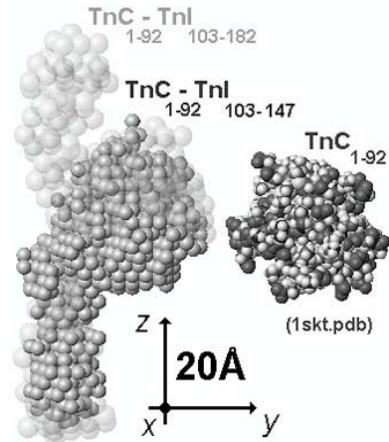


W0131

Mapping Contacts Between Regulatory Domains of Skeletal Muscle TnC and TnI by Analyses of Single-Chain Chimeras. C.L.P. Oliveira, A.O. Tiroli, L. Tasic, C. Bloch, C.S. Farah, C.H.I. Ramos, I.L. Torriani, IFGW-UNICAMP and Laboratório Nacional de Luz Síncrotron, Campinas - Brazil.

The troponin complex is composed of three subunits (TnC, TnI and TnT) and is responsible for the calcium-dependent inhibition of muscle contraction. While the crystal structure of the core cardiac muscle troponin complex has been determined, very little high resolution information is available regarding the skeletal muscle TnI-TnC complex. With the aim of obtain structural information regarding specific contacts between skeletal muscle TnC and TnI regulatory domains, we have constructed two recombinant chimeric proteins composed of the residues 1-91 of TnC linked to residues 98-182 or 98-147 of TnI. Using Small Angle X-ray Scattering technique combined with ab initio modeling, we have shown that these chimeras fold into compact structures in which the inhibitory plus the C-domain of TnI, with the exception of residues 148-182, were in close contact with the N-terminal domain of TnC. Also, with the results presented in this work, combined with information available in the literature, we could propose a model for the structure of TnI and TnC that can explain their interaction during muscle contraction.



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