



巴斯德讲坛-资深系列

Pasteur Colloquium-Senior

RNA Methylation Code: Regulations and Mechanisms



[Speake] Dr. YANG Yungui

[Time] 14:30-15:30PM, JAN. 10th, 2018

[Host] Prof. CHEN Changbin

[Venue] A0201, Life Science Research Building

[Speaker Introduction]

Dr. YANG Yungui is a professor at Beijing Institute of Genomics, Chinese Academy of Sciences (CAS). He received his BS degree in Microbiology from FuDan University in 1995 and PhD degree in Biochemistry and Molecular Biology from Shanghai Institute of Materia Medica/Shanghai Research Center of Biotechnology, CAS in 2000 with professors YANG Shengli and GONG Yi. He performed his postdoctoral research in the laboratories of Dr WANG Zhaoqi (International Agency for Research on Cancer-IARC, 2000-2003) and Dr Tomas Lindahl-2015 Nobel Chemistry Prize Laureate (Clare Hall Laboratories, Cancer Research UK London Research Institute, 2005-2008). He had served as a staff scientist at IARC from 2003-2005. His research interest is to dissect the roles and biological significance of epitranscriptomic RNA modifications with particular focus on dynamic RNA methylations (i.e. N6-methyladenosine-m6A).

[Abstract]

Over 100 types of chemical modifications have been identified in various types of RNAs including non-coding RNA and mRNA, among which methylation is the most common modification. The N6-methyladenosine (m6A) and N5-methyl-cytosine (m5C) are the most common and abundant internal modifications on mRNA molecules. The recent identification of methyltransferases METTL3/METTL14/WTAP and NSUN2, and m6A demethylases ALKBH5 and FTO, supports the reversibility of RNA methylation. Several YTH-domain-containing proteins YTHDF1-3 and YTHDC1-2 specifically binding to m6A and ALYREF recognizing m5C have been identified to regulate various mRNA processing, suggesting vital roles of RNA modifications in gene expression control. Our recent works revealed indispensable roles of m6A in mRNA translation, spermatogonial differentiation, meiosis Initiation, and haematopoietic stem and progenitor cell specification. Moreover, we further demonstrated 5-methylcytosine promotes mRNA export. We will discuss the recent progress in RNA modifications and their potential biological significance in this seminar.



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