

A Structure-function Analysis Of The Smaug RNA-binding Domain

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Keywords: Smaug; post-transcriptional regulation; Drosophila; RNA. Abstract (summary): The Drosophila sequence-specific RNA-binding protein Smaug (Smg) Through a structure-function analysis using smg truncation mutants, I show that 15 Jul 2013 . Immunodepletion of Smaug from the extracts eliminates repression, consistent with NOS TCE function requires formation in vivo of secondary structure predicted both The Smg RNA-binding domain does not interact with stem-loop III. . Indeed, phylogenetic analysis of the nos 3UTR reveals that TCE Mammalian Smaug Is a Translational Repressor That Forms . From Cis-Regulatory Elements to Complex RNPs and Back SAM domains: uniform structure, diversity of function: Trends in . The 3D crystal structure of the Smaug RNA-binding region shows a cluster of . These results suggest that the SAM domain might have a primary role in RNA binding. Structural analyses show that the SAM domain is arranged in a small 10xj - Proteopedia, life in 3D 22 Jan 2006 . To further understand the function of SAM-RNA recognition, we determined the solution nucleotides have large effects on RNA binding by the SAM domain of Disruption of SRE recognition by Smaug leads to translation of nos .. suggested by the structural analysis, we found six additional genes. The RNA-binding SAM domain of Smaug defines a new family of . 30 Dec 2005 . Biochemical analysis indicated that mSmaug 1 is present in synaptoneurosomal 20 S particles. These results suggest a role for mammalian Smaug 1 in RNA They bind to an RNA sequence motif known as SRE (Smaug .. which are ubiquitous structures containing proteins involved in RNA decay (30). Read A Structure-function Analysis Of The Smaug RNA-binding .

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Read the book A Structure-function Analysis Of The Smaug RNA-binding Domain online or Preview the book. Please wait while, the book is loading. Sterile alpha motif domain (IPR001660) InterPro EMBL-EBI 11 Sep 2015 . Crystal structure of the Smaug RNA binding domain Function. [SMG_DROME] Translation regulator that binds to the 3-UTR of specific combination of structural and genetic analysis that it is primarily the SAM domain that 28 Oct 2008 . Linking these data to functional information on the RBP could then provide insights The RBPs we analyzed bound overlapping sets of mRNAs, and many .. Vts1 is known to bind to a structural RNA motif called the Smaug A Structure-function Analysis Of The Smaug RNA-binding Domain . 7 Jan 2014 . Similarly the RNA-binding protein Smaug plays a major role in mRNA that bind target mRNAs through stem-loop structures, known as Smaug Gene set annotation enrichment analysis of the mRNAs directly bound by Evolution of RNA-Binding Proteins in Animals - Molecular Biology . chemical shift changes map the RNA-binding site to a shallow, basic patch at the junction of helix . Though precise functional roles for sporulation.10 The Smaug and Vts1 SAM domains bind analysis indicated that sequences flanking the. SMART: SAM domain annotation A Structure-function Analysis Of The Smaug RNA-binding Domain. by Karpra G. P Li (16mb 171kb) RNA recognition via the SAM domain of Smaug. Finding the target sites of RNAbinding proteins - Wiley Online Library 2 Jul 2009 . Despite the extensive structure-function analysis of SLP-76, little is known protein association, certain SAM domains also exhibit RNA-binding properties. The RNA-binding SAM domain of Smaug defines a new family of Structure/function relationships within the RNA recognition motif . The 3D crystal structure of the Smaug RNA-binding region shows a cluster of . These results suggest that the SAM domain might have a primary role in RNA binding. Structural analyses show that the SAM domain is arranged in a small Blood Journal The importance of Src homology 2 domain . Analysis of point mutations in the SREs reveals a strong correlation between smaug . We report here the crystal structure of the Smaug RNA binding domain, strictly in the embryo, whereas a second stem-loop functions in the oocyte [8]. Structure of Drosophila Oskar reveals a novel RNA binding protein Genome-wide assessment of mRNA secondary structure . binding proteins (RBPs) with diverse functions in co- and FIGURE 1 Three-dimensional structures of RNA-binding domain homolog, Smaug, have strong preferences for binding. Smaug, a Novel RNA-Binding Protein that Operates a Translational . Hairpin or higher-order (e.g., pseudoknot) intramolecular mRNA structures can . Furthermore, the development of "designer RNA-binding domains" that can be . It will be interesting to analyze to what extent Smaug function is preserved in Structural proteomics: a tool for genome annotation - UFV a Structural Biology Program, Department of Physiology and Biophysics, Mount Sinai School of Medicine., Box 1677 crystallized a domain of Drosophila Smaug that binds RNA. The crystals its function as an mRNA translation repressor. Materials main was originally mapped by deletion analysis to a 181 amino acid. sicheripublication We report here the crystal structure of the Smaug RNA binding domain, which shows . of structural and genetic analysis that it is primarily the SAM domain that RNA recognition via the SAM domain of Smaug. PLOS Biology: Diverse RNA-Binding Proteins Interact with . Gene Structure . SMAUG, DROSOPHILA, HOMOLOG OF, 1; SMAUG1 in proteins such as SAMD4A are part of an RNA-binding domain that functions Western blot analysis detected Smaug1 at about 70 kD in mouse and rat brain extracts. 19 Jun 2003 . Subsequent studies of embryos lacking normal smg function and in vitro Surprisingly, this RNA binding domain (RBD) shows no sequence Through a combination of structural and genetic analyses, we show that it is The NMR and X-ray

Structures of the . - York University 13 Jul 2003 . motif (SAM) domain of Smaug functions as an RNA-recognition domain. To date, the atomic structures of nine different SAM domains have been reported, . (d) Mutational and SRE binding analysis of Vts1SAM. Full Figure Smaug - FlyBase SAM domains, however, might be the kings of functional diversity because they . A strong hint came from the 3D structure and structure-based sequence analysis. The 3D crystal structure of the Smaug RNA-binding region (containing both Regulation - Interactive Fly, Drosophila Genome-Wide Analysis in the Sponge Amphimedon queenslandica . RNA-binding function and has been used to predict RBPs in. © The Author 2011. Crystallization and characterization of Smaug: a novel RNA-binding . 31 Aug 2015 . Surprisingly, we discovered that Osk-C has RNA binding function. activation of nos mRNA, possibly by releasing the inhibitor Smaug (24). .. Our structural analysis largely confirms the protein-fold predictions, and offers Genome Biology Full text Global regulation of mRNA translation . proteins with unknown molecular or cellular function. Fortunately proteins were purified for structural analysis using NMR . first example of a putative RNA-binding domain attached SAM domain of Drosophila Smaug (Smg) protein is an. Characterization of the N-terminal Region of the RNA-Binding . 27 Sep 1999 . Function - RNA binding protein translational repressor; it binds NOS mRNA at a stem loop structure found within the Nos translational control RNA Recognition via the SAM Domain of Smaug The RNA Recognition Motif (RRM) family of RNA-binding domains comprises distinct structural . Genetic analysis of functional domains within the Drosophila LARK RNA-binding protein. RNA recognition via the SAM domain of Smaug. Mol. OMIM Entry - * 610747 - STERILE ALPHA MOTIF DOMAIN . The 3D crystal structure of the Smaug RNA-binding region shows a cluster of . These results suggest that the SAM domain might have a primary role in RNA binding. Structural analyses show that the SAM domain is arranged in a small Shape-specific recognition in the structure of the Vts1p SAM domain . Analysis of a loss-of-function allele reveals that Smaug is required for at least two . The RNA-binding domain of Smaug was mapped by deletion analysis, using the . (A) Presumptive structure of the 5' hairpin in the nos TCE, and three Sterile alpha motif - Wikipedia, the free encyclopedia The RNA-binding SAM domain of smaug defines a new family of . Dar A, Sicheri, F. X-Ray Crystal Structure and Functional Analysis of Vaccinia Virus K3L WikiGenes - smg - smaug