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分离酶的作用及其调节Activity of Separase and Its Regulation

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摘要　姐妹染色单体的分离是一精确时空调控事件，分离的紊乱会造成遗传物质传递的不稳定，从而可能引起严重的后果—细胞或个体的死亡或病态。在真核生物细胞中，一种比较保守的机制调控着姐妹染色单体的分离：随DNA复制过程建立由黏合素维持的姐妹染色单体的结合，在有丝分裂中期向后期转变过程中，随保全素的降解，分离酶发挥活性，裂解黏合素一个亚单位，促成黏合素蛋白质复合体的解离和姐妹染色单体的分离。Abstract: Sister chromatids separation is under precise regulation during cell cycle. Any turbulence happened in the separation process can cause instability in the transmission of inherited material ,and may cause: death or disease of cell or even individual. In eukaryotic cells, one conserved mechanism governs the separation of sister chromatids. Cohesion between sister chromatids is established during DNA replication and depends on a multiprotein complex called cohesin. At the metaphase to anaphase transition, separase is activated by proteolysis of securin. Separase can cleave one of cohesin's subunits, and then promote cohesin dissociation and sister chromatids separation.

关键词　姐妹染色单体　非整倍性　黏合素　保全素　分离酶Key words　sister chromatid　aneupoidy　cohesin　securin　separase

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