Movie S1. Control mice for the ATRi experiment with animals injected with AML<sup>MLL</sup> cells after treatment with vehicle A short video illustrating the overall appearance of mice that were transplanted with AML<sup>MLL</sup> cells and that received no treatment (only vehicle), recorded with no magnification on day 25 after the transplant of the leukemic cells. The video relates to the data reported in Figure 3.

## Movie S2. Mice injected with AML<sup>MLL</sup> cells and treated with ATRi on the prevention protocol.

A short video illustrating the overall appearance of mice that were transplanted with AML<sup>MLL</sup> cells and that received a treatment with ATRi on the prevention protocol, recorded with no magnification on day 25 of the experiment. The video relates to the data reported in Figure 3.

# Movie S3. Mice injected with AML<sup>MLL</sup> cells and treated with ATRi on the therapy protocol.

A short video illustrating the overall appearance of mice that have been transplanted with AML<sup>MLL</sup> cells and that received a treatment with ATRi on the therapy protocol, recorded with no magnification on day 25 of the experiment. The video relates to the data reported in Figure 3.

#### Movie S4. Control mice for the ATMi experiment with animals injected with AML<sup>MLL</sup> cells after treatment with vehicle

A short video illustrating the overall appearance of mice that were transplanted with AML<sup>MLL</sup> cells and that received no treatment (only vehicle), recorded with no magnification on day 25 after the transplant of the leukemic cells. The video relates to the data reported in Figure 4.

# Movie S5. Mice injected with AML<sup>MLL</sup> cells and treated with ATMi on the prevention protocol.

A short video illustrating the overall appearance of mice that have been transplanted with AML<sup>MLL</sup> cells and that received a treatment with ATMi on the prevention protocol, recorded with no magnification on day 25 of the experiment. The video relates to the data reported in Figure 4.

## Movie S6. Mice injected with AML<sup>MLL</sup> and treated with ATMi on the therapy protocol.

A short video illustrating the overall appearance of mice that were

transplanted with AML<sup>MLL</sup> cells and that received a treatment with ATMi on the therapy protocol, recorded with no magnification on day 25 of the experiment. The video relates to the data reported in Figure 4.