Supplementary information S2: Roles of m^{6}A in RNA species other than mRNAs

In addition to the functions of *N*^{6}-methyladenosine (m^{6}A) in mRNA, m^{6}A exists and may have regulatory roles in other RNA species.

- MicroRNA (miRNA)

A crosstalk between m^{6}A and miRNA function has been hypothesized, as both miRNA-binding sites and a large fraction of m^{6}A sites are found in mRNA 3' untranslated regions. m^{6}A was first shown to impact miRNA biogenesis by regulating the processing of primary miRNAs (pri-miRNAs)[1]: heterogeneous nuclear ribonucleoproteins A2/B1 was proposed to be the m^{6}A reader for pri-miRNAs processing that recruits the Microprocessor complex to facilitate miRNA maturation[2]. A later study also suggested the existence of m^{6}A on mature miRNAs, and that the m^{6}A eraser fat mass and obesity-associated protein may affect the steady-state level of several miRNAs[3]. Interestingly, a most recent study reported that miRNAs promote site-specific m^{6}A deposition by mediating the binding of the m^{6}A writer methyltransferase-like protein 3, thereby affecting cell reprogramming[4].

- Long non-coding RNA (lncRNA)

LncRNAs have several sites of m^{6}A[5-7]. The modified adenosine fraction can range from less than 10% to greater than 90% between different lncRNAs[7]. This heterogeneity complicates the elucidation of the role of m^{6}A in lncRNA function. The lncRNA X-inactive specific transcript (XIST) was reported to contain 78 m^{6}A sites which are required for XIST function of transcriptional silencing of genes on the X chromosome[8].

- Transfer RNA (tRNA)

tRNA is heavily modified in a wide range of organisms[9,10]. Of these modifications, many feature large chemical moieties with roles in tRNA processing, localization, quality control and stabilization[11]. Yet only one m^{6}A site has been found on tRNA, located in tRNA^{Val} of *Escherichia coli*[12], and the positions and role of m^{6}A in eukaryotic tRNA are largely unknown.

- Ribosomal RNA (rRNA)

rRNA is decorated with several distinct modifications, most of which are involved in mRNA decoding or biochemical processing and stability of the ribosome. m^6A has been found on rRNA in both bacteria and human, but not in yeast[13]. Human rRNA contains only two known sites of m^6A modification, at position A1832 in 18S rRNA and position A4190 in 28S rRNA[14]. Currently the enzymes responsible for these modifications are not known, nor are the modifications' roles in ribosomal biogenesis or function[14-16].

- Other small RNAs

m^6A has been found in many small nuclear RNA species including in the splicing factors U2, U4, and U6[17-19]. Additionally, small nucleolar RNAs, which commonly guide the formation of rRNA modifications through sequence-specific base-pairing, contain several m^6A sites with unknown function[20].

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