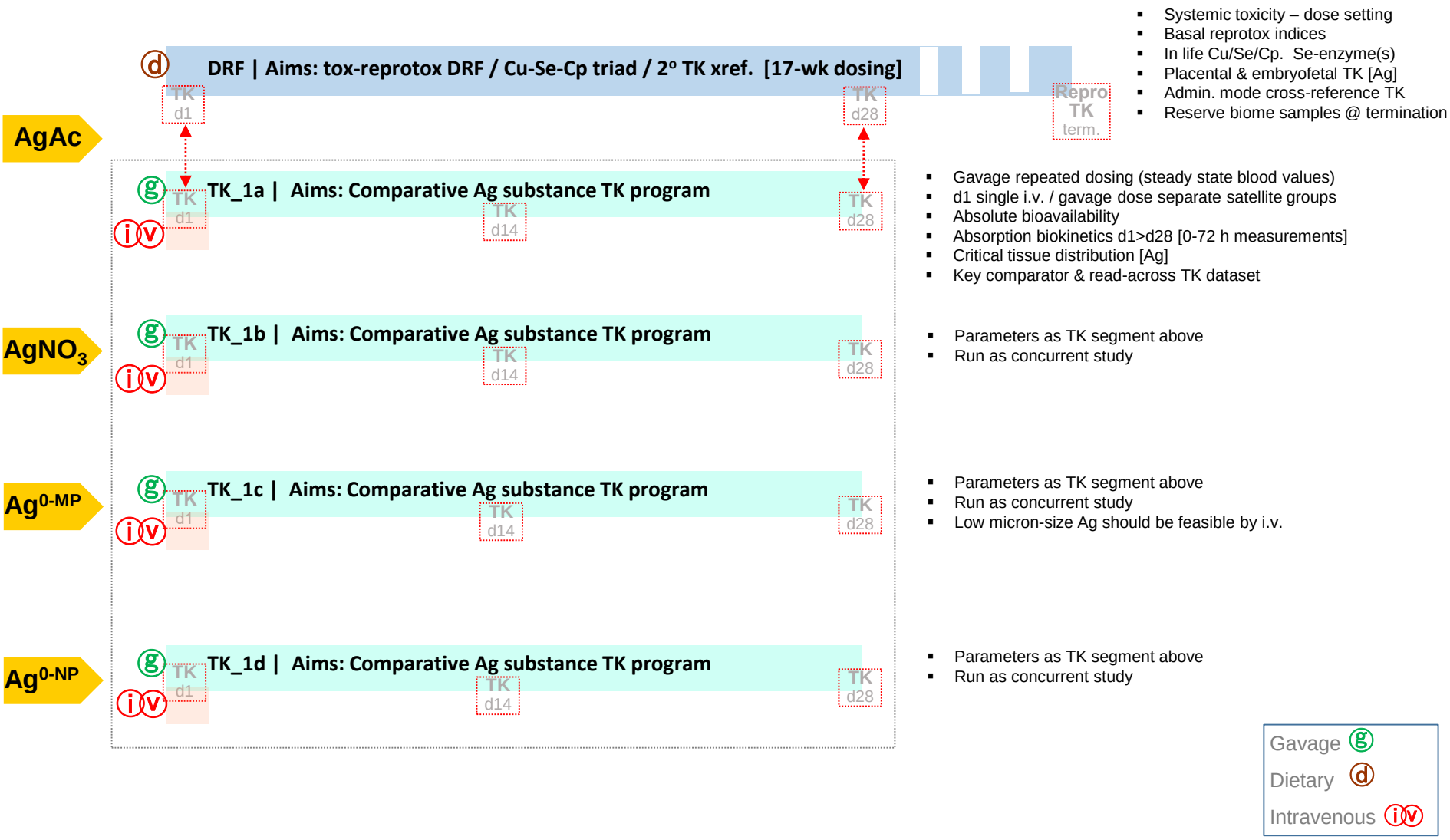
Silver read-across and TK study

Silver read-across and TK study: aims

- Need further supporting test data for read-across approach
- Available **Ag TK** is a patch-work of studies & overall confidence level not optimal ▶ emphasis on proper <u>comparative</u> *in vivo* TK (at least key Ag substances) + potentially modelling (PBTK)
- Ideally differentiate between:
  - elemental Ag and ionic Ag
  - elemental Ag and AgNP
- Test substances for *in vivo* testing:
  - AgAc
  - $AgNO_3$
  - elemental AgMP (micron-sized form without nano)
  - elemental AgNP



Silver read-across and TK study: design (1/3)



- Systemic toxicity – dose setting
- Basal reprotox indices
- In life Cu/Se/Cp. Se-enzyme(s)
- Placental & embryofetal TK [Ag]
- Admin. mode cross-reference TK
- Reserve biome samples @ termination

- Gavage repeated dosing (steady state blood values)
- d1 single i.v. / gavage dose separate satellite groups
- Absolute bioavailability
- Absorption biokinetics d1>d28 [0-72 h measurements]
- Critical tissue distribution [Ag]
- Key comparator & read-across TK dataset

- Parameters as TK segment above
- Run as concurrent study

- Parameters as TK segment above
- Run as concurrent study
- Low micron-size Ag should be feasible by i.v.

- Parameters as TK segment above
- Run as concurrent study

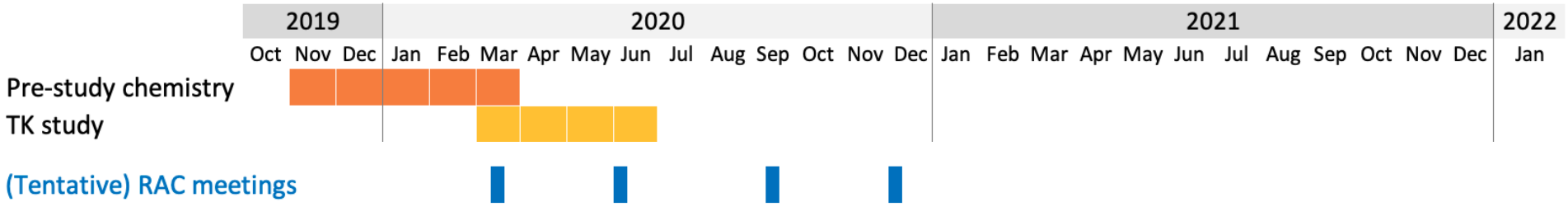
Gavage (g)
Dietary (d)
Intravenous (iv)

Silver read-across and TK study: design (2/3)

- Test design in alignment with **OECD 417**
- Known gender differences in Ag TK ▶ ♂ and ♀ sub-groups required (4 ♂ + 4 ♀)
- Repeated dose gavage segment: 3 dose levels per test item (dose level selection under discussion by TE)
- Single dose (gavage / i.v.) segment: 2 dose levels per test item
- Ag measurements in blood and tissues
- Selection test items (AgNP and AgMP): under discussion by TE
  - **AgNP**: smallest REACH registered AgNP not available; use certified reference material (CRM) instead

Silver read-across and TK study: design (3/3)

- **GLP** compliance TK study
  - **Aim study:** support read-across approach, differentiate elemental Ag / ionic Ag (/ AgNP) for:
    1) dossier update by Jan 2022
    2) RAC discussion $AgNO_3$ / Ag CLH
  - Reliability of current Ag TK dataset is questionable ▶ fully GLP compliant comparative TK study will facilitate regulatory acceptance
  - Suggested at 28 Aug meeting with Covance: GLP compliant blood analysis and non-GLP compliant tissue analysis ▶ some cost savings (± 15%) and time savings but issue of credibility of non-GLP compliant endpoints
  - **Timing fully GLP compliant study:**



Agree?

➡ **EPMF Sec's recommendation:** go for **fully GLP compliant TK study** as this would strengthen use of study for advocacy purposes

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CLH proposals silver nitrate and silver

Recap CLH proposals Ag biocides reprotox (KemI / RAC)

Timing	Substance	Kemi CLH proposal	RAC decision
2015	SZZ	Repr Cat. 1B	Repr Cat. 2
2017	SZ, SCZ	Repr Cat. 2	?
2017	SSZHP	No Repr classification	?
Dec 2018	$AgNO_3$	**Repr Cat. 1B**	?
May 2019	Ag	**Repr Cat. 1B**	?
Soon?	AgCl	Repr Cat. 1B?	?

- **Consequences Repr 1B classification: no consumer uses & meeting SVHC criteria (~authorization)!!**

Silver and silver nitrate CLH: Process and timing

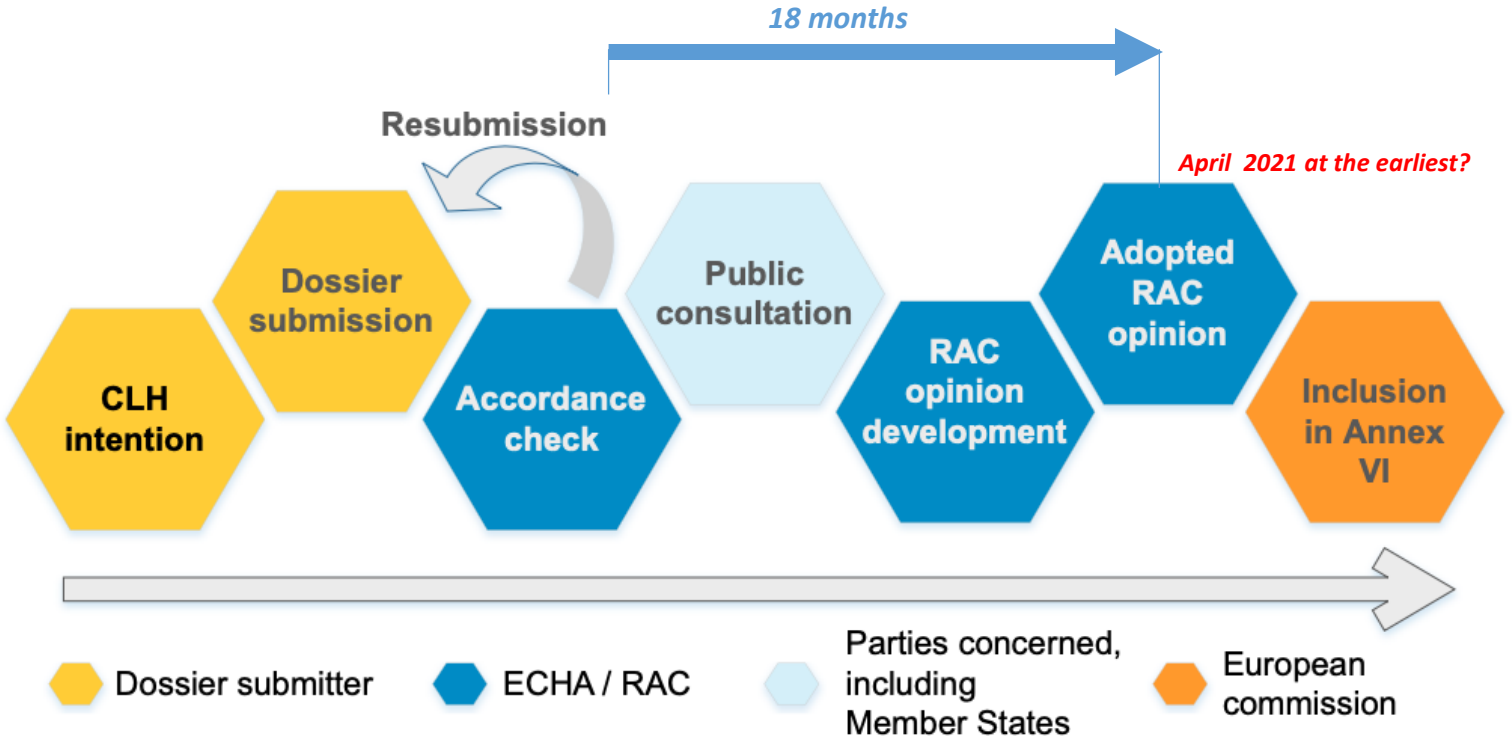


Figure from https://echa.europa.eu/regulations/clp/harmonised-classification-and-labelling

▶ RAC opinion CLH before EOGRTS test results available?

(EOGRTS test results should be available before inclusion in ATP)

Science defence silver nitrate CLH

Kemi CLH proposal	EPMF Classification	Comments based on current weight-of-evidence
Ox. Sol. 1	Ox. Sol. 1	
Acute Tox. 2	-	• Acute tox other Ag compounds low • $AgNO_3$ corrosive but tested up to 100 mg/kg bw/d ▶ no mortality ➡ No basis for classification
Skin Corr. 1A	Skin Corr. 1B	Cf. next slide
Skin Sens. 1	-	• Human evidence very low despite long term industrial experience • Animal studies with other Ag substances: clear negative outcomes ➡ No basis for classification
Muta. 2	-	• No direct human evidence • Outcomes from *in vivo* and *in vitro* studies with several Ag substances do not provide cohesive picture of genotoxicity, with many study outcomes being negative or equivocal ➡ Weight-of-evidence: no firm basis for classification
Repr. 1B	-	Cf. next slides
Aq. Acute 1	Aq. Acute 1	
Aq. Chronic 1	Aq. Chronic 1	

Silver nitrate CLH – Skin corrosion (1/2)

- EPMF performed OECD 431 *in vitro* study (2009) ▶ $AgNO_3$ skin corrosive but TG not validated for subcategorization (1A/B/C) ▶ EPMF decided on **1B** to be in line with CLH at that time
- Several datasets of additional *in vitro* test data since (not assessed by Kemi), belonging to inter-lab validation series for **latest version of TG 431 (18 June 2019)** ▶ 5 validated test methods using commercially available reconstructed human epidermis (RhE) models are included in this TG - results of these test methods for $AgNO_3$ (incl. number of test runs):
  - EpiSkin: 1A (1), 1B (2)
  - EpiDerm: 1A (3)
  - SkinEthic: 1A (3)
  - EpiCS: 1A (2)
  - LabCyte EPI-MODEL24: 1A (3)

  } 12/14: **Skin Corr 1A**
- WoE: **Skin Corr 1A**
- **EPMF Sec's recommendation**: update classification in REACH registration dossier (1B ▶ **1A**) + include this evidence in our comments to the CLH proposal as it is further proof of the overall weak assessment Kemi has performed in the CLH proposal

Agree?

Silver nitrate CLH – Skin corrosion (2/2)

- Classifications in dossier (~ EU CLP tox mixture rules):
  - Solid: Skin Corr 1B ▶ Skin Corr 1A
  - ≥ 5% $AgNO_3$ solution: Skin Corr 1B ▶ Skin Corr 1A
  - 3-5% $AgNO_3$ solution: Skin Irr 2 ▶ Skin Irr 2

- Cut-off between Skin Corr 1A and 1B? ▶ suggestion to **test AgNO3 solutions ≥ 5% $AgNO_3$**

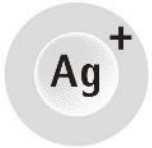
- 50-60% $AgNO_3$ solutions are standard

Relevance for Ag WG members?

Science defence silver CLH

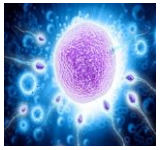
Kemi CLH proposal	EPMF Classification	Comments based on current weight-of-evidence
Skin Sens. 1	-	• Human evidence very low despite long term industrial experience and consumer uses • Animal studies with other Ag substances: clear negative outcome ➡ No basis for classification
Muta. 2	-	• No direct human evidence • Outcomes from *in vivo* and *in vitro* studies with several Ag substances do not provide cohesive picture of genotoxicity, with many study outcomes being negative or equivocal ➡ Weight-of-evidence: no firm basis for classification
Repr. 1B	-	Cf. next slides
Aq. Acute 1	Aq. Acute 1	
Aq. Chronic 1	Aq. Chronic 1	

Science defence reprotox (1/2)



Ag^+ as toxicant: available studies performed on ≠ Ag substances, some containing potential confounding toxicologically relevant moieties ▶ relevance to Ag^+ not always clear ▶ **EOGRTS** with simple Ag^+ substance (AgAc)

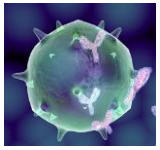
Developmental effects: new data (Sprando et al., 2017) suggests Ag^+ is developmental toxicant ▶ may be reliable study but several deficiencies ▶ **EOGRTS** superior design allowing robust evaluation of reproductive outcomes



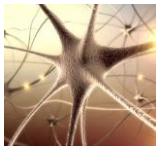
Fertility effects: weight-of-evidence for Ag^+ equivocal: indicators from most available studies unremarkable, Sprando reported effect at high dose only ▶ **EOGRTS** superior design (incl. 10 weeks pre-mating exposure)

Potential for indirect effects: multiple animal studies demonstrating Ag^+/Ag effects on gut biome (dysbiosis) ▶ secondary reproductive effects? ▶ biome investigations will be examined as part of **EOGRTS** ancillary studies

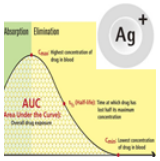
Science defence reprotox (2/2)



Developmental immunotoxicity (DIT): recent study (Babu et al., 2016) suggests possibility of DIT in rat model ▶ several limitations in protocol but industry consider it prudent to investigate further ▶ **EOGRTS** incl. DIT cohort

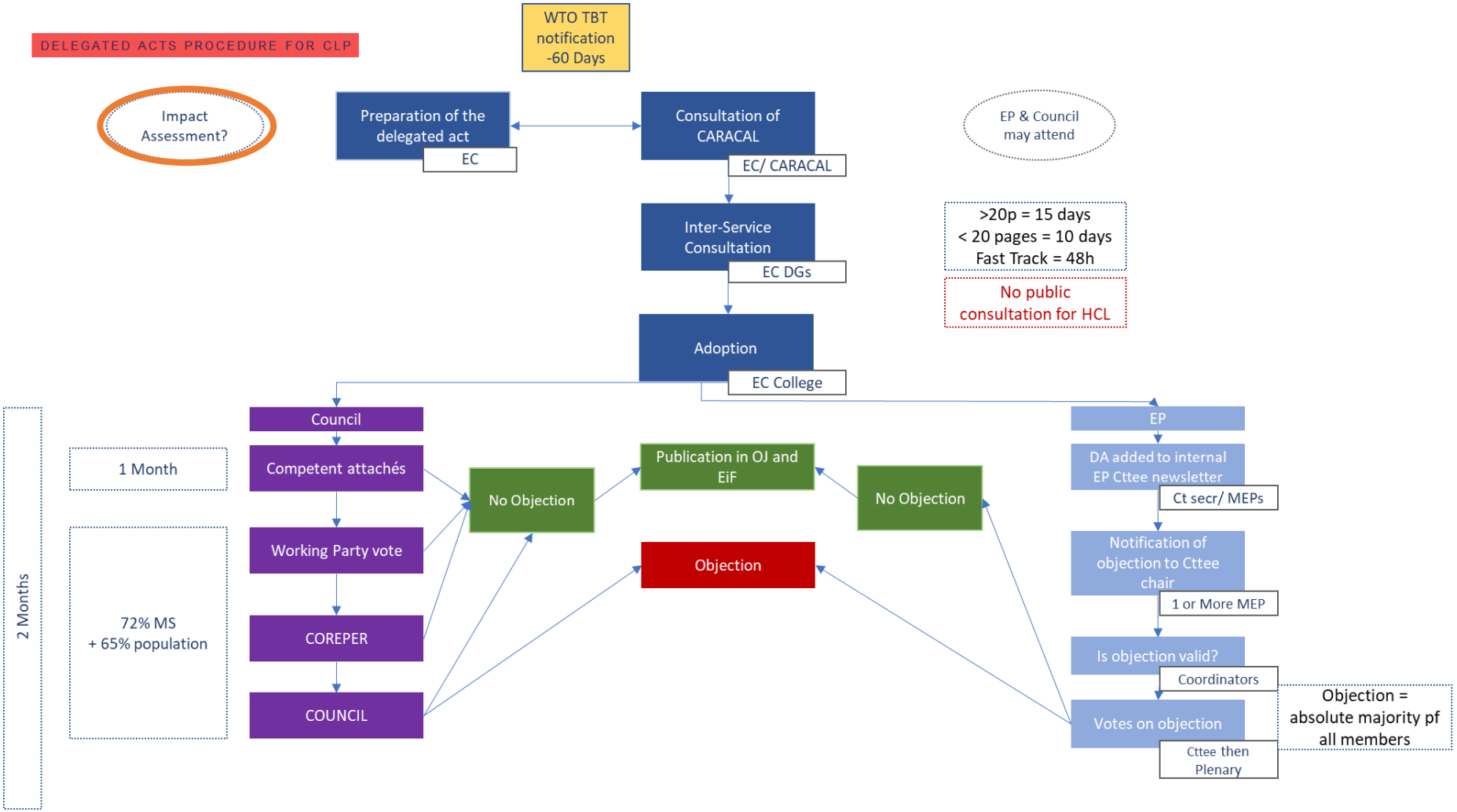


Developmental neurotoxicity (DNT): limited indications of DNT have been described in some studies ▶ do not meet evidential triggers for DNT concerns but industry (and ECHA / MSCAs) consider it prudent to investigate further ▶ **EOGRTS** incl. DNT cohort



Ag toxicokinetics (TK): dataset Ag TK fragmentary and often conflicting ▶ data for secure read-across lacking ▶ EPMF planning comparative TK study and integration of TK parameter assessments in **EOGRTS**

Impact assessment
Background – the new CLH process via delegated act



Impact assessment
Background – the new CLH process via delegated act

- How to trigger an Impact Assessment?

  ⇒ Still unclear

  ⇒ Under the 2016 inter-institutional agreement on better law-making (IIA) the Commission is required to carry out impact assessments of initiatives, including delegated acts, that are "likely to have significant economic, environmental or social impacts".

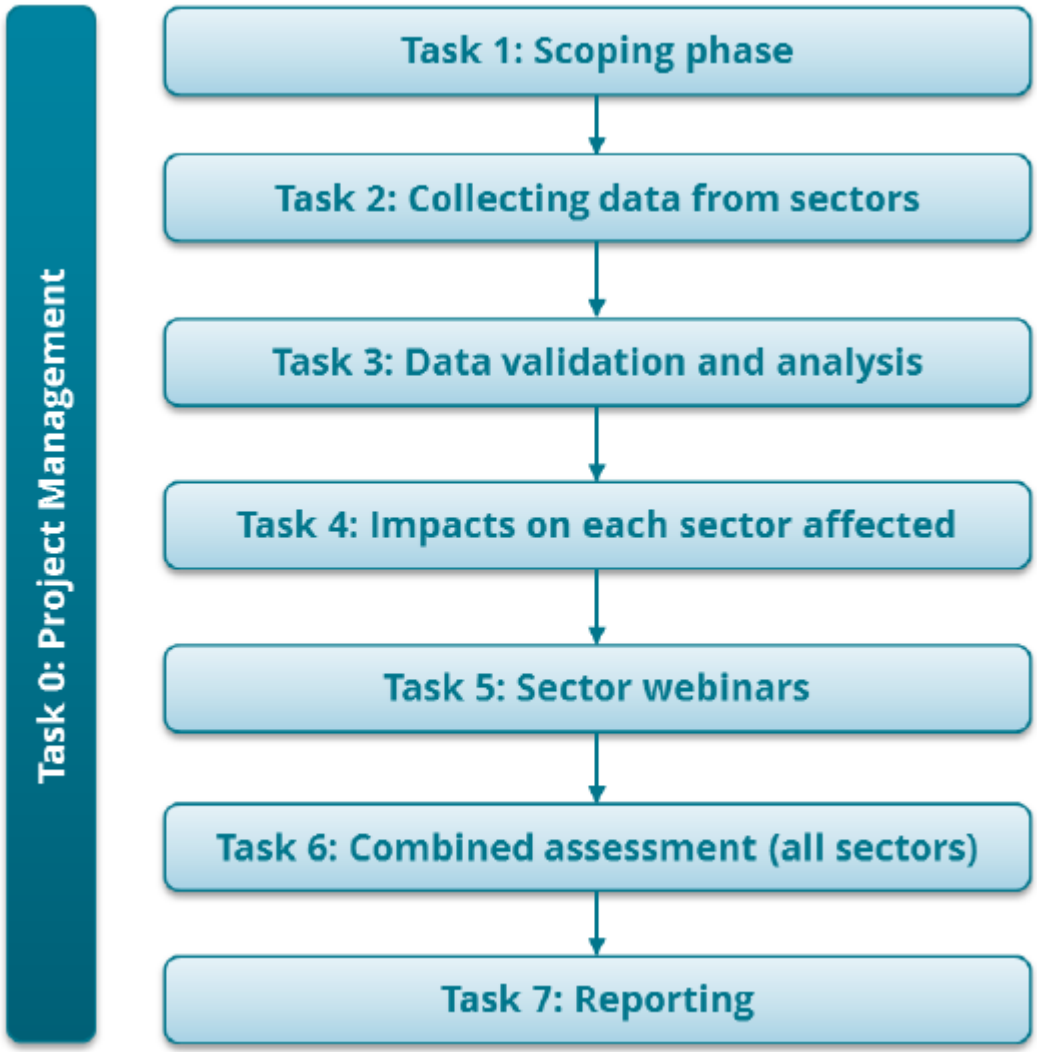
- Important to have strong arguments to demonstrate this significant impacts ASAP!

  ⇒ New project: Impact assessment of possible silver and silver compounds Reprotox cat 1 B classification (EFTEC)

Impact assessment: scope and objectives

- To understand the potential impacts of the reprotox cat 1B for EPMF members and wider EU society prior to any further regulatory actions.
- To gather socio-economic evidence that can be used in wider advocacy work as well as direct input to the ongoing regulatory processes
- To assess the net costs incurred by different actors, including silver compound manufacturers, downstream users, consumers and regulators, as a result of requirements triggered by the harmonised classification as well as potential risks reductions and benefits achieved
- To assess qualitatively the benefits assessment, based on the perceived hazard of silver compounds.
- For sake of robustness, the analysis must also take into consideration alternative compounds and products available to EU consumers that could be used instead of silver compounds

Impact assessment: the project



Impact assessment: timing and deliverables

- October 2019 – July 2020
- Deliverables:
  1. Minutes of the kick-off webinar (date to be fixed)
  2. Scoping note
  3. Survey and interview script
  4. Interview notes (10 notes)
  5. Survey summary statistics
  6. 8 Specific sector draft chapter notes
  7. Presentation slides on each specific sector note (for webinar)
  8. 8 Specific sector final chapter notes
  9. Aggregated Impact chapter note
  10. Presentation slides for aggregated assessment (for webinar)
  11. Draft report
  12. Final report

	1	2	3	4	5	6	7	8	9	10
	Oct-19	Nov-19	Dec-19	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20
Tasks										
1. Scoping phase	D1	D2								
2. Collecting data from sectors				D3						
3. Data validation and analysis						D4, D5				
4. Impacts on each sector affected							D6			
5. Sector webinars								D7 D8		
6. Combined assessment (all sectors)									D9,D10	
7. Reporting									D11	D12
Webinars										
Kick off	W1									
Scoping note		W2								
Draft survey and interview script			W3							
Interview results and online survey summary stats						W4				
Sector specific chapters							W5			
Eight sector specific webinars								W6		
Aggregated impacts chapter note									W7	
Aggregated assessment webinar									W8	
Draft report										W9

Figure 3.1: **Project timescales**

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Workplan and budget 2020

Workplan 2020

- **Dossier maintenance**:
  - Literature review
  - TK testing (budgeted 2019)
  - Sediment testing (budgeted 2018 but not in allocated reserves)

- **Dossier evaluation**:
  - EOGRTS + prelim testing (budgeted 2018 but largely committed ▶ add 400 k€ 2020)

	Budgeted 2018	Budgeted 2019	Total budgeted	Covance offer (TBC) + spent 2018-2019
EOGRTS	900.000 €		900.000 €	970.952 €
Toxicokinetics (TK)	70.000 €	250.000 €	320.000 €	507.500 €
Dose/formulation support, method development	40.000 €		40.000 €	211.691 €
Enabling work (gut biome study, DRF etc.)	150.000 €		150.000 €	357.012 €
Study monitoring costs (10%)	110.000 €		110.000 €	49.032 €
consultancy/design costs and contingency (20%)	230.000 €		230.000 €	28.263 €
TOTAL	1.500.000 €	250.000 €	**1.750.000 €**	**2.124.451 €**

- **Classification & labelling**:
  - Advocacy
  - Impact assessment (taken from reserves)

Budget 2020

1. Ag metal (including nano)	479.300 €	0,7
1.1 REACH registration	0 €	
1.2 REACH dossier maintenance	93.500 €	
1.3 REACH evaluation	200.000 €	
1.4 REACH classification & labelling	60.000 €	
1.5 REACH authorisation	0 €	
1.6 Internal and external fixed Scientific Managers	115.000 €	
1.7 IUCLID IT hosting system	400 €	
1.8 Knowledge Management tool + hosting	400 €	
1.9 Science budget	10.000 €	
2. Ag compounds	510.300 €	0,7
2.1 REACH registration	0 €	
2.2 REACH dossier maintenance	124.500 €	
2.3 REACH evaluation	200.000 €	
2.4 REACH classification & labelling	60.000 €	
2.5 REACH authorisation	0 €	
2.6 Internal and external fixed Scientific Managers	115.000 €	
2.7 IUCLID IT hosting system	400 €	
2.8 Knowledge Management tool + hosting	400 €	
2.9 Science budget	10.000 €	

Budget 2020

2. Silver EQS	**65.379 €**	**0,1**
2.1 Science budget	**10.000 €**	
2.2 Internal and external fixed Scientific Managers	**25.379 €**	
2.3 Advocacy	**30.000 €**	

European Precious Metals Federation

AOB, next meetings/calls and closing remarks

Disilver sulphate: uses to be added for LoA buyer

Life cycle stage	Use description	Chemical products category (PC)	Process category (PROC)	Environmental release category (ERC)	Sector of end use (SU)
Use at industrial site	Use as water treatment chemical	PC 37 Water treatment chemical	PROC 8a Transfer of substance (charging and discharging) at non-dedicated facilities PROC 8b Transfer of substance (charging and discharging) at dedicated facilities PROC 26 Handling of solid inorganic substances at ambient temperature	ERC 6b Use of reactive processing aid at industrial site (no inclusion into or onto article)	SU0 Other (E36 - Water collection, treatment and supply)
	Use as laboratory reagent	PC 21 Laboratory chemicals	PROC 9 Transfer of substance into small containers (including weighing) PROC15 Use as laboratory reagent	ERC 6b Use of reactive processing aid at industrial site (no inclusion into or onto article)	SU0 Other
	Use as in galvanization process	PC 14 Metal surface treatment products	PROC 8a Transfer of substance (charging and discharging) at non-dedicated facilities PROC 8b Transfer of substance (charging and discharging) at dedicated facilities PROC 13 Treatment of articles by dipping and pouring PROC 23 Open processing and transfer operations at substantially elevated temperature PROC 28 Manual maintenance (cleaning and repair) of machinery	ERC5 Use at industrial site leading to inclusion into/onto article ERC 7 Use of functional fluid at industrial site	SU 17 General manufacturing, e.g. machinery, equipment, vehicles, other transport equipment; C29.2 - Manufacture of bodies (coachwork) for motor vehicles; manufacture of trailers and semi-trailers

Next EPMF B2B meetings:

Spring : 31/03-01/04/2020, Brussels
Autumn : 6-7/10/2020, Brussels

THANK YOU

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