



NIR WATCHDOG

The intelligence layer for physical material verification.

NIR WatchDog turns portable spectrometers into intelligent inspection points:

verify more materials, more often, in seconds.

Active 3-year \$155K design-partner contract



02 · A DAY IN THE FIELD

Michelle inspects suspicious shops every day. Today the lab answers days later.

Counterfeit supplements, chocolate bars and medicines must be checked before they are sold.

TODAY · LAB WORKFLOW



Limited lab budget + capacity

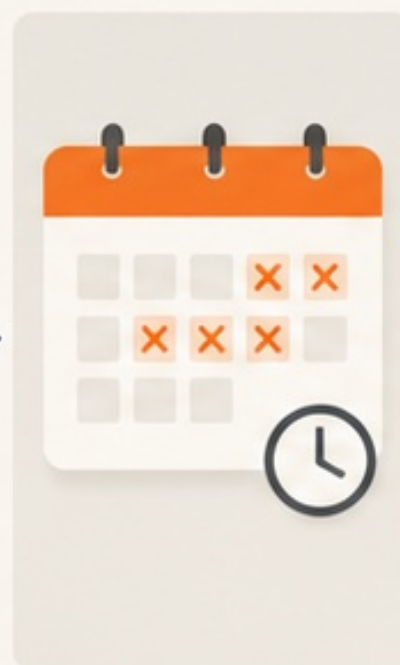
1 Buy sample



2 Send to lab



3 Wait days



4 Too late

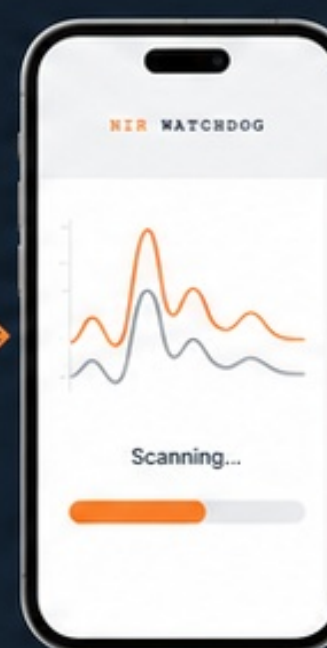


WITH NIR WATCHDOG

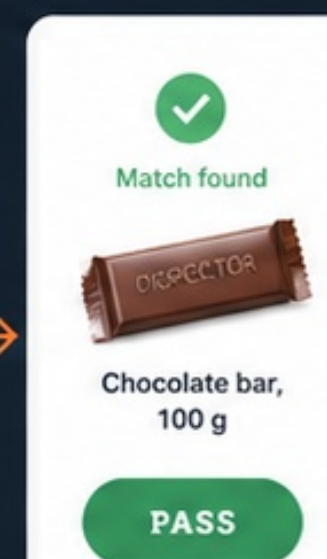
1 Scan in store



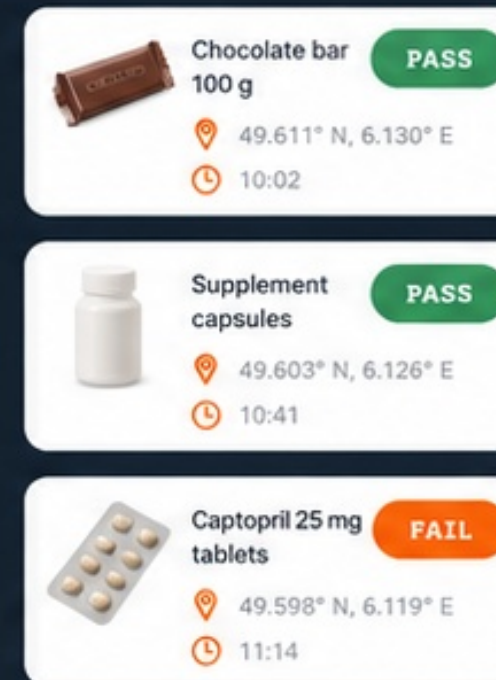
2 Match NIR fingerprint



3 Instant verdict



4 Product + PASS/FAIL + location



NIR WatchDog turns days of waiting into an on-the-spot decision.

Product · NIR fingerprint · PASS/FAIL · geolocation



03 · THE PROBLEM

Companies can identify any material. They cannot afford to check every batch.

Labs are accurate, but central, slow and expensive, so most goods are never tested

COUNTERFEIT IMPORTS · EU

€99B**4.7% of all EU imports**

Global trade in fakes: \$467B, 2.3% of world imports (OECD / EUIPO, 2025)

FAKES STOPPED AT THE US BORDER · FY2025

\$7.3B**79M items seized**

and that is only what gets caught. US brands are the world's most counterfeited (CBP; OECD / EUIPO)

When the material is a medicine, the cost is lives: 267,000 deaths a year are linked to falsified anti-malarials in sub-Saharan Africa alone (UNODC, 2023).

NIR WatchDog brings verification to the point of decision:
portable scanners plus AI, deviations flagged on the spot
ANY solid or liquid material



Researchers who ship, builders who scale

INCORPORATED 2023
UNIVERSITY OF LUXEMBOURG INCUBATOR



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Blockchain & XRPL



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Projects Coordination



From scan to trusted verdict in seconds.

1 SCAN

Any portable NIR device and our app; our own phone-sized device with an embedded NIR sensor is in development. Line, warehouse, border.

2 SCORE

Our engine compares it with **validated reference models**.

- Trained once per material
- device-agnostic.

3 DECIDE

PASS or FAIL in seconds: authentic, deviating or anomalous.

4 PROVE

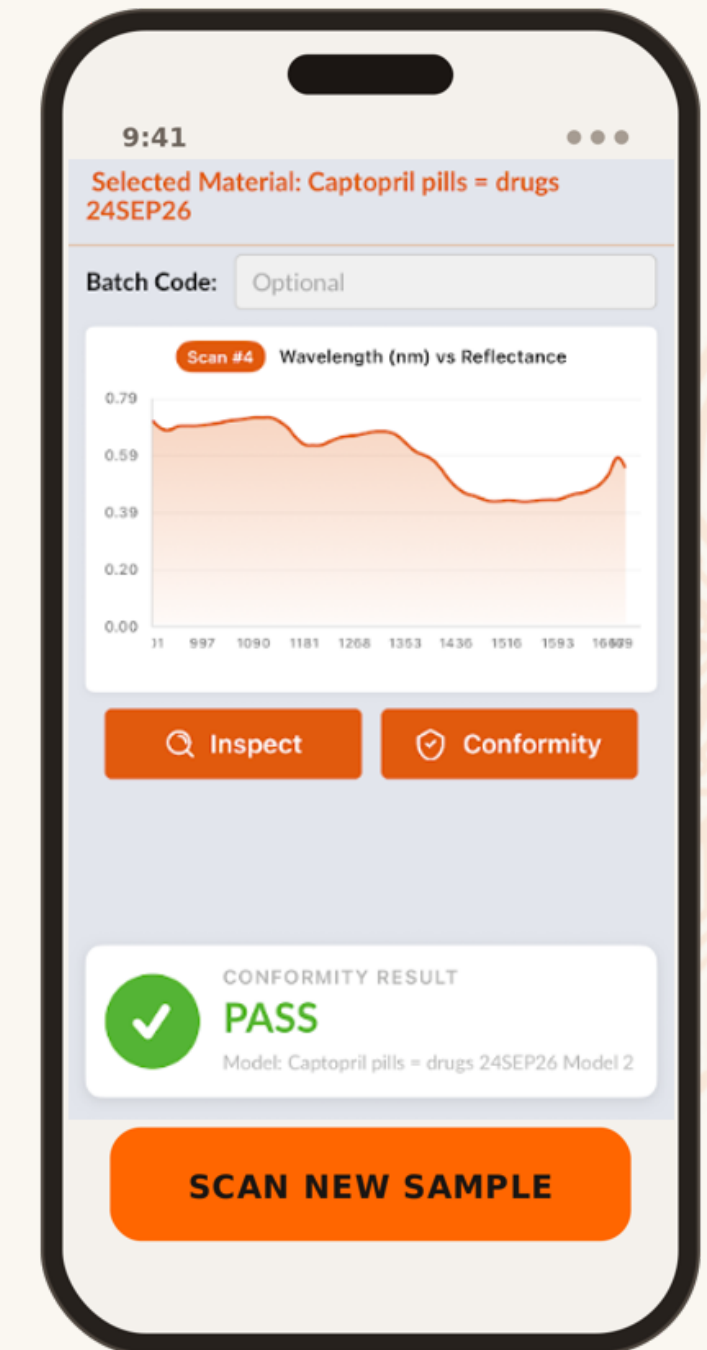
Every scan and model version can be hashed, signed and timestamped on the XRP Ledger: an audit trail regulators can check.

The intelligence layer above scanners, any scanner.

ANY NIR DEVICE

96-99% ACCURACY IN PILOTS

LIVE ON iOS & ANDROID



96–99% accuracy on food and pharma. Commercial since 2023.

New models, new materials, one platform.

96–99%

accuracy across six materials

\$155K

PM International 3-year R&D contract (€132K)

2023

incorporated in Luxembourg

iOS + Android

app live in the stores

VALIDATED MATERIALS

Chocolate packaging 2019–21	96%	Oyster provenance 2024	98%
Paracetamol 2021–22	98%	Water quality 2024	99%
Powders & molasses 2022–23	98%	Food supplements 2025–26	ongoing

COMMERCIAL · SINCE INCORPORATION 2023

2023

Kerry Group research · Ripple XRPL accelerator award

2024

Oyster provenance and water-quality models delivered

2025–26

PM International 3-year R&D contract, ongoing

2026

App live on iOS & Android · US market entry

FNR JUMP GRANT · UNI.LU INCUBATOR · IP REGISTRATION IN PROGRESS

WORKED WITH



The US window is open: enforcement is live, budgets exist.

MARKET READY

Enforcement is live

Drug Supply Chain Security Act (DSCSA) is in force for manufacturers, wholesalers and large pharmacies since 2025. Detecting and removing suspect product is a legal duty, and the FDA is enforcing it. Small pharmacies: exempt to Nov 2027.

A FOCUSED FIRST BUYER

QA leaders

At supplement and pharma manufacturers with an incoming-material inspection workflow. They buy from the quality budget that already exists; no new budget line needed.

A MEASURABLE PILOT

One material, one site

Agreed validation criteria, inspection time, cost per sample and error rate, and a clear path to a full deployment. The product is live: we demo it on the spot.

What we are looking for: design partners who want to prove physical verification on their own materials.



08 · WORK WITH US

Run a prototype with us: **one material, one site, your scanner.**

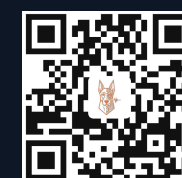
A prototype project is deliberately small: your reference samples, a model we train and validate, and the success criteria agreed up front: inspection time, cost per sample and error rate.

WHAT A PROTOTYPE PROJECT WITH US LOOKS LIKE

Your samples in, a validated model out

Book a 20-minute live demo on your material

Nothing gets past it.



Appendix

- A1 Competition
- A2 Product demo
- A3 How training works



A1 · COMPETITION

Everyone else sells a scanner.
We sell the intelligence layer.

COMPANY · PRODUCT	AI INTEGRATION	MOBILE	NIR DEVICE
Tellspec Food Sensor	● Full	● App + cloud	○ Native only
Consumer Physics SCiO	● Partial	● Native mobile	○ Native only
Si-Ware Systems NeoSpectra	● Full	● Via scan app	○ Native only
Spectral Engines NIROne Scanner	● Partial	● SDK options	○ Native only
B&W Tek (Metrohm) NanoRam	● Limited	● Limited	○ Native only
NIR WatchDog Analytics platform	● Trainable	● Native app	● Any device

● FULL ● PARTIAL / LIMITED ○ TIED TO OWN HARDWARE



A2 · PRODUCT DEMO

We are on iOS and Android

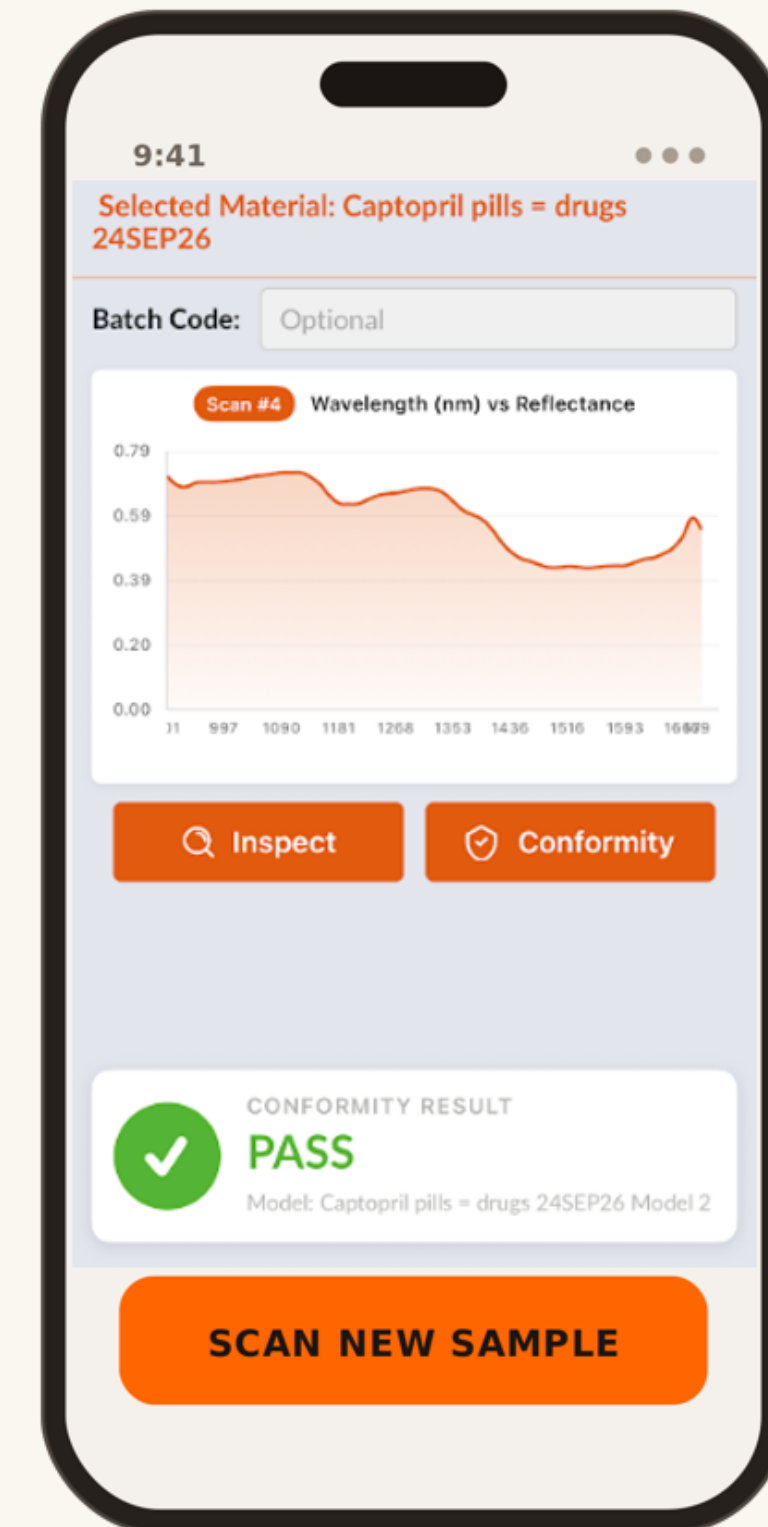
NIR WatchDog is in the app stores. Scan, authenticate and review results from a phone. No lab, no training course.

▶ **Watch the demo video**

youtu.be/ULUV4nAbAE0

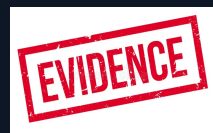
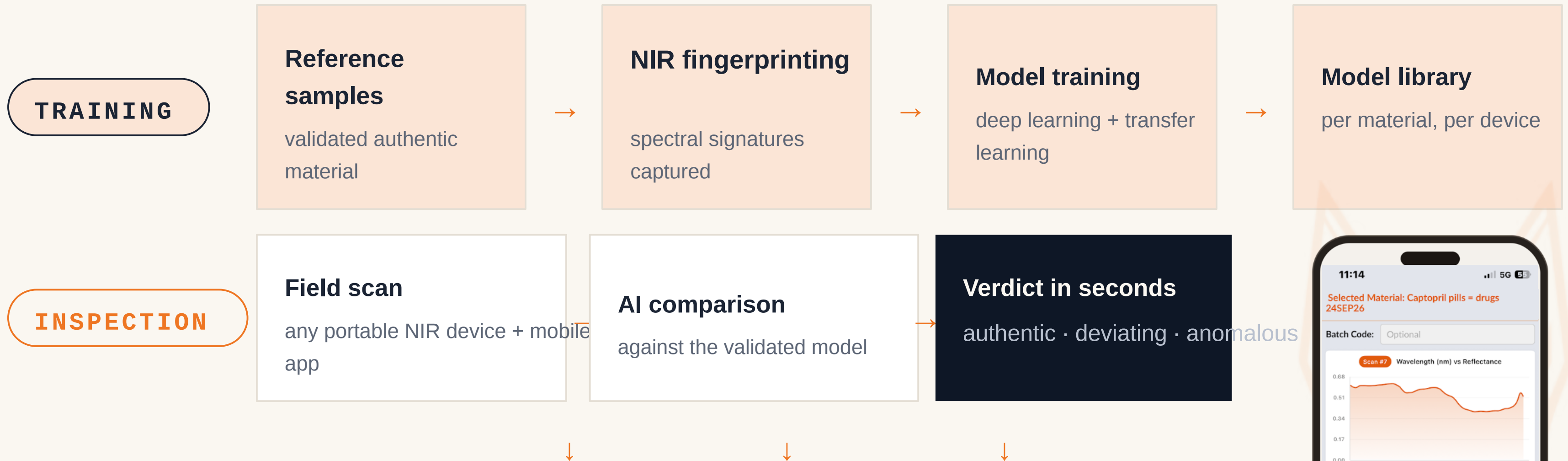
↓ **Download on the App Store**

NIR WATCHDOG · iOS & ANDROID



A3 · HOW TRAINING WORKS

Train once, inspect continuously, prove everything



EVIDENCE ON BLOCKCHAIN

Both flows feed one data-analysis core. Every scan and model version is hashed, signed and timestamped on the XRP Ledger: spectra, device ID, **location**, **result**, an immutable audit trail for regulators and customers.

