



## #01

# Integrated multi-organ toxicity assay in Zebrafish



## EXPECTED DELIVERABLE

**Indicative duration: 6 - 9 months**

The objective is to establish a robust, scalable, and mechanistically informative system capable of detecting multi-organ toxicities during embryonic and larval development of Zebrafish (*Danio rerio*).

The assay must be structured in sequential phases, beginning with a Dose Range Finding (DRF) stage combined with bioanalytical quantification. This initial phase should determine tolerated concentration ranges, compound exposure levels and uptake, and preliminary phenotypic effects. This step could also be part of a go/nogo decision for the whole evaluation or some specific tox assays.

Following DRF, the platform should incorporate a comprehensive battery of organ-specific toxicity readouts. Particular emphasis must be placed on cardiac, neurological, hepatic, and developmental/reproductive endpoints. Expected capabilities include automated quantification of heart rate and rhythm, assessment of neurobehavioral activity, detection of liver morphology and function impairments, and evaluation of developmental progression, fertility-related structures, and teratogenic effects. A deeper evaluation on teratotox should be done and not only limited to Teratogenic Index LC50/EC50. Evaluation of other organ-specific toxicity (e.g. gastrointestinal) could be considered with lower priority.

The system should integrate high-content imaging, behavioural tracking, morphological evaluation and molecular markers where appropriate.



## LONG-TERM COLLABORATION POTENTIAL






**Subject to scientific and strategic alignment**

If the assay proves robust and informative, we could consider integrating it into our internal safety-derisking strategy as a routine early-screening tool to identify and/or de-risk early the potential safety liabilities of small molecules.




## CANDIDATE SELECTION

**Initial eligibility check by MPR. Final selection by the challenge provider.**

	Completion of EDUCATE	Core Module
	Company status	SME under EU criteria
	Maximum number of supported companies	1 - 3
	Minimum required TRL	Proof-of-Concept validation
	Confidentiality NDA/ CDA required	Yes

Selection by the challenge provider based on fit, relevance, readiness and innovation potential.

### Additional selection criteria

	Geographic area	SME from across EU are welcome. SMEs from Interreg NEW are prioritized, particularly partner regions
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## APPLICATION

**Application directly via the STEP4NAMs Moodle platform**



<https://step4nams.moodlecloud.com/>



Scan the QR code to learn more about the STEP4NAMs training programme



## SUPPORT



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