

Novel Selective FLT3 Inhibitors for Targeted Acute Myeloid Leukemia Therapy

A nitrogen-heterocyclic chemotype inhibiting mutant FLT3 with sub-micromolar potency and real selectivity — IP-protected, preclinical, and open to partnership.

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A biomarker-defined AML population, a documented unmet need, and 27 patent-protected compounds — one already an in vivo candidate.

The opportunity

≈ 30%

of AML patients carry an FLT3 mutation — a clear, testable biomarker.

≈ 30%

five-year survival in AML — approved FLT3 drugs limited by selectivity, resistance and toxicity.

Growing

market for targeted AML therapeutics; room for a better-tolerated, resistance-aware agent.

Positioning options: **first- or second-line** treatment, **combination therapy**, or the **resistance** setting after current inhibitors fail.

The challenge it answers

- AML: aggressive, poor prognosis, **~30%** 5-year survival.
- **FLT3-ITD / TKD** drives ~30% of cases; constitutive signalling.
- Midostaurin / gilteritinib: **limited selectivity**, acquired resistance, adverse effects → discontinuation.

The technology

- **27** multi-fragment heterocyclic FLT3 inhibitors.
- **7-azaindole / aminopyridine** scaffolds → precise H-bonding, selectivity, solubility.
- Scalable synthesis (reductive amination, Suzuki–Miyaura).
- Sub-μM IC₅₀ in FLT3-mutant lines; selective vs non-mutated cells.

Evidence to date

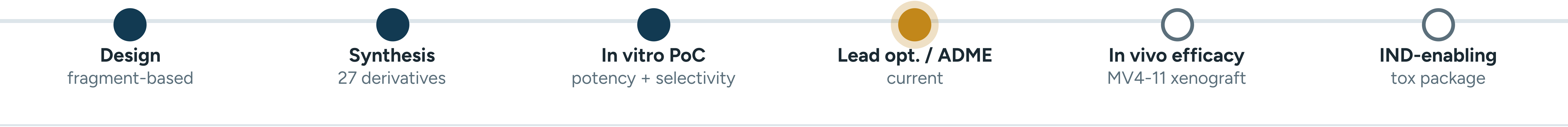
COMPOUND	FLT3-ITD IC ₅₀ (μM)	MV4-11 GI ₅₀ (μM)	LLE
Lead K1872	1.26	0.79	4.7
Compound 47	0.096	0.32	6.9
Compound 48	0.092	0.36	7.5
Compound 60 — in vivo candidate	0.163	0.16	8.9

Selectivity — 139-kinase panel: FLT3-ITD 0.18 μM vs FLT3-WT 0.32 μM, JAK2 0.60 μM, RET 1.1 μM.

Tolerability — NOAEL > 15 mg/kg in mice, maintained on repeated 5+2 dosing over two weeks.

ADME — microsomal t_{1/2} > 1000 min; plasma stability 97% at 120 min for compound 60.

Development status & path forward



IP-protected & available for partnership

PCT patent application filed (26/11/2025) — composition of matter, synthesis, formulations and therapeutic use in FLT3-mutated AML.

Open to **licensing**, co-development of a clinical candidate, or **spin-out**. Contact the CTBT technology-transfer office — www.ctbt.cz.