

GENETICS

# 6TH BASE

20.03.2018

I could attend a very interesting talk yesterday of Thomas Carell. He reported quite a lot of interesting findings in particular as I did not watch that field. Cytosines were long known to exist in two functional states: [unmethylated or methylated](#) at the 5-position of the pyrimidine ring. In 2009 [two landmark papers](#) were published showing that these 5mC in CpG dinucleotides are converted to 5-hydroxymethyl-cytosine (hmC) by the action of oxygenases of the TET family. It turned out to be a complex story how – using artificial nucleotide incorporation and co-localization of citrate cycle enzymes – the NADH<sup>+</sup> dependent process of demethylation was discovered until the most [recent publication](#) of the [Carell group](#). With all the probability based research back in my mind, it was such a relief to see a logical pathway to discovery.

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