

CAPABILITIES STATEMENT

Cold-chain-independent biostabilization for defense medical logistics

1. Company overview

ZORIA Biotech is a deep-tech R&D company headquartered in Kraków, with R&D operations in Rzeszów, Poland — on NATO's Eastern Flank. We engineer biochemical solutions for defense medical logistics. Our proprietary, patent-pending technology removes cold-chain dependency from the transport of clinical samples, pathogens, and biological material in austere and contested environments — addressing a critical vulnerability in Class VIII (medical materiel) supply chains.

2. Core capability — ZORIA T-37

A drop-in stabilization medium for expeditionary biosurveillance, tactical MEDEVAC, and global diagnostic hubs. It preserves biological sample integrity without refrigeration, power, or cold-chain consumables.

- **Pathogen biostasis** — Reversible metabolic arrest of prokaryotic cells for >72 h at 37 °C. Validated on ESKAPE-group pathogens (KPC-producing *K. pneumoniae*, MRSA *S. aureus*); MIC/MBC profiles preserved post-stasis.
- **Cold-chain elimination** — Zero reliance on electricity, refrigeration, or dry ice; designed for body-temperature carry in tropical, desert, and contested environments.
- **Preliminary biocompatibility** — Initial screening (*Lepidium sativum* germination assay) showed no cytotoxic or genotoxic signal; formal mammalian validation per ISO 10993-5 planned.
- **CLSI M40-A2 aligned** — Stasis performance within M40 acceptance criteria (+1.0 / -3.0 log CFU/ml), tested beyond the standard protocol (72 h at 37 °C vs. standard RT / 4 °C).

3. Key differentiators

- **Inverted design philosophy** — Unlike conventional media that starve bacteria, ZORIA T-37 uses a nutrient-rich, redox-engineered matrix — an active approach that achieves stasis where passive media fail.
- **Extreme thermal resilience** — Validated at sustained 37 °C for 72 h — the harshest thermal profile published for any transport medium in its category.
- **Reduced logistical footprint** — Removes dry ice, cold packs, insulated packaging, and temperature-monitoring hardware from the transport chain.
- **Geostrategic positioning** — R&D base in Rzeszów — 90 km from the Ukrainian border, a primary NATO logistical hub, directly relevant to allied medical support missions.

4. Validation & maturity

- **Technology Readiness Level (TRL)** — 4.
- **Intellectual property** — Patent pending — Application No. P.454716, Patent Office of the Republic of Poland.
- **Regulatory target** — EU IVDR 2017/746 — In Vitro Diagnostic Medical Device.

5. Company data & codes

NAICS	325414 Biological Product Mfg · 325413 In-Vitro Diagnostic Substance Mfg · 541380 Testing Laboratories & Services · 541714 R&D: Life Sciences
Legal entity	P.S.A. (Simple Joint-Stock Company)
Registered	ul. Cegielniana 4A/15, 30-404 Kraków, Poland
R&D operations	Rzeszów, Poland (NATO Eastern Flank)
KRS	0001233200
VAT / NIP	PL6793362450
CAGE / NCAGE	9CWKH
Unique Entity ID	QDCDE7K23WC5

6. Point of contact

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