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Moonlighting proteins

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Moonlighting proteins comprise an interesting subset of multifunctional proteins in which the two functions are found in a single polypeptide chain. They do not include proteins that are multifunctional due to gene fusions, families of homologous proteins, splice variants, or promiscuous enzyme activities. The list of known moonlighting proteins includes several different kinds of proteins and different combinations of functions. In addition, recent crystal structures of some moonlighting proteins have provided clues to the molecular mechanisms of one or both functions, and in some cases how a protein can switch between functions. The ability of proteins to 'moonlight' might be one reason why the human genome contains fewer protein encoding genes than had been predicted.

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