

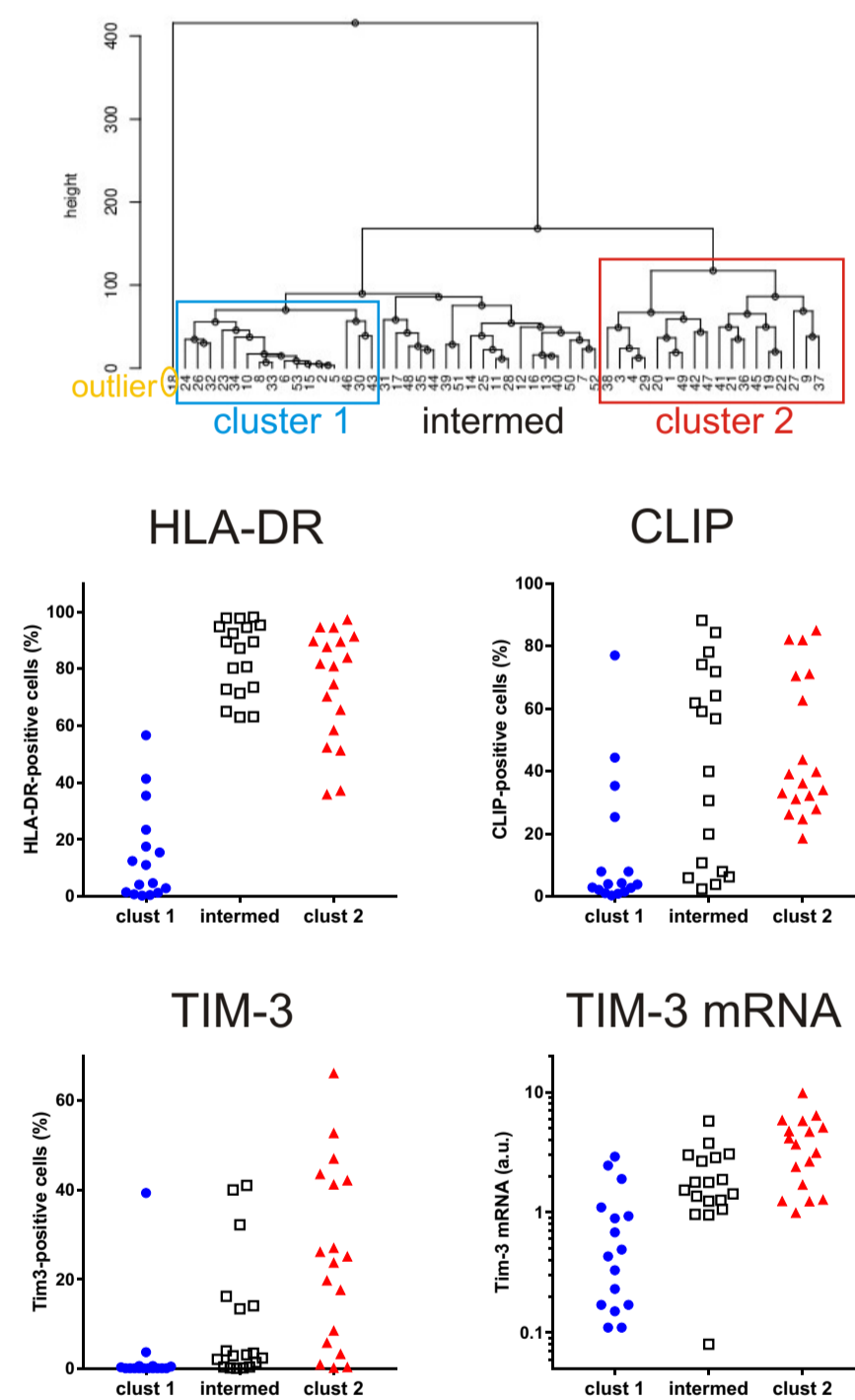
# TIM-3 expression and markers of immune escape on leukemia cells

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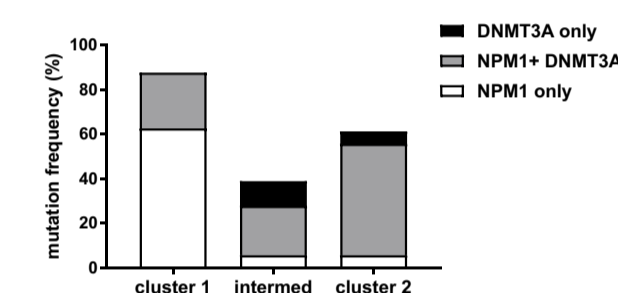
**Background:** TIM-3 is a known marker of T-cell exhaustion but it is also commonly found on leukemia blasts in acute myeloid leukemia (AML). TIM-3 positivity of AML blasts was associated with higher relapse rate and worse overall survival. Although TIM-3 function in AML cells is far from elucidated, TIM-3 was reported to mediate Galectin-9 secretion, and TIM-3/Galectin-9 release in the plasma might contribute to inhibition of T-cell effector function.

**Methods:** Transcript and surface protein levels of TIM-3 were analyzed in 53 samples of primary AML cells obtained from leukapheresis at diagnosis using qPCR and flow cytometry, respectively. In parallel, flow cytometry was used to measure surface levels of HLA, PD-L1, and the invariant peptide CLIP as a marker of lowered antigen presentation. Hierarchical clustering analysis was performed using the Wessa software ([www.wessa.net](http://www.wessa.net)). TIM-3 transcript was also analyzed in an independent larger cohort obtained from Vizome/BeatAML database.

## Hierarchical clustering analysis

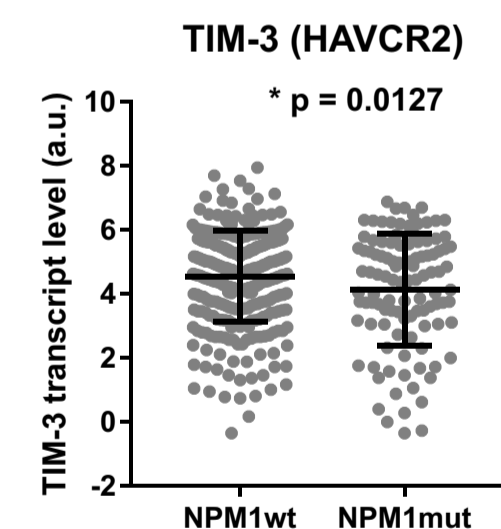


## Patient cluster with low HLA/CLIP/TIM-3 levels includes many patients with isolated mutation in nucleophosmin 1 (NPM1)



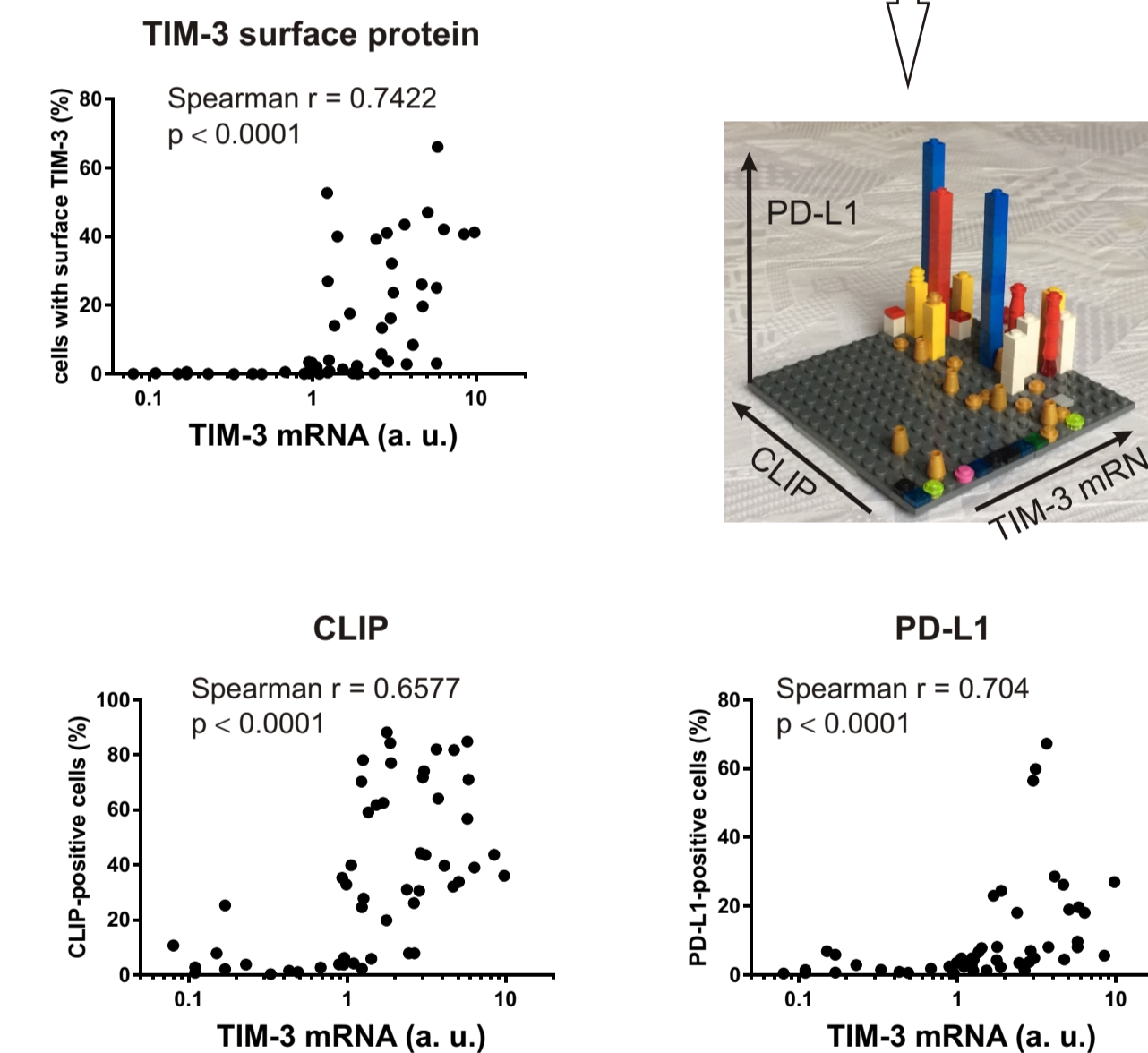
## Impact of NPM1 mutation on TIM-3 transcript levels

Data from Vizome/BeatAML database  
N = 340 for NPM1 wt group  
N = 108 for NPM1 mutated group

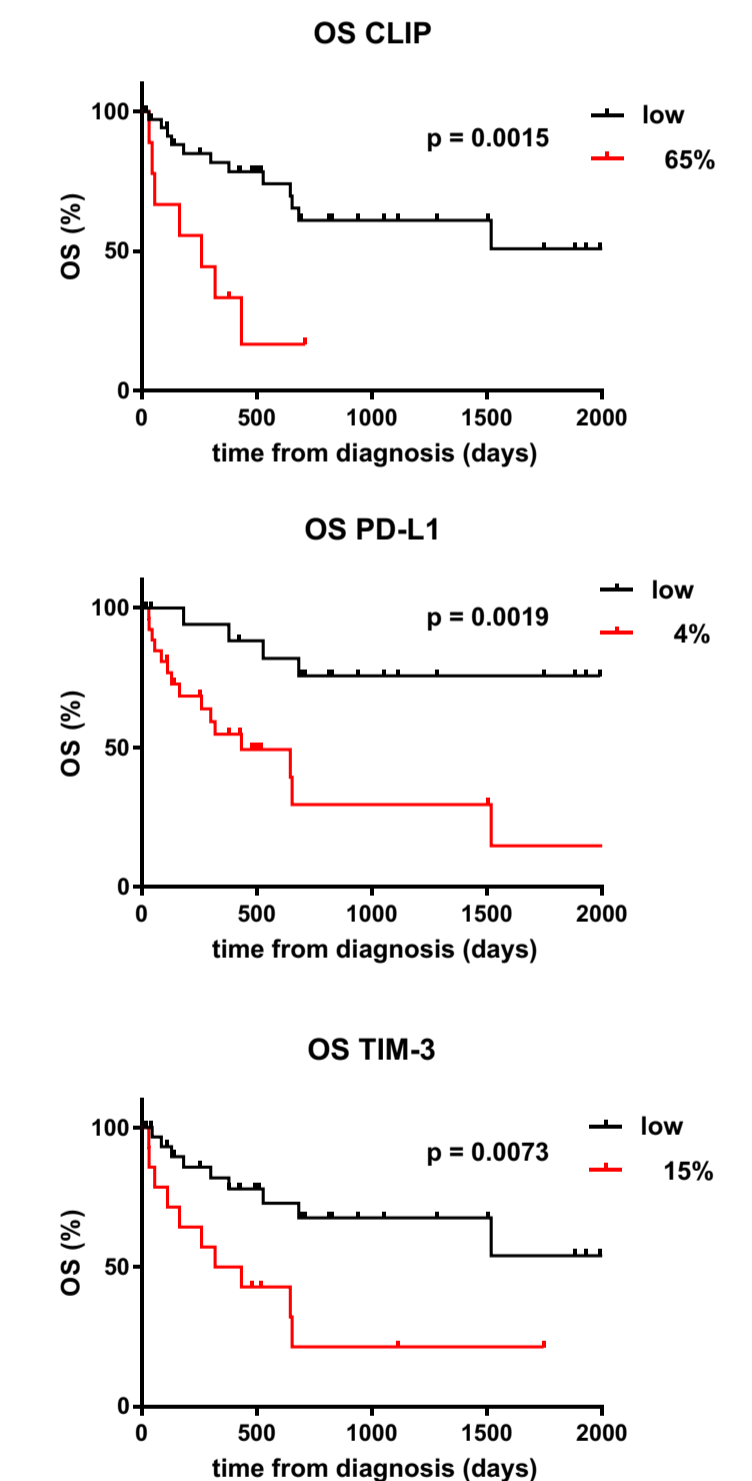


## TIM-3 transcript correlation with TIM-3 protein, CLIP, and PD-L1

TIM-3 transcript strongly correlated with surface TIM-3 expression, but also with surface CLIP and PD-L1.



## Overall survival analysis



**TIM-3 expression on leukemia blasts correlates with markers of immune escape, such as PD-L1 expression or defective antigen presentation. Increased resistance of leukemia cells to the immune system could contribute to increasingly reknown negative impact of TIM-3 on AML prognosis. Isolated NPM1 mutation is associated with low CLIP/PD-L1/TIM-3 expression.**

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