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ABSTRACT

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**October, 29th-30th, 2015, Barcelona****Daniela Palacios**, IRCCS Fondazione Santa Lucia, Roma, Italy**Short talk: “Signal-dependent Degradation of EZH2 Regulates Terminal Differentiation of Muscle Stem Cells”**

Polycomb proteins are critical chromatin modifiers that regulate embryonic and adult stem cell differentiation via transcriptional repression. EZH2, the catalytic subunit of Polycomb Repressive Complex 2 (PRC2), methylates lysine 27 of histone H3 (H3-K27me3), a hallmark of Polycomb-mediated gene repression. EZH2 is down-regulated as cells differentiate, being undetectable in adult specialized cells and tissues. Conversely, EZH2 is abnormally expressed in a many tumours. In skeletal muscle progenitors, EZH2-mediated H3-K27me3 contributes to maintain the chromatin of skeletal muscle genes in a repressive conformation, whereas down-regulation of the gene allows the progression through the myogenic program. Polycomb proteins are critical chromatin modifiers that regulate embryonic and adult stem cell differentiation via transcriptional repression. EZH2, the catalytic subunit of Polycomb Repressive Complex 2 (PRC2), methylates lysine 27 of histone H3 (H3-K27me3), a hallmark of Polycomb-mediated gene repression. EZH2 is down-regulated as cells differentiate, being undetectable in adult specialized cells and tissues. Conversely, EZH2 is abnormally expressed in a many tumours. In skeletal muscle progenitors, EZH2-mediated H3-K27me3 contributes to maintain the chromatin of skeletal muscle genes in a repressive conformation, whereas down-regulation of the gene allows the progression through the myogenic program.

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