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 incoporation and co-localization of citrate cycle enzymes – the NADH+ dependent process of demethylation was discovered until the most recent publication of the Carell group. With all the probabilty based research back in my mind, it was such a relief to see a logical pathway to discovery.