**Supplementary Material**

**Supplementary Table S1 Reasons for study drug discontinuation**

| Reasons for discontinuation | Venetoclax + LDAC (*n* = 143) | Placebo + LDAC (*n* = 68) |
|---|---|---|
| **Randomized, *n*** | 143 | 68 |
| Treated, *n* (%) | 142 (99.3) | 68 (100) |
| Discontinued venetoclax/placebo, *n* (%) | 117 (81.8) | 63 (92.6) |
| **Primary reasons for venetoclax/placebo discontinuation, n (%)** | | |
| AE (related to disease progression) | 5 (3.5) | 3 (4.4) |
| AE (unrelated to disease progression) | 15 (10.5) | 6 (8.8) |
| Patient withdrawal | 8 (5.6) | 8 (11.8) |
| Physician decision | 8 (5.6) | 8 (11.8) |
| Disease progression[a] | 17 (11.9) | 12 (17.6) |
| Morphologic relapse[b] | 23 (16.1) | 3 (4.4) |
| Treatment failure[c] | 18 (12.6) | 13 (19.1) |
| Death | 18 (12.6) | 8 (11.8) |
| Other | 5 (3.5) | 2 (2.9) |

*AE* adverse event, *CR* complete response, *CRi* CR with incomplete hematologic recovery, *LDAC* low-dose cytarabine.

[a]Disease progression is defined per European LeukemiaNet recommendations: 50% increase in bone marrow or peripheral blasts over baseline or new extramedullary disease. [b]Morphologic relapse is defined as the reappearance of ≥5% blasts after CR/CRi in peripheral blood or bone marrow or the

development of extramedullary disease. [c]Treatment failure is defined as failure to achieve CR, CRi, partial response, or morphologic leukemia-free state, or death from any cause.