

SCAFFOLD ATTACHMENT REGIONS - SPANDRELS IN THE GENOME

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Scaffold attachment regions (SAR) are highly AT rich regions, approximately 200 bp in size found associated with the nuclear scaffold. The distances between SAR vary from less than 3 kb to 112 kb (Gasser, S.M., Amati, B.B., Cardenas, M.E. & Hofmann, J.F.X. (1989) *Int. Rev. Cyt.* **119**:57-95). The primary function of SAR is to give mechanical support to the large mass of DNA in a eukaryotic cell. This facilitates replication and transcription. A number of proteins including RNA polymerases and topoisomerase II are associated with the SAR. Topoisomerase II helps in relieving torsional stress that develops during transcription. A dysfunction of topoisomerase II is bringing about illegitimate recombination (Sperry, A.O., Blasquez, V.C. & Garrard, W.T. (1989) *Proc. Natl. Acad. Sci. USA* **86**:5497-5501). In several instances SAR may also function in limiting enhancer action. Thus a number of functions have evolved on the basic structural role of the SAR making them akin to the spandrels of San Marco (Gould, S.J. & Lewontin, R.C. (1979) *Proc. Roy. Soc. Lond.* **B205**:581-598).

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