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## JMJD3 ПРОЯВЛЯЕТ ОНКОРЕПРЕССОРНУЮ АКТИВНОСТЬ В КЛЕТКАХ ОСТРОГО ПРОМИЕЛОЦИТАРНОГО ЛЕЙКОЗА, СТИМУЛИРУЯ ЭКСПРЕССИЮ PU.1<sup>1</sup>

© 2023 г. М.-Х. Wang<sup>a, b</sup>, S.-Н. Yu<sup>a</sup>, М. Xiao<sup>c, \*</sup>, J. Chen<sup>a, \*\*</sup>

<sup>a</sup>Shanghai Institute of Hematology, State Key Laboratory of Medical Genomics, National Research Center for Translational Medicine at Shanghai, Ruijin Hospital, Shanghai Jiao Tong University School of Medicine, Shanghai, 200025 China

<sup>b</sup>Department of Medical Oncology, Xuzhou Central Hospital, Xuzhou Medical University, Xuzhou, 221009 China

<sup>c</sup>Shanghai Ji Ai Genetics and IVF Institute, the Obstetrics and Gynecology Hospital of Fudan University, Shanghai, 200011 China

\*e-mail: xiaomin3296@163.com

\*\*e-mail: chenjuanrj@163.com

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Полностью *транс*-ретиноевая кислота, применяемая в терапии острого промиелоцитарного лейкоза, известна как часто используемый для индукции дифференцировки препарат, который восстанавливает экспрессию ключевого фактора транскрипции PU.1, детерминирующего нормальный гемопоэз клеток миелоидной линии. Ранее мы обнаружили, что индуцируемая стрессом гистондеметилаза H3K27 – JMJD3 – прямо активирует экспрессию PU.1, что стимулирует коммитирование миелоидных клеток в ходе нормального гемопоэза. Кроме того, JMJD3 действует как онкорепрессор и играет критически важную регуляторную роль в инициации и прогрессии злокачественного гемопоэза. В настоящей работе продолжено изучение связи между JMJD3 и PU.1 при остром промиелоцитарном лейкозе, при котором JMJD3 проявляет онкосупрессорную активность, стимулируя экспрессию PU.1.

**Ключевые слова:** острый миелоидный лейкоз, гистондеметилаза, JMJD3, PU.1, миелоидная дифференцировка

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## ***JMJD3 Exerts Oncorepressor Activity in Acute Promyelocytic Leukemia by Promoting PU.1 Expression***

**M.-X. Wang<sup>1, 2</sup>, S.-H. Yu<sup>1</sup>, M. Xiao<sup>3, \*</sup>, and J. Chen<sup>1, \*\*</sup>**

<sup>1</sup>*Shanghai Institute of Hematology, State Key Laboratory of Medical Genomics, National Research Center for Translational Medicine at Shanghai, Ruijin Hospital, Shanghai Jiao Tong University School of Medicine, Shanghai, 200025 China*

<sup>2</sup>*Department of Medical Oncology, Xuzhou Central Hospital, Xuzhou Medical University, Xuzhou, 221009 China*

<sup>3</sup>*Shanghai Ji Ai Genetics and IVF Institute, the Obstetrics and Gynecology Hospital of Fudan University, Shanghai, 200011 China*

*\*e-mail: xiaomin3296@163.com*

*\*\*e-mail: chenjuanrj@163.com*

All-trans retinoic acid (ATRA) in acute promyelocytic leukemia (APL) has been the most famous differentiation induction therapy during which the expression of PU.1, a key transcription factor (TF) for myeloid lineage determination in normal hematopoiesis is restored. In our previous studies, we found a stress-inducible H3K27 demethylase, JMJD3, to directly upregulate PU.1 expression to promote myeloid commitment during normal myelopoiesis. In addition, JMJD3 acts as an oncorepressor and plays a critical regulatory role in the initiation and progression of malignant hematopoiesis. In this study, we further resolved the relationship between JMJD3 and PU.1 in APL therein JMJD3 exerts oncorepressor activity via promoting PU.1 expression.

**Keywords:** acute myeloid leukemia, histone demethylase, JMJD3, PU.1, myeloid differentiation